EFFECT OF RESOURCE CHARACTERISTICS ON SUSTAINABLE COMPETITIVENESS IN THE SERVICE SECTOR: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE UNIVERSITIES IN KENYA

BY
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DECLARATION

DECLARATION BY CANDIDATE

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DEDICATION

I dedicate this PhD thesis to my son Ethan Kipchumba that he may strive to achieve more than this. I also dedicate it to my parents Mr. and Mrs. Patrick Maket and my Husband Mr. Richard Tirop for their continuous encouragement throughout this program. My siblings, Timothy, Evelyn, Hillary and Brigid let this be the torch that lights your path.

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ABSTRACT

This study sought to assess effect of resource characteristics on sustainable competitiveness in the service industry in Kenya. Studies on university competition have been based on student enrollment; growing demand for accountability and borderless learning. This study focuses on resources characteristics as predictor of sustainable competitiveness. The study compared one private and one public university. The specific objectives of the study were to: compare the level of sustainable competitiveness in public and private universities; compare the resource characteristics in public and private universities in Kenya and to determine the effect of internal resource characteristics (Value, rarity, inimitability and non-substitutability) on sustainable competitiveness while controlling for the age of the university, location and cost of programs. The study was embedded on Resource Based View model (RBV) by Wernerfelt and the Balanced Scorecard theory of Kaplan and Norton. The study applied causal-comparative design. The respondents included staff of both universities in four schools: school of Arts and Social Sciences, School of Education, school of Business/ commerce and school of Law. From the public university the total staff population at the four schools was 250 while those in the private university were 170. Using krejcie and Morgan table, the sample respondents from the public university was 148 and those from the private university was 114 respondents. Independent sample t-test was used to test whether there was any significant difference in sustainable competitiveness and resource characteristics between private and public universities. Further the study used regression analysis to test the hypothesis that resource characteristics have no effect on sustainable competitiveness. The independent sample t-test found out that there was a significant difference in sustainable competitiveness between private and public universities. The public university was more superior in sustainable competitiveness as compared to the private university. All the resource characteristics also showed a significant statistical difference between public and private universities. Results indicated that the public university possed more superior resource characteristics as compared to the private university. The regression results indicated that three resource characteristics had statistical significant effect on sustainable competitiveness. Non-substitutability was found not to significantly predict sustainable competitiveness. The research findings are intended to help university management and CUE to ensure that universities poses resources that are valuable, rare, and inimitable as these are significant predictors of sustainable competitiveness.

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
CHE	Commission of Higher Education
CIDA	Canadian International Development Agency
CUE	Commission of University Education
CUEA	Catholic University of Eastern Africa
HEIs	Higher Education Institutions
ICT	Information Communication Technology
IFC	International Financial Corporation
JAB	Joint Admission Board
JICA	Japan International Cooperation Agency
NACOSTI	National Council for Science, Technology and Innovation
ODA	Official Development Assistance
ODL	Open and Distance Learning
PSSP	Privately Sponsored Student Program
QA	Quality Assurance
RBV	Resource-Based View
SIDA	Swedish International Development Agency
UNESCO	United Nations Educational, Scientific and Cultural Organization
VIF	Variance Inflation Factor
VRIN	Value, Rare, In-imitable and Non-substitutable

DEFINITION OF KEY OF TERMS

Causal Ambiguity: Causal ambiguity is the continuum that describes the degree to which decision makers understand the relationship between organizational inputs and outputs (King 2007). Their argument is that inability of competitors to understand what causes the superior performance of another (inter-firm causal ambiguity), helps to reach a sustainable competitive advantage for the one who is presently performing at a superior level.

Differentiation: a business strategy that seeks to build competitive advantage with its products or service by having it different from other available competitive products based on features, performance or other factors not directly related to cost and price. The difference would be one that would be hard to create or difficult to copy or imitate (Lynch, 2003).

Dynamic capabilities: the firm's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments

Inimitable: A central proposition in strategy is that firms sustain relative performance advantages only if their existing and potential rivals cannot imitate them (Nelson and Winter 1982, Dierickx and Cool 1989, Barney, 1991).

Non-substitutable: Means that there must be no strategically equivalent valuable resources that are themselves either not rare or imitable. (Saloner et al. 2001)

Resource Rareness: Resource rareness implies that competitors do not have access to the particular resource, or that they have only limited access. Valuable resources that are not rare cannot be the sources of the competitive advantage (Talaja, 2012)

Resources: Tangible assets (location, plant, equipment); intangible assets (patents, brands, technical knowledge) and organizational processes (Product development, country entry, partnering) from which managers can develop value value-creating strategies (Hafstrand, 2002).

Resource Characteristics: They include (VRIN) Value, Rare, In-imitable and Non-substitutable (Talaja, 2012)

Social Complexity: It is the existence of very complex social phenomena, beyond the ability of firms to systematically manage and influence. When competitive advantages are based on such phenomena, the ability of other firms to imitate these resources is significantly constrained (Barney, 1991)

Sustainable Competitiveness: An institution of higher learning is termed as sustainably competitive if its performance can be measured not only financially but also using other key success factors for an organization, employee satisfaction and Innovation (Ruben, 1999) Implementing a value-creating strategy not

simultaneously being implemented by any current or potential competitors (Barney, 1991)

Resource Value: A resource that enables a firm to employ a value-creating strategy, by either outperforming its competitors or reduce its own weaknesses (Amit & Schoemaker, 1993).

CHAPTER ONE: INTRODUCTION

1.0 Overview

This chapter presented the introductory part of the study and comprised of the background of the study, statement of the problem, objectives of the study, hypothesis, Justification of the study, significance of the study, scope and limitation of the study.

1.1 Background of the Study

1.1.1 Sustainable Competitiveness

Sustainable competitive advantage is the prolonged benefit of implementing some unique value-creating strategy based on unique combination of internal organizational resources and capabilities that cannot be replicated by competitors. Sustainable competitive advantage allows the maintenance and improvement of the enterprise's competitive position in the market. It is an advantage that enables business to survive against its competition over a long period of time (Hafstrand, 2002).

The means by which some businesses achieve and sustain a competitive advantage over other firms is the central research focus of strategic management (McGee *et al*, 2000). During the late 1970s and the 1980s, the strategy literature emphasized the external environment of the firm. The focus was on the analysis of the industry attractiveness and the competition. The work of Harvard economist Michael Porter was very influential (Hafstrand, 2002).

Strategic analysis and choice continue to form the phase of the strategic management process in which business managers examine and choose a business strategy that allows their business to maintain or create sustainable competitive advantage. Their starting point is to evaluate and determine which competitive advantage provide the basis for

distinguishing the firm in the customers' mind from other reasonable alternatives (Pearce and Robinson, 2007)

In the late 1980s and early 1990s, the focus increasingly shifted towards the internal aspects of the firm (Hafstrand, 2002). Research has begun to recognize the use of resource –based capabilities in gaining and maintaining competitive advantage (chandler & Hanks, 1994; Long and Vickers-Koch, 1995; McGee & Finney, 1997). Tracing its roots from the traditional strategic management concept of distinctive competence e.g. (Selznik, 1957; Andrews, 1971), the resource-based view argues that competitive advantage results from firms a firms' resources and its capabilities. Resources include capital equipment, workers and management skills, reputation and brand names (Barney, 1991). Resources are the source of a firm's capabilities; and capabilities refer to a firm's ability to bring together and deploy them advantageously (Day, 1994). While resources are relatively tangible, capabilities are less readily assigned a monetary value, and are often deeply embedded in organizational routines and practices, thereby making them less subject to imitation by present or potential competitors (Dierkx & Cool, 1989).

Distinctive competencies (Selznik, 1957; lado, *et al*, 1992) refer to the unique skills and activities that a firm can do better than its competitors. When competition intensifies, the possession of these competencies should become increasingly important for the firm's continued success. These are the distinctive capabilities that support a market position that is valuable and difficult to imitate.

Institutions of higher education are also in competition and (Clarke, 1997) argues that if they are to compete more aggressively, they need to determine the areas of comparative

competence on which to base successful resource-led strategies. In Kenya (Materu, 2007) Higher Education Institutions (HEIs) become more competitive as a result of increasing private sector participation, growing demand for accountability, limited public funding and the advent of borderless HEIs. Added to this is the growing trend in international ranking of universities.

1.1.2 Public and Private Universities

Most public universities are controlled by the state, which typically has paid for the costs of higher education out of general taxation. Students pay little or no tuition and public institutions usually determine access to higher education by means of selective exams (Aziz *et al*, 2013; Romero and Del Ray, 2004).

The expansion of private education has taken place in response to high demand for access to higher education and without a rise in public funding. However, the quality of many of these universities is questionable, and it seems that private colleges and universities are absorbing the demand in fields in which the cost of offering instruction is low (Romero and Del Ray, 2004).

Western European countries have had a long history of existence of private universities. They have established a high reputation among the public as elite universities that enroll only the most privileged, as a result of high quality teaching and stressing of graduates in the labor market. The situation is completely different to private universities in the countries of Central, Eastern and Southeastern Europe. Private universities here struggle to survive in a competition with public universities, faced with many problems if the quality of teaching, acceptance of graduates in the labor market, unfair competition, and acceptance by the public (Aziz *et al*, 2013).

The opinion at the public universities is that the students are individuals who do not need guidance or monitoring by the professors, while the private universities are more oriented towards a culture of study, which is more sensitive to the needs of the student and involves responsibility for their progress. The policies for accreditation of a private university include strict criteria for staff recruitment, which apart from academic qualifications also demand research capacities (Aziz *et al*, 2013).

1.1.3 Differences in Public and private Universities

Public universities offer studies that are not to be found at the private universities (especially from natural and technical sciences); Acceptable scholarships for the students in the state quota (Aziz *et al*, 2013).

The weaknesses of public universities include: Insufficient flexibility of curricula; Still dominant authoritarian attitude of the teaching staff; Inadequate accessibility of the teaching and administrative staff; Focus on knowledge and not on Competencies; Inexistence or insufficient control of the student practice; Lack of data for the students' success in the labor market; Slow adaptability to the conditions in the labor market; Overburdening of the students; Insufficient cooperation between the teaching staff and the students; Suspicions of corruption; Dispersed studies -threat to the quality (Bunoti, 2011; Kasozi,2006;).

Private universities on the other hand, offer interdisciplinary studies that are new and lacking in the market; Modern conditions for study Orientation to practical teaching (visits of institutions, helping the students find companies for practice); Accessibility of the teaching staff and collaboration with the students; Less bureaucracy; Flexibility and adaptability of the curricula; Sufficient resources for contemporary conditions for study

(increase of library holdings, ICT equipment, foreign lecturers) Bunoti , 2011; Kasozi, 2006).

Weaknesses of private universities include: Their curricula is taken from other institutions, undeveloped or ill-adjusted; Narrow focus of the curricula (too specialistic); Doubts concerning the quality of education by the public; Relatively high scholarships and additional expenses; Doubts by part of the labor market concerning the qualifications of the graduates; Suspicions of lower criteria for the students' knowledge; Lack of selection of the enrollment candidates; Sometimes are seen as private companies and not as educational institutions (Aziz *et al*, 2013; Mamdani, 2007; Del Ray and Romero,2004).

1.1.4 Universities in Kenya

Kenya has 22 accredited public universities; 9 public university constituent colleges; 17 private universities; 5 private constituent colleges; 13 Institutions with letters of Interim Authority and 1 registered private Institution (CEU website, 2014)

The Commission for University Education (CUE) was established under the Universities Act, No. 42 of 2012, as the successor to the Commission for Higher Education. It is the Government agency mandated to regulate university education in Kenya.

The Commission has made great strides in ensuring the maintenance of standards, quality and relevance in all aspects of university education, training and research. The Commission continues to mainstream quality assurance practices in university education by encouraging continuous improvement in the quality of universities and programmes (CEU website, 2014.

CUE's university standards and guidelines (2014) include: Insstitutional standards; standards for physical resources; standards and guideline for academic programmes;

standards and guideline for open, distance and e-learning; standards and guideline for university libraries; standards for technical universities and standards for specialized degree awarding institutions

1.2 Problem Statement

There are surprisingly few theoretical studies devoted to the university system, despite its quantitative and qualitative importance, and researchers' direct interest in it (Fraja and Iossa,2001). There are several basic features that set the university sector apart from other, better studied, industries. Firstly, the higher education market does not typically clear in the usual sense: notwithstanding the potential existence of a market price for university education, most systems allocate places to students by administrative rationing. Secondly, the performance of a university (measured along the dimension of the quality of the teaching provided) depends positively on the ability of its own students: universities use a customer-input technology (Rothschild and White 1995).1 Thirdly, the profit maximizing behavior typically assumed for large commercial organizations, as well as for some not-for-profit private institutions, is not likely to be a good proxy for the objective function of individual universities(Romero and Del Rey, 2004).

This research builds on previous research results, in particular, competition among educational Institutions which has been the object of study of Del Rey (2001) and De Fraja and Iossa (2002), in the case of symmetric universities, and Epple and Romano (1998), in the case of public and private schools. In Del Rey (2001) the study analyzed a game between two publicly financed universities competing for students in the same jurisdiction. In doing so, he put together three elements of higher education provision that appear separately in previous literature about university behavior: the trade-off between teaching and research (Garvin, 1980; Boroah, 1994), the competition among universities

(Gary-Bobo and Trannoy, 1998b; Debande and Demeulemeester, 1998) and the role of the incentives provided by the government (Gary-Bobo and Trannoy, 1998a,b). The model considers two identical universities that care for research as well as the increase in productivity of students through education. The education production function is assumed to depend on student's average ability as well as resources devoted to teaching.

According to Aghion *et al*, (2010) universities' performance is correlated with their autonomy and competitive environment. Within Europe, some countries, such as the United Kingdom (UK) and Sweden, have unusually autonomous universities and unusually productive universities. For the United States, they show that states' public universities differ considerably in their autonomy and the degree to which they face local competition from private universities. This research used causal comparative analysis, to test the effect of resource (value, rarity, in-imitable and non-substitutable) on sustainable competitiveness in both private and public universities in Kenya.

According to the Resource-based view (RBV) of strategic management, competitive advantage is closely related to company's internal characteristics (Spanos and Lioukas, 2001). More specifically, if a company possesses and exploits valuable, rare, inimitable, and non-substitutable resources and capabilities, it will achieve sustainable competitive advantage and above average performance (Barney, 1991, Talaja, 2012). The above-mentioned statement is known in strategic literature as VRIN framework. Although the RBV is one of the most influential theories of strategic management, it has received only modest support that varies considerably with the independent variable and theoretical approach employed.

There is a lack of research on characteristics of resources; value, rareness, in-imitability and non-substitutability Newbert (2007, 2008). As emphasized by Priem and Butler (2001), to infer that resources and capabilities are valuable, rare, in-imitable and non-substitutable simply because they are related to competitive advantage is to assume that VRIN hypotheses that link resource characteristics to competitive advantage are factual and do not require any empirical confirmation. These hypotheses are in fact purely theoretical and for them to be supported an empirical investigation is necessary (Priem and Butler, 2001; Newbert, 2008, Talaja, 2012). Nevertheless, only few empirical studies examine VRIN resource characteristics at the conceptual level (Spanos and Lioukas, 2001; Newbert, 2007, Talaja, 2012).

Although the RBV is considered one of the most influential theories of strategic management (Powell, 2001; Priem and Butler, 2001; Newbert, 2008), its acceptance seems to be based more on the basis of logic and intuition than on the empirical evidence (Newbert, 2008). In most studies that examine the connection between company's resources and performance, resource heterogeneity approach is employed. By that approach, specific resource or capability is claimed to be valuable, rare, imperfectly imitable or nonsubstitutable, and then the amount of that resource or capability that a company owns is correlated with competitive advantage or performance (Newbert, 2007, 2008). This type of research provides evidence that a specific resource can help company to achieve competitive advantage, but does not verify the influence of resource characteristics (value, rareness, inimitability and non-substitutability) on competitive advantage (Newbert, 2008).

In business, financial measures have traditionally been the primary focus, a broadened range of performance indicators are being introduced to more fully represent key success factors for an organization and employee satisfaction and innovation. As issues of performance measurement and issues of accountability become increasingly consequential in higher education, an understanding of the concerns motivating these changes within the private sector and the new measurement frameworks which are emerging can be extremely useful (Ruben,1999).

This study therefore sought to establish the effect of resource characteristics (value, rareness, inimitability and non-substitutability) on sustainable competitiveness. It was also carried out in the universities context, being that few theoretical studies have been devoted to the service industry, despite its quantitative and qualitative importance (De Fraja and Iossa,2001), and researchers' direct interest in it.

1.3 Objectives of the Study

This study was guided by a general objective and specific objectives

1.3.1 General Objective

The general objective of the study was to establish the effect of resource characteristics constructs (VRIN) on sustainable competitiveness on universities in Kenya.

1.3.2 Specific objectives

The specific objectives were:

1: To compare the level of sustainable competitiveness in public and private universities

2: To compare the resource characteristics in public and private universities.

3: To determine the effect of internal resource characteristics on sustainable competitiveness while controlling for the age of the university, location and cost of programs

1.4 Research Hypotheses

H_{01} There is no significant difference in sustainable competitiveness between private and public universities.

H_{02} There is no significant difference in resource characteristics between private and public universities.

Ho_{2a} There is no significant difference in resource value between private and public universities.

Ho_{2b} There is no significant difference in resource rarity between private and public universities.

Ho_{2c} There is no significant difference in resource inimitability between private and public universities.

Ho_{2d} There is no significant difference in resource non-substitutability between private and public universities

H_{03} Resource characteristics have no effect on sustainable competitiveness of an institution when controlling for the age of the university, location and cost of programs

1.5 Significance of the Study

The research will be of value to the management of the institutions of higher learning as it will provide an insight on the effect of resource characteristics on sustainable

competitiveness of their institutions. That is, if institutions possess valuable, rare, hard to copy and not easy to substitute resources (VRIN) they will eventually enjoy sustainable competitiveness. It will also help the government in policy formulation regarding private and public universities basing on the resources with VRIN characteristics and sustainable competitiveness. Lastly, this research makes a significant contribution to the RBV theory by confirming that resource value, rarity and inimitability are key in an institutions ability to attain sustainable competitiveness.

1.6 Scope of the Study

The study established the effect of resource characteristics (VRIN) on sustainable competitiveness in institutions of higher learning. The research was limited to resource characteristics as a predictor of sustainable competitiveness, though there are other factors that predict an organization's sustainable competitiveness. The study being a comparative study focused on private and public universities in Kenya. This gave the researcher an opportunity to distinguish between the two universities resources characteristics and sustainable competitiveness. The research was conducted between Moi University (public) and Catholic University of Eastern Africa (CUEA) as the private university. This was with the assumption that these institutions of higher learning have resources with distinct characteristics (VRIN) which leads to sustainable competitiveness. The study was conducted between June 2012 and December 2013.

CHAPTER TWO: LITERATURE REVIEW

2.0 Overview

This chapter discusses literature related to the concept of sustainable competitiveness; institutions of higher learning excellent indicators; the Resource Based View as the theory that embeds the study and its characteristics; Valuable, Rare, Inimitability and Non-substitutability. A conceptual and theoretical framework is also given and discussed.

2.1 The Concept of Sustainable Competitiveness

Historically, attempts to address the possibility of attaining a sustainable competitive advantage has been viewed from four major aspects (Ma, 2003). They are: the structural approach based on industrial organization (IO) economics (porter, 1980, 1985); the resource based view (RBV) of the firm (Barney, 1991, 2001): traditional IO economics and game theory (Caves, 1984; Ghemawat, 1991), and Schumpeterian economics (Schumpeter, 1934,1950; Foster and Kaplan, 2001). Two recent additions are the Dynamic Capability View and the Blue Ocean Strategy. In their effort to define and to specify the fundamental methods of competitive advantage, all of the views tend to limit an organization in understanding the nature of the full dynamism of the strategy. The resource-based view primarily focuses on the development of the competitiveness for the future whilst other view's central concern emphases on the present deployment of resources which was previously developed. The primary purpose of an organization's existence is not only to exist but also to thrive. Sustainability, therefore, can only be obtained while juxtaposing both – the present and the future.

It is noted that despite much work in the area of sustainability, there is not yet a well-established body of literature on the link between performance (which is at the heart of competitiveness) and sustainability. However, in this research the relationship between

competitiveness and sustainability is crucial. It has become increasingly clear that over the longer term, in order to maintain organizational competitiveness, it is not enough to focus only on short- and medium term performance drivers, but a number of additional characteristics are also important for supporting productivity over the longer term. An organization should be socially cohesive, should live within its financial means, and should ensure the correct and efficient use of its resources. This study was based on the balanced scorecard model of Kaplan and Norton (1992). This model illustrates four measures that drive performance. They include: the financial perspective, customer perspective, internal processes perspective and the learning and growth perspective.

Sustainability in the context of competitive advantage is independent with regard to the time frame. Rather, a competitive advantage is sustainable when the efforts by competitors to render the competitive advantage redundant have ceased (Rumelt, 1984; Barney, 1991). When the imitative actions have come to an end without disrupting the firm's competitive advantage, the firm's strategy can be called sustainable. This is in contrast to views of others (e.g., Porter, 1985) that a competitive advantage is sustained when it provides above-average returns in the long run. According to VRIN framework, valuable, rare, imperfectly imitable and not substitutable resources have the potential for creating sustainable competitive advantage (Barney, 1991).

The term competitive advantage was first introduced by Michael Porter (1985) in his competitive strategies analysis. According to Porter (1985), competitive advantage stems from the company's ability to create value for its buyers that will exceed the cost of its creation. Value is what buyers are willing to pay, and superior value stems from offering lower prices than competitors for similar benefits or unique benefits at a higher price.

According to Barney (1991), company has a competitive advantage when it is implementing a value creating strategy different from the strategies of its competitors. Peteraf (1993) defines competitive advantage as sustainable above-normal returns which can be achieved only if four prerequisites (resource heterogeneity, *ex post* limits to competition, imperfect mobility and *ex ante* limits to competition) are met. On the other hand, Grant (2002) believes that the company has a competitive advantage when it earns a higher level of profits than its competitors. Foss and Knudsen (2003) stress that the two main definitions of competitive advantage (Barney, 1991; Peteraf, 1993) are not related because a company can continuously implement a unique strategy based on the resource acquired in a competitive market and thus, according to Barney, possess a sustainable competitive advantage, however, at the same time, it can generate only an average, normal profit, which means that, according to Peteraf (1993), there is no sustainable competitive advantage. As a response to Foss and Knudsen's (2003) critique, Peteraf and Barney (2003) provide definition of competitive advantage that is consistent with those by Porter (1985), Barney (1991) and Peteraf (1993). According to Peteraf and Barney (2003), a company has competitive advantage when it is able to create greater economic value. Economic value is defined as the difference between the perceived benefits gained by the buyers and the economic cost to the company. There are multiple ways of achieving competitive advantage, which means that, to achieve it, a company does not have to be the best in all dimensions, but it must be superior in value creation (Peteraf and Barney, 2003).

2.2 Theoretical Perspective on Sustainable Competitiveness

In business, where financial measures have traditionally been the primary focus, a broadened range of performance indicators are being introduced to more fully represent

key success factors for an organization and employee satisfaction and innovation. As issues of performance measurement and issues of accountability become increasingly consequential in higher education, an understanding of the concerns motivating these changes within the private sector and the new measurement frameworks which are emerging can be extremely useful (Ruben, 1999).

The quality approach (Deming,1993; Juran,1995 & Ruben,1995) emphasizing external stakeholder focus, process effectiveness and efficiency, benchmarking, human resource management and integration and alignment among components of an organizational system, provided impetus for the use of a more comprehensive array of performance indicators. Many major corporations now couple financial indicators with other measures selected to reflect key elements of their mission, vision and strategic direction. The usefulness of these indicators extends beyond performance measurements, and contributes also to self assessment, strategic planning and the creation of focus and consensus on goals and direction within the organization.

One approach that addresses this need in a systematic way is the balanced scorecard concept developed by a study group composed of representatives from major corporations including American Standard, Bell South, Cray Research, Dupoint, General Electric and Hewlett-Packard

A Balanced Scorecard (Kaplan and Norton, 1996) translates an organization's mission and strategy into a comprehensive set of performance measures that provides a framework of strategic measurement and management system.

A Balanced Scorecard should translate a business unit's mission and strategy into tangible objectives and measures. The measures represent a balance between external

measures for shareholders and customers and internal measures of critical business processes, innovation and learning and growth. The measures are a balance between outcome measures- the result of past effort- and the measures that drive future performance. And the scorecard is a balance between objective, easily quantified outcome measures and subjective, somewhat judgmental performance (Kaplan and Norton, 1996).

They add on to say that organizations that adopt this approach report that they are able to use the approach to: clarify and gain consensus about vision and strategic direction; communicate and link strategic objectives and measures throughout the organization; align departmental and personal goals to the organizations vision and strategy; plan, set targets and align strategic initiatives; conduct periodic and systematic strategic reviews and obtain feedback to learn about and improve strategy.

It has also been reported by an executive of a company that has used this approach (Brancato, 1995) that:

> *"A balanced scorecard is an information-based management tool that translates our strategic objectives into a coherent set of performance measures starting with the vision and its critical success factors; performance measures to measure progress against those success factors; the target initiatives and the review process to ensure that this balanced business scorecard is the key management tool to run the business and finally how to tie in the incentives".*

Relevance of the Balanced Scorecard Theory

The Balanced scorecard is a relevant theory to this study because it a strategic evaluation tool that evaluates a firm's performance not only on financial basis but also on other organizational indicators such as: customer satisfaction; organizations learning and growth and internal business processes. These four performance indicators have then been used by Ruben (1999) to generate the "Excellent indicators in HE". They include:

Teaching and learning; research; outreach, workplace satisfaction and finance. These indicators have then been used as the Sustainable competitive constructs in this study.

2.3 Excellence Indicators in Higher Education

Organizations of all types are re-conceptualizing the excellence indicators they use and the uses to which these indicators are being put. For those in higher education, what is of significance is not so much the particulars of the balanced scorecard but the measurement process and its role in advancing organizational excellence for sustainable competitiveness.

In higher education, just like in business, there are time honored traditions relative to the measurement of excellence. Rather than emphasizing primarily on financial measures, higher education has historically emphasized academic measures. Motivated as in with business, by issues of external accountability and comparability, measurement in higher education has generally emphasized those academically- related variables that are most easily quantifiable. Familiar examples are student and faculty demographics, enrollment, Grade Point Average (GPA), scores and standardized test, class rank, acceptance rate, retention rate, faculty-student ratio, graduation rate, faculty teaching load, counts of faculty publication and grants and statistics on physical and library resources (Ruben, 1999).

As important as the traditional indicators are, these factors fail to present a comprehensive image of the current status of an institution. They do not reflect some of the key success factors of a college or a university, nor do they capture many of the university's mission, vision and strategic directions. In the area of instruction, many familiar measures such as student grade point average or standardized test capture "input"- the capabilities students bring with them to our institutions – but often not the

value colleges and universities ass through teaching and learning process nor the outputs or benefits derived from having attended the university (Ruben, 1999). Higher education assessment outcome studies (Austine, 1993) have contributed to the understanding of the teaching and learning processes, but resulting measurement framework have generally not been translated into indicators that are useful for monitoring, intervening in, or comparing institutional excellence (Johnston & Seymour, 1996).

Other variables that are less obviously liked to academic, less tangible, or less readily susceptible to quantitative analysis have been less a focus for measurement. Therefore dimensions such as relevance, need, accessibility, fulfillment of expectations, value added, appreciation of diversity, student satisfaction levels, impact and motivation for life -long learning are not widely used indicators for excellence (Ruben,1999).

This indicates that traditional assessment frameworks typically fail to consider many other indicators of present and potential excellence. In a study conducted for Educational Commission of the States on measures used in performance report in ten states (Ewell, 1994), the most common indicators include: Enrollment/ graduate rate by gender, ethnicity and program; degree completion and time to degree; persistence/ retention rate by grade, ethnicity and program; remediation activities and indicators of their effectiveness; transfer rate to and from two-and-four year institutions; pass rate on professional exams; job placement data on graduates and graduates satisfaction with their jobs; and the faculty workload and productivity in the form of student faculty ratio and instructional contact hours.

One area deserving greater attention is the student, faculty and staff expectations and satisfaction levels. In most colleges and universities little attention has been devoted to

systematically measuring expectations and satisfaction of students, and even less to faculty and staff within particular units or the institution as a whole, despite the widely shared view that attracting and also retaining and nurturing the best and the brightest people is a primary goal and critical success factor (Ruben, 1999).

To some degree, just as with business, higher education indicators tend to be primarily historical, limited in predictive powers, often incapable of alerting institutions to change in time to respond, and have not given adequate consideration to important but difficult-to-quantify dimensions. Ironically, the emphasize on easy-to-quantify, limited measures has, in a manner of speaking "come home to haunt" in the form of popularized college rating systems with which educators are generally frustrated and critical, but which are consistently used as the measures against which they are evaluated by their constituents (Wegner, 1997).

2.4 World University Rankings

The Shanghai and HEEACT rankings of world universities

In 2003, Shanghai Jiao Tong University began publishing an 'Academic Ranking of World Universities' (2008). It is now the best-known measure of universities' output and it puts weight on six indices, as follows: The number of alumni from the university who have won Nobel Prizes in physics, chemistry, medicine, or economics or Field Medals in mathematics (10% of the overall index); The number of faculty of the university who have won Nobel Prizes in physics, chemistry, medicine, or economics or Field Medals in mathematics (20% of the overall index); The annual number of articles authored by faculty of the university that are published in the journals Nature or Science (20% of the overall index); The annual number of articles authored by faculty of the university that

are in the Science Citation Index-expanded and Social Science Citation Index (20% of the overall index); The number of Highly Cited Researchers (copyright Thomson ISI, 2008) in the university's faculty in 21 broad subject categories (20% of the overall index); All of the above indicators divided by the number of full-time equivalent faculty (10% of the index).

Obviously the choice of criteria and the weights on them are quite arbitrary. They are also heavily weighted toward science. However, the arbitrariness is less problematic than it might seem because, in fact, the available measures that one could reasonably put into any index of university output are highly correlated. For instance, each of the components of the Shanghai index is highly correlated with each other component. Also, the Shanghai index has a correlation of 0.85 or higher with each of three other rankings that use very different methodologies: the HEEACT ranking (2009), the Times Higher Education – QS World University Ranking (2008), and the Webometrics Ranking of World Universities (2008).

The overall HEEACT ranking is so correlated with the Shanghai ranking that adding it to the analysis would not be instructive. However, HEEACT also publishes scores for universities by field: natural sciences, social sciences, and so on. Each university's score in each field is based on: The number of research publications in the relevant field in the last 11 years (10% weight) and the current year (10% weight); The number of citations to research publications in the relevant field in the last 11 years (20% weight) and last 2 years (10% weight); The number of highly cited papers in the last 11 years (15% weight), the number of articles in 'high-impact' journals in the current year (15% weight), and the H-index for the last 2 years (20% weight).

In short, it is not argued that either the Shanghai or HEEACT indices are correct (in the sense of having the right formulas) but they are based on criteria that are themselves reasonable measures of output and correlated with other reasonable measures of output. The Shanghai index assigns the world's highest ranked university the number 1 and so on down to number 100. After that, universities' rankings are indicated by a numerical range – '101 to 151', for example – of which we use the mean. Universities below 500 are not given a number.

2.5 A Balanced Scorecard for Universities

It is evident that the BSC (Balanced Scorecard) has been widely adopted in the business sector but the education sector has not embraced it (Karanthanos and Karanthanos, 2005). Cullen *et al,* 2003) proposed that BSC be used in educational institutions for reinforcement of the importance of managing rather than just monitoring performance.

The fundamental mission of research universities and their academic units and programs is the advancement of excellence in the creation, sharing and application of knowledge, typically described in terms of teaching, scholarships/ research and public service/ outreach (Ruben, 1999).

Fulfilling this mission requires a distinguished faculty, high level research activities, innovative and engaging teaching-learning processes, supporting technology and quality facilities, capable students, competent faculty and staff and legislative and public support. Stewart and Carpenter- Hubin (2001) and indicates that although historically less well appreciated, universities also requires excellence in communication and a service oriented culture, appropriate visibility and prominence within the state and beyond; and a welcoming physical environment; a friendly, supportive and respectful social

environment; expectations of success; responsive, integrated, accessible and effective systems and services; and a sense of community.

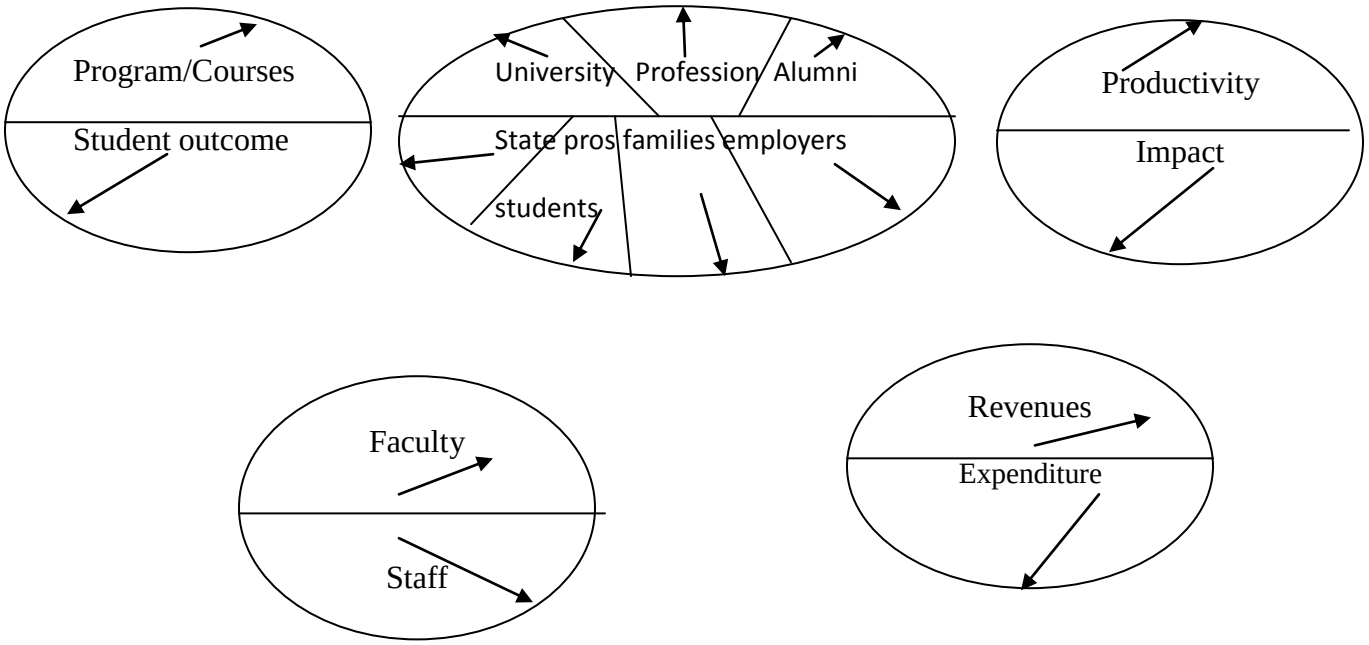
Most specifically, fulfillment of this mission requires successful engagement with a number of constituency groups, and for which desired and potentially measureable outcomes can be identified: prospective students- who are applying to a university/program as a preferred choice, informed about the qualities and benefits they can realize through attending; current students who are attending their university/program of choice with well defined expectation and high levels of satisfaction relative to all facets of their experience, feeling they are valued members of their university community with the potential and support to succeed. The research contract agencies and other organizations or individuals seeking new knowledge or the solutions to problems are another constituency whose desired outcome is to actively seek out the university and its scholars for assistance. Friends - who are proud to have a family member attending the university/program, supportive of the institution, recommending it to friends' and acquaintances; Alumni- who are actively supporting the university/program and its initiatives; Employers- seeking out university/program graduates as employees, promoting the university/program among their employees for continuing education; Colleagues at other institutions- viewing the university/unit as a source of intellectual and professional leadership and a desirable workplace; Governing boards- supportive of the institution and enthusiastic about the opportunity to contribute personally and professionally to its advancement; local community-viewing the institution as an asset to the community, actively supporting its development (Ruben, 199).

Another constituency includes the friends, interested individuals, donors, legislators and the general public-their desired outcome is valuing the university as an essential resource, supporting efforts to further advance excellence; faculty-pleased to serve on the faculty of a leading, well-supported institution/program, enjoying respect locally, nationally and internationally and lastly staff-regarding the institution/unit as a preferred workplace where innovation, continuing improvement and teamwork are valued, recommending the institution/unit to others (Umashankar and Dutta, 2007).

2.6 Constructs of Sustainable Competitiveness

The constructs of sustainable competitiveness in this study have been derived from the higher education dashboard indicators as explained by (Ruben, 1991). According to him a university's mission, vision and goals may be translated into "dashboard indicators" with five indicator clusters, each composed of variety of constituent measures. The five indicator areas include: teaching/learning, scholarship/research, service/outreach, workplace and financial (Altabach, 2005); Karantahanos and Karanthanos, 2005.

TEACHING/LEARNING SERVICE/OUTREACH SCHOLARSHIP/ RESEARCH



WORKPLACE SATISFACTION FINANCIAL

Fig 2.1 : Higher Education Dashboard Indicators (Ruben,1999)

2.6.1 Teaching/Learning

In the proposed framework, instruction is composed of quality assessments in two primary areas: program/courses and student outcomes. The model points to the value of incorporating multiple dimensions, multiple perspective and multiple measures in evaluating the quality of programs/courses and student outcomes. Appropriate to these assessments are systematic inputs from peers/colleagues (at one's own and perhaps other institutions), students (at various points in their academic careers), alumni (providing retrospective analyses), employers and or graduate directors (providing data on workplace and graduate/professional school preparation).

Each group can contribute pertinent and useful insights and collectively, these judgments yield a comprehensive and balanced cluster of measures that help to address concerns

associated with a reliance of any single perspective of measures (Williams & Coci, 1997; Trout, 1997). Colleagues from one's own or another institution for example can provide useful assessment of the instructor qualifications and the scope, comprehensiveness, rigor and currency of programs/course content etc. students and alumni can provide valuable assessment of the clarity of course/program expectations, curricular integration, perceived applicability and instructor delivery skills, enthusiasm, interest in students, accessibility and other dimensions.

Examples of assessment dimensions that can be included in these indicators are listed in Table 2.1. For example, disciplinary standing is derived from external review, accreditation or other peer review systems; need can be assessed by a consideration of such factors such as unfulfilled demand for a program/course offerings at other institutions and systematic input from employers or alumni; coherence measures internal curricular linkage and integration; rigor- includes data on assignment standards and grading practices with student and alumni input; efficiency includes cost-student enrollment ratios, student/faculty instruction ratio; qualification of instructors, course content, and delivery assessments can be based on peer, professional review and other inputs (Braskamp & ory, 1994). Adequacy of support services can be evaluated through surveys of students, faculty and staff assessment.

Table 2.1Higher Education Dashboard Indicators and their Measurements

INSTRUCTION	PUBLIC SERVICE/ OUTREACH	SCHOLARSHIP
Programs/Courses		Productivity
-Mission clarity	-prospective students	-presentations
-Disciplinary standing	-university	-performance
-Need	-profession/discipline	-submissions
-Coherence	-research agencies	-publications
-Rigor	-alumni	-funding proposals
-Efficiency	-families	
-Instructor qualification	-state	Impact
-Currency/comprehensive-ness of course materials	-Employers	-publication stature
	-community	-citation
-Adequacy of support services	-governing boards	-awards/recognition
	-public at large	-editorial roles
-Teaching/learning climate		-peer assessments
	Measures	-funding
Student outcomes	-Activity level/contacts	
-Preferences	-selection for leadership roles	
-Selectivity	-reputation	
-Involvement	-meeting perceived needs	
-Learning outcomes	-satisfaction levels	
-Satisfaction	-contributions/funding	
-Retention	-preferences	
-Preparedness		
-Placement		
-life-long learning		

WORKPLACE SATISFACTION	FINANCIAL
Faculty/Staff	Revenue
-Attractions	-funding levels
-Turnover	-endowments
-compensation	
-climate	Expenditures
-Morale	-operating expenses
-Satisfaction	-debt services
	-credit ratios
	-deferred maintenance

Student Outcomes

Student outcome could include measures of program/ course preferences, selectivity, involvement, learning outcomes (knowledge and competency acquisition), fulfillment of expectations, satisfaction, retention, preparedness, placement and motivation for life-long

learning, and other variables that may be appropriate to the mission, vision and or goals of the institution/program. Program preference measures for instance would document questions such as "was this program/course my preferred choice?" Sensitivity would reflect "input" measures of the quality of students enrolled in courses/programs and learning outcomes would measure cognitive and behavioral competencies. In addition to content learning, assessment might also include the ability to engage in collaborative problem solving, appreciation of diversity, leadership skills interpersonal and presentational communication skills, ethical thinking and other capabilities appropriate to the mission, vision and goals of the institution/program (Karanthanos and Karanthanos, 2005; Ruben, 1999).

Survey and focus groups with student and alumni groups would provide the basis for evaluating and overtime tracking of satisfaction with academic programs, support services, facilities etc. for example, the alumni could be asked years after graduation, whether they would choose the same university/program were they to be enrolled today. Preparedness for careers or further graduate study could be assessed through input from graduates, employers and graduate program directors. Placement could be directed through systematic alumni tracking (Stewart and Carpenter-Hubin, 2001).

2.6.2. Scholarship/ Research

Research and scholarship are composed assessments of quality in areas of productivity and impact. In areas of research and scholarship, colleges and universities generally have well developed measures of achievement. The productivity indicators include activity level. Depending upon the field, activity level could encompass frequency of presentations, performances, articles and papers submissions, publications and funding proposals. Impact measures for research and scholarship include publication rate,

selectivity and stature of journals or publishers, citations, awards and scholarly excellence, funding of research (Carnegie Foundation,1994; Braskamp & Ory 1994).

2.6.3. Public Service/Outreach

The public service and outreach indicator cluster would be composed of measures of the extent to which the university, unit or program addresses the needs and expectations of key external stakeholder groups. This cluster should include measures of each of the stakeholders groups whose assessments of the quality and performance of the institution/ program have important implications for the unit in terms of mission fulfillment, reputation, recruitment, economic viability etc (Stewart and Capenter-Hubin, 2001).

The key definition of key stakeholder groups depends on the nature of the institution or unit and its mission. Generally, for academic units the list of potential candidate groups would include: the university (beyond the unit itself), profession/discipline, alumni, potential students, organizations/individuals seeking new knowledge, family members/ parents of student, employers, community, state, region, governing boards, friends of the institutions, donors, legislators and the public at large (Ruben, 1999).

The measure of each stakeholder should capture the quality of contribution of the unit based on criteria of significance to the external group and reflecting their perspective. Some of the general measures that are appropriate for a number of these stakeholder groups are: activity level, selection of leadership roles, reputation, meeting perceived needs and satisfaction level. For example, the university (beyond the particular unit) measures include promotion and tenure rates, requests to serve on thesis and dissertation committees in other programs and invitation to serve on and play leadership roles in key committees and projects, in addition to other general measures of engagement and perceived contribution to university life (Umashankar and Dutta, 2007).

In the case of potential employers, the measures would include: preference for university graduates as employees, likelihood of promoting the university among their employees for continuing education. In the case of organization or individuals seeking new knowledge or solution to problems, the number of contacts, request for information, proposal requested and initiatives funded would be among the measures. For alumni, key financial and moral support of the university and its initiatives would form the measures and the extent to which the university is perceived to an essential state resource would be an important indicator of public support. For parents and families, areas of interest would include: attitude towards having a family member attending the university, likelihood of recommending the institution to friends and acquaintances.

While institution data may be available as input in some instances, focus groups, survey programs and other systematic approaches to capturing the perspectives of these groups are required (Altabach, 2005).

2.6.4. Workplace Satisfaction (Faculty and Staff)

In addition to indicators associated with instruction, scholarship and service/outreach, another important indicator is workplace satisfaction for faculty and staff. Input indicators for each group measures attractiveness of the institution as a workplace climate, and faculty and staff morale and satisfaction. Measures in this category will include a combination of institutional data (analysis of application and retention data) is also perceptual data from faculty/staff groups and information derived from sources such as exit interviews, focus groups and surveys (Umashankar & Dutta, 2007; Karanthanos & karanthanos, 2005; Pursglove and Simpson, 2000).

2.6.5. Financial

The financial indicators include revenues by source such as state appropriations, tuition, donations, endowments, grants etc., and the expenditure for example, operating budgets, debt service, credit rations and ratios, deferred maintenance and expenditures for the university/ unit. The specifics appropriate to this indicator would vary substantially depending on the level and type of unit involved (Altabach, 2005).

2.7 Sustainable Competitiveness between Private and Public Universities

University education has become more competitive as a result of increasing private sector participation, growing demand for accountability, limited public funding for tertiary education, and the advent of borderless tertiary education. Competition in the developed world is forcing some institutions to seek new markets in developing countries. Some have established satellite campuses, or are partnering with local institutions in developing countries to offer their degree programs in areas that have ready markets, for example, business management and information technology. In view of the perceived greater recognition and marketability of foreign degrees, and the certainty of completing the degree within a prescribed period of time without the fear of interruption due to student crises, these ‘name brand degrees’ are becoming increasingly popular, posing a rising challenge for local universities in some countries. (Materu, 2007)

Materu (2007) continues to state that sustainable competitiveness within institutions of higher learning should take place throughout the teaching and learning process. Which includes; screening of candidates for admission, staff recruitment and promotion procedures, curriculum reviews, teaching and learning facilities, quality of research, policy development and management mechanisms, student evaluation of staff, external

examiners for end-of-semester or end-of-year examinations, tracer studies, academic reviews and audits.

According to (Blustain et al,1999) as quoted by Lidong (2007) public universities strategies to gain competitive advantage include reputation of the institution, curriculum and educational standards, cost, location and student activities. Other sources of sustainable competitiveness for public higher education they say include easy access, partnership with corporations, customized curriculum, flexible delivery and use of technology.

One of the sustainable competitive indicators is workplace satisfaction and according to Bunoti (2011) the remuneration of the teaching and non teaching staff at public universities is far below the living wage. Given the cost of living, the academic staff take up extra hours of teaching load, teach at other private universities, or engage in other money making activities to "make ends meet" at the expense of the quality of the service they ought to offer. Poor remuneration results in brain drain, which is the international migration of skilled human capacity which is common and a symptom of deeper problems in Africa and developing countries in general. (Dzvimbo 2006)

Bunoti (2011) also states that there is no staff performance appraisal at the public universities apart from when one obtains higher qualifications and that the process of promotion takes time, which demoralizes them. She goes on to say that although the academic staff are proud to be part of such a high caliber profession, they lack the morale and job satisfaction to perform effectively. Both private and public Universities in Kenya have neglected faculty development (Odhiambo, 2005) and this is going to limit their growth in the years to come. Apart from faculty development, the management capacity

of both private and public Universities has been very weak and that will also limit their growth.

According to (Gudo *et al*, 2011) lecturers in private universities were better motivated that those in public universities. Kiganda (2009) noted that low level of staff motivation was mainly due to inadequate remuneration which costs universities the loss of outstanding brains and skills that have migrated abroad. The remaining staff has been forced into income generating activities to supplement their dwindling earnings. It further noted that inadequate remuneration has often been the cause of staff strikes. Thus, inadequate staff remuneration and attendant low morale have negatively affected quality of education in universities. In a study by Olayo (2005) as quoted by Gudo *et al* (2011) among selected universities in Kenya, it was found that inadequate availability of resources de-motivated employees and did not enhance work performance. This is because possession of skills without adequate relevant tools of trade does not enhance efficiency. To attract and retain quality faculty (Odhiambo, 2005), besides a competitive international salary, they need good facilities: library, offices, health care, computers, and full internet connectivity.

Olayo (2005) further found out that employees were de-motivated by inadequate training opportunities for capacity building. Ndegwa (2007) as quoted by Gudo *et al* (2011) also found out that public universities did not prioritize staff training. Capacity building in an organization is vital in enhancing efficiency. This is so because of the changing nature of technology and management styles.

Another indicator of sustainable competitiveness is continuous research and publications. According to Mamdani (2007) a renowned educationalist, the "publish or perish" philosophy reduces the quality of instruction at higher education; academicians spend

time doing research and not teaching. Mamdani contradicts the view that continuous research by the university adds to a university being sustainably competitive. Gudo *et al* (2011) states that, in addition to offering teaching services at under-graduate and post-graduate levels, a public university departments engaged in research and publication. However (Gudo *et al*, 2011), 90 per cent of the teaching staff interviewed reported that most of the research projects they engaged in were not university projects but their private undertakings with external funding. One senior academic staff summarized the situation as follows:

> *"Research seems not to be a priority in our public universities. You are one of the teaching staff, just tell me how much money do these universities allocate for any kind of research? If one waits for funds from these institutions, no research can be done"(Gudo et al,2011).*

Bunoti (2007) indicates that a number of researches are done by both lecturers and students in public universities but no publications made. "NGOrisation" of research where NGOs come with specific themes and topics is another factor affecting research. Because of poverty, researchers jump on the band wagon regardless of their areas of specialization which undermines the quality of research output.

The third indicator of sustainable competitiveness is marketability of programs and effective teaching. Odhiambo (2005) noted that the Government sponsors over 10,000 new students per year who are admitted into the public Universities, many of the students do not pursue professional degree programs that the labor market (and private sector) actually needs. Most of the degree programs in the public Universities were established without a clear market analysis or regard to the needs of the country of the private and/or public sectors of the economy. In contrast private Universities can only offer degree programs that prepare graduates for careers and are therefore employable. The private

universities (Odhiambo, 2005) do not rely on any published market data but instead rely on feedback from students and local companies and organizations. Similarly, public Universities that have been increasing the number of privately sponsored students have discovered that some of the degree programs are not in high demand by the students. Enrollment data in private and public Universities suggests that professional degree programs in medicine, law, IT, and business are in very high demand.

Gudo, *et al*,(2011) asserts that Public universities still stick to traditional courses. The inability of those courses to address the demands of the labour market, make the universities less competitive as compared to the few private universities we have. This, together with the constant university closures have led to some students seeking admission to private universities. It has also been reported that about ten to fifteen per cent of those who qualify for public university admissions do not take their place.

The fourth indicator of sustainable competitiveness is finance. Public Universities are financed by the Government (Gudo et al, 2011; Odhiambo, 2005). The Government therefore provided all the funding for both development (classrooms, labs, libraries) as well as recurrent expenditures (mostly staff salaries). In addition, the Government also sponsored or subsidized the tuition fees of most of the students.

Although the percentage of the University expenditure continued to increase, all of the public Universities remained in debt with incomplete expansion capital projects started in the late 1980s. In addition, there is pressure to increase the faculty salaries from the University staff union. Public Universities therefore increasingly depend on tuition revenue of privately sponsored students. It explains why 45% of the public university students are privately sponsored. The additional revenue is being used to pay salaries,

invest and maintain the ICT infrastructure and even to finalize incomplete building projects started in the late 1980s (Odhiambo, 2005).

Private Universities on the other hand, attract research funds from foundations or from IFC. This increases the Universities shift from being predominantly teaching Universities to applied research Universities (Odhiambo, 2005). Private Universities have been very aggressive in fund-raising to make sure that there would be no need to increase the tuition fees. In fact, most private Universities have a position of deputy vice-chancellor in charge of institutional development. The fund-raising is for infrastructure development and other capital expenditure. Consequently, the pressure to increase tuition fees has been somewhat reduced (Odhiambo, 2005).

All public universities were required by the Ministry of Education (MOE), through the then Commission for Higher Education (CHE), now Commission of University education (CUE) to prepare comprehensive financial plans, indicating net assets, sources of revenue, expenditure and how they intended to service their debts. Each individual institution was to prepare a three-year financial plan using the format given by CUE (Gudo, *et a*l, 2011).

Gudo *et al* (2011) study indicated that the financial state of the public universities was unstable. The universities have, since inception, depended heavily on government funding for both recurrent and development expenditures. This source alone constituted more than 95% of the average university budget. The government has continued making reductions in the university budget. To avert a financial crisis at the universities, the government has entrusted the Commission for University Education to facilitate and co-ordinate financial management at these universities.

Although the Public universities had been relying heavily on government funding, there had been attempts to raise additional funds internally through income-generating projects. International donor agencies like the Ford Foundation, UNESCO, the British ODA, JICA, CIDA and SIDA have played an important role in supporting the universities; especially in respect of research and some specific faculty-based projects. Local private sector financial support for the universities was negligible despite the fact that the private sector was a major beneficiary of the universities' products (Gudo, *et al*, 2011).

The public universities were under pressure to look for alternative sources of finance and be vigilant in managing their resources. In order to balance their operational budget, the universities had embarked on cost-reduction and cost-control measures. For example, tuition fees were adjusted upwards. The issue and modalities of staff retrenchment were being worked out to reduce staffing levels and, thereby, reduce current expenditures. There was a strong commitment from the universities management to introduce viable and sustainable income -generating activities. For example, Kenyatta University started a Bureau of Consultancy and Training and a Computer Centre which offered professional courses. The projects proved viable and favorable because the university did not need to invest heavily in extra resources and equipment. The universities were also negotiating for a strong partnership with the local private sector to persuade them to support the universities in achieving their missions (Gudo *et al*, 2011).

2.8 Resource Characteristics

2.8.1 Resource Value

The value of resources lies in their ability to neutralize threats and enable company to exploit opportunities that arise in a business environment, i.e. resources are valuable if

they enable a company to design and implement strategies that improve its efficiency and effectiveness. It is important to emphasize that the value of resources has to be estimated in the context of corporate strategy and the specific environment in which the company operates (Talaja, 2012).

A resource must enable a firm to employ a value-creating strategy, by either outperforming its competitors or reduce its own weaknesses Barney, 1991;Amit & Schoemaker, 1993). Relevant in this perspective is that the transaction costs associated with the investment in the resource cannot be higher than the discounted future rents that flow out of the value-creating strategy (Mahoney & Prahalad, 1992; Conner,1992,).

Barney (1991) uses the term "valuable" to reflect the fact that a resource should desirably enhance the firm's effectiveness and efficiency. Given the ambiguity in using the term "valuable", (Barney, 2001) refers to it as revenue enhancement or cost reduction potential. Revenue/cost reduction potential refers to how, everything else equal, a resource will be beneficial if it allows the firm to offer more attractive products- thereby increasing its revenue- or to operate more efficiently- thereby decreasing its cost. Related statements emphasize the importance of the resource being potentially in demand (Collis & Montgomery, 1997); at least somewhat durable (Amit & Schoemaker, 1993); and able to generate heterogeneity relative to rivals (Peteraf, 1993). The capacity of a resource to generate higher revenues and/ or lower costs is enhanced if the resource is fungible so that it can be shared amongst multiple activities (prahalad & Hamel, 1990; Montgomery, 1992)- a point of particular importance when it comes to international or product-market diversification (Buckley & Casson, 1976; Teece, 1980).

If a company fails to exploit valuable resources, it will have the competitive disadvantage. If the resource that a company possesses is not valuable, then it will not allow the company to choose and implement strategies that exploit opportunities and neutralize threats from the environment. Such resources are considered as weaknesses (Talaja, 2012).

Resource Value in Public and Private Universities

One of the resource values of universities is the approachability of lecturers. Bunoti (2011) reports that lecturers in public universities have limited opportunity for consultation; students meet lecturers only during lecturer time and therefore cannot obtain guidance and counseling or other forms of support, but appreciate that the lecturer: student ratio is high. She also found out that in public universities many lecturers are not highly qualified; very few hold PhDs, apart from those at top management level. Bunoti (2011) also found out that there was unprofessional behavior among lecturers and other staff resulting in rudeness and use of threatening abuse of students. She also concluded that in public universities, some lecturers do not prepare notes; instead they download articles and assign text book chapters for students to make copies, which is very costly.

Student enrollment in Private universities is generally relatively small in size and also the scope of the programmes, which are mainly in business and information and technology. The private universities have also found that apart from a small proportion of mature working adults, the majority of students who enroll in their institutions are self-funded high school leavers (ed. Nhundu and Moanakwena, 2008). At the public universities, student application and enrollment has become overwhelming, which have forced many of them to admit students beyond their intake capacity. (Buzindadde 2000)

Another indicator of resource value is support from the university's alumni. Most of the public Universities in Kenya do not yet have a strong and deep alumni network with active associations. Private Universities attempt to track their students but they have not yet been successful in fund-raising from the alumni. In most cases, the database of past students is not current and this is a challenge (Odhiambo, 2005).

The University of Nairobi; an example of a public university, the largest and oldest university in Kenya launched an alumni association in 2005 and it is expected that in the future it will use it to raise funds for different capital projects or bursary schemes. On the other hand, Strathmore University a (private university) has had a history of maintaining current databases of their alumni. In 2005, the Strathmore University Alumni Association was formally launched. In the future, it is expected that the association will endow academic chairs, provide scholarships or help the University in different capital development projects (Odhiambo, 2005).

Some Private Universities have established scholarship endowment funds sponsored by the alumni and other well wishers as a way of increasing the number of scholarships available to needy students. For example, Strathmore University has established a Scholarship Endowment Fund using a grant from the European Union (Odhiambo, 2005). In order to harness international support from alumni and friends, the Strathmore University has established the Strathmore University Foundation, an organization incorporated in the US to serve as a fund-raising vehicle, as well as facilitating connections for Strathmore with leading institutions in the US.

The university's image is also an indicator of resource value. University image can be defined as the sum of all the beliefs an individual has towards the university (Landrum et al. 1998; Arpan et al. 2003).

2.8.2 Resource Rarity

Resource rareness implies that competitors do not have access to the particular resource, or that they have only limited access. Valuable resources that are not rare cannot be the sources of the competitive advantage (Talaja, 2012). A firm must ideally have dominant access to the resource in order to capitalize on its resource/cost potential. To be of value, a resource must be rare by definition. In a perfectly competitive strategic factor market for a resource, the price of the resource will be a reflection of the expected discounted future above-average returns (Barney, 1986a; Dierickx & Cool, 1989; Barney,1991).

Absent rareness, nearly instantaneous adjustment by competitors with the same will be possible, negating any durable revenue/cost advantage. Therefore, a resource should be rare (Barney, 1991), or equivalently scarce (Amit & Schoemaker, 1993; Collis and Montgomery, 1997). Wenerfelt (1984) and peteraf (1993) highlighted the importance of "uncommon resource positions" whereby a firm starts with overwhelming control over the resource supply, thus preventing most rivals from accumulating them in similar quantities. Valuable resources that are not rare are not irrelevant to a company. These resources ensure the survival of the company and enable it to achieve competitive parity in the industry in which it operates (Talaja, 2012).

The degree to which a valuable firm resource should be rare in order to have the potential for generating competitive advantage is difficult to establish. It is though not difficult to see that if a firm's valuable resources are absolutely unique among a set of competing and potentially competing firms, those resources will generate a sustained competitive advantage. However, it may be possible for a small number of firms in an industry to possess a particular valuable resource and still generate a competitive advantage. In general, as long as the number of firms that possess a particular valuable resource is less

than the number of firms needed to generate perfect competition dynamics in an industry (Hirshleifer, 1980) that resource has the potential of generating a competitive advantage.

It is stressed that the value and rarity of resources are necessary conditions for achieving competitive advantage. However, for achieving sustainable competitive advantage, resources also have to be imperfectly imitable and not substitutable. Foss and Knudsen (2003) reflect on Barney's classification of VRIN conditions, and state that there are the only two necessary conditions for achieving sustainable competitive advantage: uncertainty and immobility.

Resource Rarity in Private and Public Universities

Uniqueness of facilities such as libraries, lecture hall; programs and other resources are the main indicators of resource rarity. According to Bunoti (2011), the number of students admitted in public universities is not proportionate to the facilities available. Consequently (Gudo, et al, 2011) they experience overstretched facilities due unplanned student admissions by the management. The public demand for education and the government's response affected the progress made in increasing enrolment in public universities Libraries for example are not modern; they are too small for the number of students and not well stocked, a majority of the books being out-of-date. The students' compete for space in the libraries and often forego meals especially during the peak period of assignments and examinations (Bunoti,2011; Gudo *et al*, 2011).

Lecture halls are in public universities are also said to be too small for the number of students and have insufficient seats. Students lose time by transferring seats from one room to another and occasionally attend lectures standing up with an overflow on the verandas. In addition, the lecture rooms are not sound proof; therefore lecturers are

interrupted by heavy rain, Guild campaigns and mowers. Quite often lecturers are put off because of unbearable noise (Bunoti,2011).

The lecturer: student ratio at the public universities (Bunoti, 2011) is overwhelming. While some lecturers are doing their best with limited resources, are knowledgeable and have a good relationship with students, many exhibit tendencies of absenteeism, sluggishness, inability to give valuable time, and lack of concern for students' challenges.

In relation to programs offered by public universities, commercialization of higher education has lead to fragmentation of courses leading to very early specialization yet students get attracted to courses by name and not content. For instance, at undergraduate level Psychology has been fragmented into guidance and counseling, community psychology, organizational psychology, while the Bachelor of commerce has been fragmented into accounting and finance, procurement and logistics, business studies, international business, business administration, banking, and entrepreneurship.

In relation to uniqueness of programs, Kasozi (2006) argues that the majority of the over 1800 programmes offered at public universities are theoretical and irrelevant to the job market. Mamdani (2007), in his book *Scholars in the Marketplace*, accused universities of duplicating courses for the sake of generating revenue from private students.

According to Odhiambo (2005), private University face difficulties in introducing new programs. Even when they either have an interim letter of authority or charter, they still need to get approval to introduce new programs. This is a good peer-reviewed quality assurance process but unfortunately is relatively slower than it could be due to the lack of expert reviewers willing to work with CHE now CUE. In contrast, public Universities can launch new degree programs in less than 6 months. In addition, it is possible for public Universities to enter into partnership agreements with private colleges to offer their degrees.

Apart from introduction of new programs, the program implementation is also an indicator of resource rarity. The implementation of programmes in public universities has suffered from a lot of confusion. This was due to the increase of government control over public universities and the constant closures of universities due to student riots and staff strikes. For example, in the 1994/95 academic year, teaching staff in public universities were on strike for ten months. Over time, the quality of public university education has become questionable. Frequent closures have meant longer periods to complete programmes or reduction of course content, that is, courses were either not completed or were rushed (Gudo *et al*, 2011).

2.7.3Resource Inimitability

If a valuable resource is controlled by only one firm it could be a source of a competitive advantage (Barney, 1991). This advantage could be sustainable if competitors are not able to duplicate this strategic asset perfectly (Peteraf, 1993; Barney, 1986b,). A central proposition in strategy is that firms sustain relative performance advantages only if their existing and potential rivals cannot imitate them (Nelson and Winter 1982, Dierickx and Cool 1989, Barney, 1991).

Imitation means the purposeful endeavor to improve performance by copying the form and strategy of a superior rival. An imitation strategy is one of many ways two firms may become similar in appearance and performance (Ryall, 2009). Imitation fails when either, it is physically impossible, legally prevented, economically unattractive, or the necessary knowledge is lacking.

Saloner et al. (2001) label barriers of the first three types “positional” and those of the last “capabilities based.” The conditions leading to positional barriers e.g., switching costs, entry costs, scope and scale economies, and the likelihood of ex post retaliation

(Porter 1980, Tirole 1988). Capabilities-based barriers is when imitation is hampered by a lack of knowledge, learning becomes a central issue. Capabilities-based advantage is sustained only if learning of both types that is, explorative learning in the active sense of learning from one's own experience (learning by doing), or absorptive in the passive sense of learning from external information.

Firms can only be imperfectly inimitable for one or a combination of three reasons: (a) the ability of a firm to obtain a resource is dependent upon unique historical conditions; (b) the link between the resources possessed by a firm and a firm's competitive advantage is casually ambiguous or (c) the resource generating a firms advantage is socially complex (Dierickx and Cool, 1989).

2.7.3.1 Unique Historical Conditions and Inimitable Resources

The RBV approach to competitiveness asserts that not only are firms intrinsically historical and social entities, but that their ability to acquire and exploit some resource depends upon their place in time and space. Once this unique time in history passes, firms that do not have space-and-time dependent resources cannot obtain them and thus these resources are imperfectly imitable (Barney, 1991).

Resource-based theories are not alone in recognizing the importance of history as a determinant of firm performance and competitive advantage. Traditional strategy researchers (e.g. Ansoff, 1965 and Learned *et al*., 1969) often cited the unique historical circumstances of a firm's founding, or the unique circumstances under which a new management team takes over a firm, as important determinants of a firm's long term performance. Economists (e.g. Arthur *et al*, 1987; David, 1985) also developed models of firm performance that rely heavily on unique historical events as determinants of

subsequent actions. Employing path-dependent models of economic performance, Arthur *et al*. (1987) suggests that performance of a firm does not depend simply on the industry structure within which a firm finds itself at a particular point in time, but also on the path a firm followed through history to arrive where it is. If a firm obtains valuable and rare resources because of its unique path through history, it will be able to exploit those resources in implementing value-creating strategies that cannot be duplicated by other firms, for firms without that particular path through history cannot obtain the resources necessary to implement the strategy.

The acquisition of firm resources depends on the unique historical position of a firm. A firm that locates its facilities on what turns out to be much more valuable location than was anticipated when the location was chosen possesses an imperfectly imitable physical capital resource (Hirshleifer, 1988). A firm, for example with scientists who are uniquely positioned to create or exploit a significant scientific breakthrough may obtain an imperfectly imitable resource from the history-dependent nature of these scientists' individual capital (Burgelman and Maidique, 1988; Winter, 1988). Finally a firm with a unique and valuable organizational culture that emerged in the early stages of the firm's history may have an imperfectly imitable advantage over a firm founded in another historical period, where different (and perhaps less valuable) organizational values and beliefs come to dominate (Barney, 1989b).

2.7.3.2 Causal Ambiguity and Inimitable Resources

The term "causal ambiguity" in its traditional usage refers to any knowledge-based impediment to imitation (Saloner et al. 2001,). The first strategy paper using this term appears to be Lippman and Rumelt (1982), who assert, "basic ambiguity concerning the

nature of the causal connections between actions and results" can result in persistent performance heterogeneity because "the factors responsible for performance differentials resist precise identification."

"causal ambiguity" is as broadly defined as "the state in which managers do not know how their actions map to consequences," the statement "managers experience causal ambiguity" is indistinguishable from "managers don't know what they're doing," in which case a bias toward plain language should favor the latter. Lippman and Rumelt (1982), state that a particular type of confusion can arise in the context of competitive imitation that is both "causal" and "ambiguous" in a precise sense of both words.

Causal ambiguity is the continuum that describes the degree to which decision makers understand the relationship between organizational inputs and outputs (King 2007). Their argument is that inability of competitors to understand what causes the superior performance of another (inter-firm causal ambiguity), helps to reach a sustainable competitive advantage for the one who is presently performing at a superior level. Holley and Greenley (2005) state that social context of certain resource conditions act as an element to create isolating mechanisms and they quote Wernerfelt (1986) that tacitness (accumulated skill-based resources acquired through learning by doing) complexity (large number of inter-related resources being used) and specificity (dedication of certain resources to specific activities) and ultimately, these three characteristics will result in a competitive barrier.

Isolating mechanism is a term that was introduced by Rumelt (1984) to explain why firms might not be able to imitate a resource to the degree that they are able to compete with the firm having the valuable resource (Peteraf, 1993; Mahoney and Pandian, 1992,). An important underlying factor of inimitability is causal ambiguity, which occurs if the

source from which a firm's competitive advantage stems is unknown (Peteraf, 1993; Lippman and Rumelt, 1982). If the resource in question is knowledge-based or socially complex, causal ambiguity is more likely to occur as these types of resources are more likely to be idiosyncratic to the firm in which it resides (Peteraf, 1993; Mahoney and Pandian, 1992,). Conner and Prahalad (1996) go so far as to say knowledge-based resources are "*…the essence of the resource-based perspective*"

Certain resources, even if imitated, may not bring the same impact, since the maximum impact is achieved over longer periods of time. Hence, such imitation will not be successful. In consideration of the reputation as a resource and whether a late entrant may exploit any opportunity for a competitive advantage, Kim and Park (2006) mention three reasons why new entrants may be outperformed by earlier entrants. First, early entrants have a technological know-how which helps them to perform at a superior level. Secondly, early entrants have developed capabilities with time that enhance their strength to out-perform late entrants. Thirdly, switching costs incurred to customers, if they decide to migrate, will help early entrants to dominate the market, evading the late entrants' opportunity to capture market share. Customer awareness and loyalty is another rational benefit early entrants enjoy (Agarwal *et al*. 2003).

However, first mover advantage is active in evolutionary technological transitions, which are technological innovations based on previous developments (Kim and Park 2006; Cottam *et al.*, 2001). The same authors further argue that revolutionary technological changes (changes that significantly disturb the existing technology) will eliminate the advantage of early entrants. Such writings elaborate that though early entrants enjoy certain resources by virtue of the forgone time periods in the markets, rapidly changing

technological environments may make those resources obsolete and curtail the firm's dominance. Late entrants may comply with the technological innovativeness and increased pressure of competition, seeking a competitive advantage by making the existing competencies and resources of early entrants invalid or outdated. In other words, innovative technological implications will significantly change the landscape of the industry and the market, making early movers' advantage minimal. However, in a market where technology does not play a dynamic role, early mover advantage may prevail.

2.7.3.3 Social Complexity and Inimitable Resource

Another reason that a firm's resources may be imperfectly imitable is the existence of very complex social phenomena, beyond the ability of firms to systematically manage and influence. When competitive advantages are based on such a phenomena, the ability of other firms to imitate these resources is significantly constrained (Barney, 1991).

A wide variety of firm resources may be socially complex for example interpersonal relations among managers in a firm (Hambrick, 1987), a firms culture (Barney, 1986b), a firm reputation among suppliers (Porter, 1980) and customers (Klein & Lefler, 1981). It is also to specify how these socially complex resources add value to a firm. Therefore, there is little or no casual ambiguity surrounding the link between these firm resources and competitive advantage. However, organizational culture for example those with certain attributes or quality relations among managers can improve a firm's efficiency and effectiveness does not necessarily imply that firms without these attributes can engage in systematic effort to create them (Dierickx & Cool, 1989).

Physical technology is though not included in this category of sources of imperfect inimitability. Physical technology for example machine tools or robots in factories

(Hayes and Wheelwright, 1984) or complex information management systems (Howell and Fleishman, 1982), is by itself typically imitable. If one firm can purchase these physical tools of production and thereby implement some strategies, then other firms should not be a source of sustained competitive advantage.

It is only the exploitation of the physical technology in a firm with the use of socially complex firm that can make the resource imperfectly imitable. Several firms may all possess that same physical technology, but only one of these firms may possess the social relations, culture, traditions to fully exploit this technology in implementing strategies (Wilkins, 1989). If these complex social resources are not subject to imitation (and assuming they are valuable and rare and no substitute exists), these firms may obtain a sustained competitive advantage from exploring the physical technology more completely that other firms, even though competing firms do not vary in terms of the physical technology they possess.

Resource Inimitability in private and Public Universities

Organizational cultures is one of the resources that canot be easily copied. According to Kuh & Whitt (1988), university culture can be defined as collective mutually shaping patterns of norms, values, practices, beliefs, and assumptions that guide behaviour of individuals and group. This provides a frame of reference within which to interpret the meaning of events and actions on and off campus. University culture allows us to see and understand, interactions of people outside the organization and special events, actions, objectives and situations in distinctive way.

University culture basically comes from three sources; the beliefs, values, and assumptions of founders of organizations and the learning experiences of group members as their organizations evolve. Values, beliefs and assumptions can be thought greatly influence decision making processes at universities and shape individuals and organizational behaviors. Behaviors based on underlying assumptions and beliefs are conveyed through stories, special language and institutional norms (Cameron & Freeman, 1991). University Culture is also created by new beliefs, values and assumptions brought in by new members and leaders. According to Schein (1994), it is the leaders who play the crucial role in shaping and reinforcing culture.

In university settings, it is especially important to investigate interactions between members of faculty and between faculty and students. According to (Kalyani, 2011), the characteristics that capture the essence of innovative culture include: openness, collaboration, trust, authenticity, proactive, autonomy, confrontation, and experimentation.

The definition of a public good (Dill, 2005) is a good or service which is neither rivalrous in consumption nor excludable in ownership. That is to say it is inimitable. Such goods – national defense being the classic example -- will either not be provided or provided in insufficient quantities by the private sector and therefore must be provided by the state. Not surprisingly economists applying this definition conclude that higher education institutions and more specifically the services they provide are not public goods (Barr, 2004). Basic and applied research, academic degrees, and consulting are all supplied both by private and public institutions in our society.

2.7.4 Non-substitutability

The last characteristic of firm resource for sustained competitive advantage is that there must be no strategically equivalent valuable resources that are themselves either not rare or imitable. Two valuable firm resources (or two bundles of firm resources) are strategically equivalent when they each can be exploited separately to implement the same strategies. Suppose that one of these valuable firm resources are rare and imperfectly imitable but the other is not, firms with this first resource will be able to conceive and implement certain strategies. If there are no strategically equivalent firm resources, these strategies will generate a sustained competitive advantage (because the resources used to conceive and implement them are valuable, rare and imperfectly imitable). However, that there are strategically equivalent resources suggests that other current or potentially competing firms can implement the same strategies, but in a different way, using different resources. If these alternative resources are either not rare or imitable, then numerous firms will be able to conceive of and implement the strategies in question, and those strategies will not generate a sustained competitive advantage. This will be the case even though one approach to implementing these strategies exploits valuable, rare and imperfectly imitable firm resources (Barney,1991).

Even if a resource is rare, potentially value-creating and imperfectly imitable, an equally important aspect is lack of substitutability (Dierickx and Cool, 1989;Barney, 1991). If competitors are able to counter the firm's value-creating strategy with a substitute, prices are driven down to the point that the price equals the discounted future rents (Barney, 1986a,; sheikh, 1991), resulting in zero economic profits.

Substitutability can take two forms. First, though it may not be possible for a firm to imitate another firm's resources exactly, it may be able to substitute a similar resource

that enables it to conceive of and implement the same strategies. For example, a firm seeking to duplicate the competitive advantages of another firm by imitating that other firm's high quality top management team will often not be able to copy that team exactly (Barney & Tyler, 1990). However, it may be possible for this firm to develop its own unique top management team. Though these team will be different (different people, different operating practices, a different history), they may likely be strategically equivalent and thus be substitutes for one another. If different top management teams are strategically equivalent (and if these substitute teams are common or highly imitable), then a high quality top management team is not a source of sustained competitive advantage, even though a particular management of a particular firm is valuable, rare and imperfectly imitable.

Second, very different firm resources can also be strategic substitutes. For example, managers in one firm may have very clear vision of the future of their company because of a charismatic leader in the firm (Zucker, 1977). Managers of competing firms may also have a very clear vision of the future of their companies, but this common vision may reflect these firms' systematic, company –wide strategic planning process (Pearce *et al*., 1987). From the point of view of managers having a clear vision of the future of their company, the firm resource of a charismatic leader and the firm resource of a formal planning system may be strategically equivalent, and thus substitute for one another. If large numbers of competing firms have a formal planning system that generates this common vision (or if such a formal planning is highly imitable), then firms with such a vision derived from a charismatic leader will not have a sustained competitive advantage, even though the firm resources of a charismatic is probably rare and imperfectly imitable.

Strategic substitutability of firm resources is always a matter of degree. However, substitute firm resources need not have exactly the same implications for an organization in order for those resources to be equivalent from point of view of the strategies that firms can conceive of and implement. If enough firms have these valuable substitute resources (i.e. they are not rare) or if enough firms can acquire them (i.e. they are imitable) then none of these firms (including firms whose resources are being substituted for) can expect to obtain a sustained competitive advantage (Barney, 1991).

Conclusion on Resource Characteristics

Universities differ in terms of the characteristics of resources they posses. Some are difficult, if not impossible to imitate or copy such as quality of faculty and the presence of particular internal and external support structure. (Bryson et al, 2007). Previous research suggests that expert knowledge and scientific capabilities (Deeds et al, 1997; Finkle, 1998) as well as access to important personnel information and support structures (Flynn, 1993; Mansfield & Lee 1996) are important sources of sustainable competitiveness. Furthermore, access to university research; creation of new products and processes of high technology industries (Mansfield & Lee 1996), have been shown to be significant predictors of sustainable competitiveness. Hence in higher education context, resources such as quality of faculty, the presences of particular programs and infrastructure, the amount of research and development support represent critical resources of a university.

2.8 Theory on Resource Characteristics

The resource-based view (RBV), as one of the most widely accepted theories of competitive advantage, focuses on relationships between company's internal resource

characteristics and competitive advantage (Spanos and Lioukas, 2001). It is based on the assumption that companies within an industry are heterogeneous in terms of resources they control. Since resources may not be perfectly mobile, heterogeneity can be long lasting (Barney, 1991). According to Barney (1992, 1995) resources and capabilities include financial, physical, human and organizational assets that a company uses to develop, manufacture and deliver products and services to customers. Financial resources include debt, equity, retained earnings, etc. Physical resources include machines, manufacturing plants and buildings. Human resources relate to the skills, knowledge, ability to make judgments, risk-taking propensity and wisdom of individuals associated with the company. Organizational resources are history, connections, confidence, organizational structure, formal reporting structure, management control systems and compensation policies (Barney, 1992, 1995).

Resources are inputs into a firm's production process (Barney 1991) that are either knowledge-based or property-based (Miller and Shamsie 1996). Amit & Schoemaker (1993) divide the construct "resource" into resources and capabilities. In this respect, resources are tradable and non-specific to the firm, while capabilities are firm-specific and are used to engage the resources within the firm, such as implicit processes to transfer knowledge within the firm (Makadok, 2001; Hoopes et al, 2003).

Makadok (2001) emphasizes the distinction between capabilities and resources by defining capabilities as "a special type of resource, specifically an organizationally embedded non-transferable firm-specific resource whose purpose is to improve the productivity of the other resources possessed by the firm". "Resources are stocks of available factors that are owned or controlled by the organization, and capabilities are an

organization's capacity to deploy resources"(Amit & Schiemaker, 1993). Essentially, it is the bundling of the resources that builds capabilities (Sirmon et al. 2007)

Property-based resources typically refer to tangible input resources, whereas knowledge-based resources are the ways in which firms combine and transform these tangible inputs (Galunic and Rodan 1998). Knowledge-based resources may be particularly important for providing sustainable competitive advantage, because they are inherently difficult to imitate, thus facilitating sustainable differentiation (McEvily and Chakravarthy 2002). They also play an essential role in the firm's ability to be entrepreneurial (Galunic and Eisenhardt 1994) and to improve performance (McGrath et al. 1996). From the standpoint of resource acquisition, the initial resources involve different dimensions including capital (Bygrave 1992), human resources (Cooper 1981; Dollinger 1995), and physical resources (Dollinger 1995).

While the resource based view within the field of Strategic Management was named by Birger Wernerfelt in his article A Resource-Based View of the Firm (1984), the origins of the resource-based view can be traced back to earlier research. Retrospectively, elements can be found in works by Coase (1937), Selznick (1957), Penrose (1959), Stigler (1961), Chandler (1962, 1977), and Williamson (1975), where emphasis is put on the importance of resources and its implications for firm performance (Rumelt, 1984; Conner, 1991; Mahoney and Pandian, 1992; Rugman and Verbeke, 2002). This paradigm shift from the narrow neoclassical focus to a broader rationale, and the coming closer of different academic fields (industrial organization economics and organizational economics being most prominent) was a particular important contribution (Conner, 1991; Mahoney and Pandian, 1992).

The Resource based view explains that a firm's sustainable competitive advantage is reached by virtue of unique resources being rare, valuable, inimitable, non-tradable, and non-substitutable, as well as firm-specific (Makadok 2001; Finney et al.2004). These authors write about the fact that a firm may reach a sustainable competitive advantage through unique resources which it holds, and these resources cannot be easily bought, transferred, or copied, and simultaneously, they add value to a firm while being rare. It also highlights the fact that not all resources of a firm may contribute to a firm's sustainable competitive advantage. Varying performance between firms is a result of heterogeneity of assets (Lopez, 2005; Helfat and Peteraf, 2003) and RBV is focused on the factors that cause these differences to prevail (Lopez, 2005).

2.9 Summary of the RBV

Although the RBV is considered one of the most influential theories of strategic management (Powell, 2001; Priem and Butler, 2001; Newbert, 2008), its acceptance seems to be based more on the basis of logic and intuition than on the empirical evidence (Newbert, 2008). In most studies that examine the connection between company's resources and performance, resource heterogeneity approach is employed. By that approach, specific resource or capability is claimed to be valuable, rare, imperfectly imitable or non-substitutable, and then the amount of that resource or capability that a company owns is correlated with competitive advantage or performance (Newbert, 2007, 2008). This type of research provides evidence that a specific resource can help company to achieve competitive advantage, but does not verify the influence of resource characteristics (value, rareness, inimitability and non-substitutability) on competitive advantage (Newbert, 2008).

Results of studies using the resource heterogeneity approach suggest that company's asset influences market performance, but not profitability (Spanos and Lioukas, 2001), company-specific resources (corporate management capabilities, employee value-added and technological competence) enhance accounting-based and market-based measures of performance (Acquaah and Chi, 2007) and that relationships between resource sustainability, capability dynamism and resource orientation (RO) are significant (Chmielewski and Paladino, 2007). Wu (2010) divided resources in two groups, VRIN and non- VRIN, and concluded that groups are positively correlated to competitive advantage in low and medium volatility environments, but in high volatility environments, only VRIN resources have influence on competitive advantage.

2.10 Theory on Sustainable Competitiveness

The Balanced Score Card by Kaplan and Norton (1996)

The Balanced Scorecard is a performance management tool that enables a company to translate its vision and strategy into a tangible set of performance measures. However, it is more than a measuring device. The scorecard provides an enterprise view of an organization's overall performance by integrating financial measures with other key performance indicators around customer perspectives, internal business processes, and organizational growth, learning, and innovation. Kaplan and Norton (1996) describe the innovation of the balanced scorecard as follows: "The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in

customers, suppliers, employees, processes, technology, and innovation (Kaplan and Norton, 1996)."

The Balanced Scorecard relies on the concept of Strategy developed by Michael Porter (Kaplan and Norton, 1996). Porter argues that the essence of formulating a competitive strategy lies in relating a company to the competitive forces in the industry in which it competes. The scorecard translates the vision and strategy of a business unit into objectives and measures in four different areas: the financial, customer, internal business process and learning and growth perspective. The financial perspective identifies how the company wishes to be viewed by its shareholders. The customer perspective determines how the company wishes to be viewed by its customers. The internal business process perspective describes the business processes at which the company has to be particularly adept in order to satisfy its shareholders and customers. The organizational learning and growth perspective involves the changes and improvements which the company needs to realize if it is to make its vision come true.

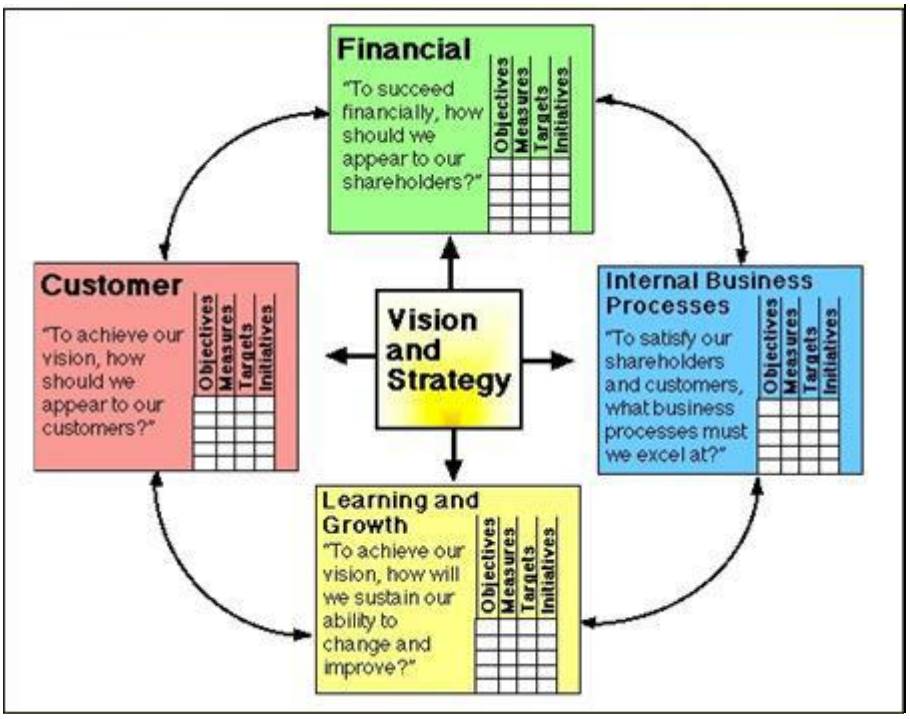


Fig 2.2 Translating Vision and Strategy: Four perspectives Kaplan and Norton (1996)

A strategy is a set of hypotheses about cause and effect. The measurement system should make the relationships (hypotheses) among objectives (and measures) in the various perspectives explicit, so that they can be managed and validated. The chain of cause and effect should pervade all four perspectives of a BSC (Kaplan and Norton, 1996). The chain of cause-and-effect relationships can be established as a vertical vector through the four Balanced Scorecard perspectives.

Kaplan and Norton (1996) assume the following causal relationship the measures of organizational learning and growth are therefore the drivers of the measures of the internal business processes. The measures of these processes are in turn the drivers of the measures of the customer perspective, while these measures are the drivers of the financial measures.

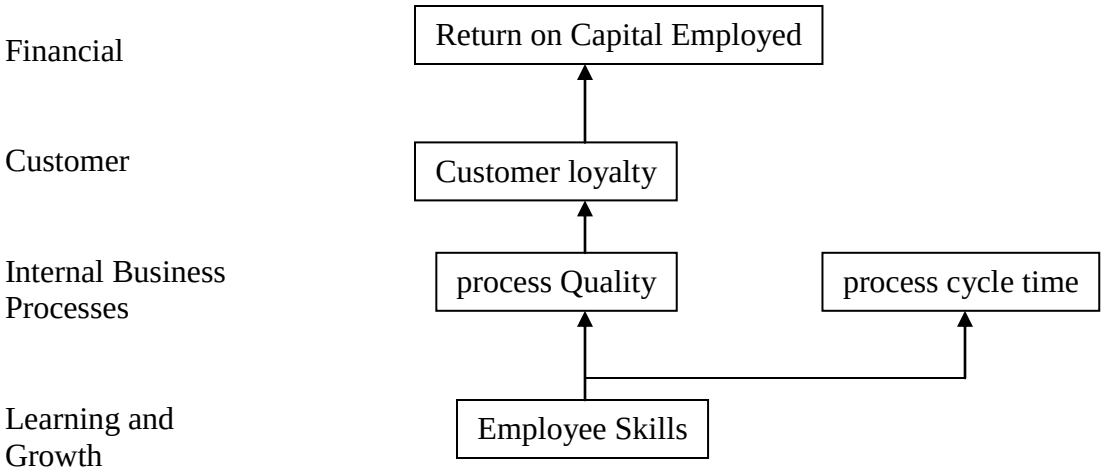


Fig 2.3 Cause and Relationship Effect (Norton and Kaplan, 1996)

2.10.1 Financial

The financial performance measures define the long-run objectives of the business unit. Though most businesses emphasize the profitability objectives, other financial objectives are also possible. Businesses with many products in the early stages of their life cycle can stress rapid growth objectives, and mature businesses may emphasize maximizing cash flows. The three stages include: rapid growth, sustain and Harvest.

The financial objectives for businesses in each of these stages are quite different. Financial objectives in the growth stage (Murby & Gould, 2005) will emphasize sales growth; sales in new markets and to new customers; sales from new products and services; maintaining adequate spending levels for product and process development, systems, employee capabilities and establishment of new marketing, sales and distribution channels. Financial objectives in the sustain stage will emphasize traditional financial measures, such as return on capital employed, operating income and gross margins. Investment projects for businesses in the sustain stage will be evaluated by standard, discounted cash flow, capital budgeting analyses. Some companies will employ newer financial metrics such as economic value added and shareholder value. These

metrics all present the classic financial objective –earn excellent returns on the capital provided to the business. The financial objectives for the harvest business will stress on cash flow. Any investments must have immediate and certain cash paybacks. The goal is not to maximize return on investment, which may encourage managers to seek additional investment funds based on future return projections. Virtually no spending will be done for research on development, or on expanding capabilities, because of the short time remaining in the economic life of business units in their harvest phase (Kaplan, 2010).

Companies use three financial themes to achieve their business strategies: revenue growth and mix; cost reduction/ productivity improvement and asset utilization/ investment strategy. Revenue growth and mix refers to expanding product and service offerings, reaching new customers and markets, changing the product and service mix towards higher-value-added offerings and re-pricing products and services. The cost reduction and the productivity objective refer to efforts to lower the direct cost of products and services, reduce indirect costs, and share common resources with other business units. For asset utilization, managers attempt to reduce the working and physical capital levels required to support a given volume and mix of business. These three financial themes can be used with any of the three generic business strategies; the particular measures will vary depending on the strategy (Kaplan and Norton, 1992).

2.10.2 Customer

In the customer perspective of the Balanced Scorecard (MacLellan, 2007), managers identify the customers and market segments in which the business unit will compete and the measures of business units performance in these targeted segments. The customer perspective includes several generic measures of the successful outcomes from a well formulated and implemented strategy. The generic outcome measures include: customer

satisfaction; customer retention; new customer acquisition; customer profitability and market and account share in targeted segments.

Market and Account share

Market share, especially for targeted customer segment, reveals how well a company is penetrating a desired market. When companies have targeted particular customers or market segments, they can also use a second market- share type measure: the account share of those customers' business. The overall market share measure based on business with the companies could be affected by the total amount of business these companies are offering in a given period. That is, the share of business with these targeted customers could be decreasing because these customers are offering less business to their suppliers (Isoraite, 2008). Companies can measure- customer by customer or segment by segment- how much of the customers' and market segments' business they are receiving. Such a measure provides a strong focus to the company when trying to dominate its targeted customers' purchases of products or services in categories that it offers.

Customer Retention

A desirable way for maintaining or increasing market share in targeted customer segments is to retain existing customers in those segments. Companies that can readily identify all of their customers can measure customer retention from period to period. Other than retaining customers, many companies will wish to measure customer loyalty by the percentage growth of business with existing customers (Murby & Gould, 2005).

Customer Acquisition

The customer acquisition measure tracks, in absolute or relative terms, the rate at which a business unit attracts or wins new customers or business. It can be measured by either the

number of new customers or the total sales to new customers in these segments. Companies such as banks solicit new customers through broad, often expensive, marketing efforts. These companies could examine the number of customer response to solicitation and the conversion rate-number of actual new customers divided by number of prospective inquiries. They could measure solicitation costs per new customer acquired and the ratio of new revenues per sales call (Kaplan, 2010).

Customer Satisfaction

Customer satisfaction measures feedback on how well the company is doing. Only when customers rate their buying experience as completely or extremely satisfying can the company count on their repeat purchasing behavior.

Customer profitability

Succeeding in the core customer measures of share, retention, acquisition and satisfaction, however does not guarantee that the company has profitable customers. One way to have extremely satisfied customers is to sell products and services at very low prices. Since customer satisfaction and high market share are themselves only a means to achieving higher financial returns, companies will wish to measure not just the extent of business they do with customers, but the profitability of this business; particularly in targeted customer segments. Activity-based Cost (ABC) systems permit companies to measure individual and aggregate customer profitability. A financial measure, such as customer profitability, can help keep customers-focused organizations from being customer-obsessed (MacLellan, 2007).

The customer profitability measure may reveal that certain targeted customers are unprofitable. This is likely to occur for newly acquired customers, where the considerable

sales effort to acquire a new customer has yet to be offset from the margins earned by selling products and services to the customer. In this case lifetime profitability becomes the basis for deciding whether to retain or discourage current unprofitable customers. Newly acquired customers can still be valued, even if currently unprofitable, because of their growth potential. But unprofitable customers who have been with the company for many years will likely require explicit action to cope with their incurred losses (Norton and Kaplan, 1996).

Measuring Customer Value proposition

Customer value proposition represents the attributes that supplying companies provide, through their products and services, to create loyalty and satisfaction in targeted customer segments. The value proposition (MacLellan, 2007) is the key concept of understanding the drivers of the core measurements of satisfaction, acquisitions, retention and market and account share. For example, customers could value short lead times and on-time delivery, they could also value a constant stream of innovative products and services.

Value propositions vary across industries and across different market segments within industries. A set of attributes have been observed that organizes the value propositions in all the industries. The attributes are organized into three: product/service attributes; customer relationships; image and reputation. Product and service attributes encompass the functionality of the product/service, its price and its quality. The image and reputation dimension enables a company to pro-actively define itself for its customers. The customer relationship dimension includes the delivery of the product/service to the customer including the response and delivery time and how customers feel about the experience of purchasing from the company. The customer perspective enables business

unit managers to articulate their unique customer and market-based strategy that will deliver superior future financial returns.

2.10.3 Internal Business Process

In the internal business process perspective, executives identify the critical internal processes in which the organization must excel. These processes enable the business unit to: deliver on the value propositions of customers in targeted market segments and to satisfy shareholder expectations of excellent financial returns.

The internal business process perspective (Murby & Gould, 2005) reveals two fundamental differences between traditional and the Balanced Scorecard approaches to performance measurement. Traditional approaches attempts to monitor and improve existing business processes. They may go beyond just financial measures of performance by incorporating quality and time-based metrics. But they still focus on improving existing processes. The Balanced Scorecard approach however will usually identify entirely new processes at which the organization must excel to meet customer and financial objectives.

The second departure of the Balanced Scorecard approach is to incorporate innovation processes into internal business process perspective. The traditional performance measurement system focus on the processes of delivering today's products and services to today's customers. They attempt to control and improve existing operations –the short-wave of value creation. But the drivers of long term financial success may require the organization to create entirely new products and services that will meet the emerging needs of current and future customers. The innovation process- the long wave of value creation –is for many companies, a more powerful driver of future financial performance.

The internal business process perspective incorporates objectives and measures for both the long-wave and the short-wave operations cycle (Kaplan, 2010).

2.10.4 Learning and Growth

The forth Balanced Scorecard perspective, learning and growth identify the infra-structure that the organization must build to create long-term growth and improvement. Organizational learning and growth comes from three principal sources: people, systems and organizational procedures**.** The financial, customer and internal business process objectives of the Balanced Scorecard will typically reveal large gaps between existing capabilities of people, systems and procedures and what will be required to achieve targets for breakthrough performance. To close these gaps, businesses will have to invest in re-skilling employees, enhancing information technology and systems and aligning organizational procedures and routines. As in the customer perspective, employee-based measures include a mixture of generic outcome measures- employee satisfaction, employee retention, employee training and employee skills- along with specific drivers of these generic measures such as detailed indexes of specific skills required for the new competitive environment. Information system capabilities can be measured by real time availability of accurate customer and internal process information to front-line employees. Organizational procedures can examine alignment of employee incentives with overall organizational success factors, and measured rates of improvement in critical customer-based and internal processes.

2.11 The Conceptual Framework

Independent variables

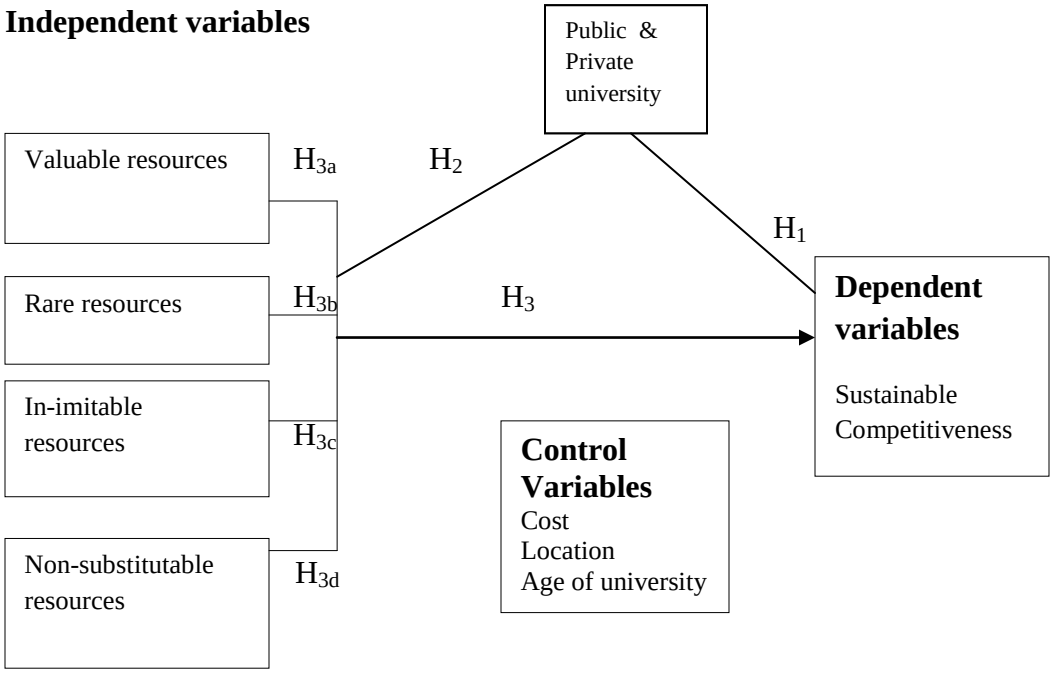


Fig 2.4 Model Linking Resource Characteristics and Sustainable Competitiveness

Source: (Researcher, 2012)

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Overview

This section comprises of the following sub-sections: description of the study area, research design, target population, sampling design and procedure, sample size, sampling technique, data collection, validity & reliability of the research instruments data processing and analysis, outline of the data presentation techniques and ethical considerations.

3.1 Description of the Study Area

The research was carried out between a private university and a public university in Kenya. The public university is located in Eldoret town (Moi University) while the private university is located within the capital city; Nairobi (Catholic University of Eastern Africa). The reason for choosing these universities is that both of them were began in nearly the same year (1984-1985) therefore, they were more likely to have similarities in growth and progress. They can therefore be good examples of how they utilize their resources to gain sustainable competitiveness.

3.1.1. Public University

The public university chosen for this study was Moi University main campus. It is located 36 kilometers south east of Eldoret town on a 1,363.04 hectares of land which was originally a wattle tree plantation formally owned by EATEC (Moi University Calendar, 1996, 97). The university was founded in 1984. Moi University has a number of other campuses including: Annex which houses school of law. It is 5 kms South of Eldoret and is in 45.45 hectares of land; Town campus (College of Health Sciences) and Eldoret West Campus, 5 kms North East of Eldoret. All these are within Eldoret Town.

Other campuses include: Nairobi, Coast, Kitale, Kericho, Alupe, Odera Akang'o and Yala (Moi University website, 2013).

The constituent Colleges of Moi University are Rongo and Garrisa University Colleges. It is privileged to have 14 schools with a total of 72 departments. The university offers over 53 undergraduate degree programs, and 70 post graduate degree programs (Moi University Website, 2011/2012). The number of staff at all levels is 3,662 of whom 934 are academic (teaching) staff. The total student population is 31,723, with over 28,951 undergraduates (14,306 privately sponsored and 14,545 government sponsored). The post graduates are 1,843 (1,577 doing masters and 266 doctoral students).

3.1.2. Private University

The private university chosen for this study was Catholic University of Eastern Africa Nairob campus (Langata). The Catholic University of Eastern Africa (CUEA) started in a modest way. It commenced as a graduate school of theology known as the Catholic Higher Institute of Eastern Africa (CHIEA).

The Institute (CHIEA) was founded in 1984 by the regional ecclesiastical authority known as the Association of Member Episcopal Conferences of Eastern Africa (AMECEA). Eritrea, Ethiopia, Kenya, Malawi, Sudan, Tanzania, Uganda and Zambia are the member countries of AMECEA (CUEA website, 2013).

On 2 May 1984, CHIEA was authorized by the Congregation for Catholic Education, Vatican City (cf. Prot. N. 821/80/34), to offer two-year Licentiate/MA programmes in Theology. On 3 September of the same year, it was officially inaugurated by Rt Rev. Bishop Madaldo Mazombwe, the then Chairman of AMECEA. On 18 August 1985, it was formally opened by Pope John Paul II. In 1986, the Graduate School of Theology

started negotiations with the Commission for Higher Education in Kenya towards the establishment of the Catholic University of Eastern Africa (CUEA).

In 1989, the Institute obtained the "Letter of Interim Authority" as the first step towards its establishment as a private university. After three years of intensive negotiations between the Authority of the Graduate School of Theology (CHIEA) and the Commission for Higher Education, the Faculty of Arts and Social Sciences was established. The climax of the negotiations was a granting of the Civil Charter to CHIEA on 3 November 1992. This marked the birth of the university as a private institution. In 2002, the Faculties of Science and Commerce were established. Then in 2003, the Center for Social Justice & ethics was established (CUEA website, 2013).

CUEA has other two campuses (Nairobi-Langata, Kisumu and Eldoret-Gaba). It also has six faculties: Arts and Social Sciences; Theology; Education; Science; commerce and Law. The catholic university of Eastern Africa offers 27 undergraduate courses and 21 post graduate courses. It has 49 academic staff and over 6,000 student population.

3.1.3 Justification for Single- industry

Scholars argue that the large-scale, multi-industry samples using generic resources set will do little to tease out the unique and hard to copy resources that are at the heart of competitive advantage (Hitt *at al*., 1998; Rouse & Daellenbach, 1999). Amit and Schoemaker (1993) suggest the importance of using single industry studies in RBV research because the strategic value of resources can be industry-specific. Barney (1991) also observes that resources in a previous setting may be weakness of simply irrelevant in a new industry setting. This research will therefore use a single industry setting in which to theoretically develop the RBV and generate a relevant source set from the researcher's context of interest.

In addition, to understand the process of how resources become valuable requires an understanding of how resources are managed. Such information is unlikely to be found across broad industry samples since managers are engaged in identifying, developing and exploiting resources at the level of the firm (Rouse and Duellanbach, 1999). The authors emphasize on seeking out firm-level sources of advantage, because it is at the firm where the unique features of the resources and managerial capabilities can best be examined. Therefore a two-level resource analysis at the industry and firm level promotes a comparative approach to understanding competitive advantage.

Resource-based theory also predicts that even firms within the same industry can rely on different resource sets and processes in managing their firms. It can therefore be argued that a firm-level analysis, opposed to an aggregated industry level analysis, would best uncover these sources of advantage. Rouse and Daellenbach (1999) explain that firms can evidence differences in sources of competitive advantage as based on their distinct firm characteristics and profit margins. Ray *et al*. (2004) states that it is only at the level of the firm where resources and capabilities are most likely to meet the criteria of being strategic assets in accordance with the RBV principles, especially if the managerial processes exploit resources that are rare, valuable and costly to imitate.

Cockburn *et al*. (2000) proposes that questions investigating the origin and dynamics of key resources will improve the utility of the RBV more than studies investigating "differential performance" that pervade the strategy literature. A macro focus at the level of the firm will enable researchers to ask the "what" and "how" questions that have remained largely unaddressed in the RBV literature (Newbert, 2007; Priem and Butler, 2001; Cockburn *et al*., 2000; Miller and Shamsie, 1996).

Theoretically, the “what” and “how” questions are the most useful questions to provide a framework for interpreting patterns in empirical observations (Robinson, 2008). In order to extend the knowledge and boundaries of this study, the “why” questions should also be considered. That is, the “how” and “what” questions describe while the “why” questions explain.

3.2 Research Philosophy

The research philosophy adapted for this study is positivist. Positivists claim there is a single, objective reality that can be observed and measured without bias using standardized instruments. For the positivists, the goal is a universal truth, a rule or explanation that is always true so long as specified conditions hold (Blake, 1993).

In the positivist paradigm, the researcher sees himself or herself as a neutral recorder. Positivists (Saunders *et al*, 2007) evaluate the success of their research in part by measuring how closely the findings of different researchers match. Though recognizing that no data collection instrument is perfect, positivists seek to develop standardized instruments that they believe precisely tap a single reality (Eriksson and Kovalainen, 2008). They seek to imitate the sciences that have developed quantitative ways of measuring physical, biological, or chemical phenomena in replicable ways. In addition, positivists judge research in terms of its validity—that is, the extent to which their research tools actually do measure the underlying concept that they are supposed to measure (Easterby-Smith *et al*, 2008).

Hatch and Cunliffe (2006) relate this to the organizational context, stating that positivists assume that what truly happens in organizations can only be discovered through

categorization and scientific measurement of the behavior of people and systems and that language is truly representative of the reality.

3.3 Research Design

This study was based on prospective causal-comparative research design. Prospective causal-comparative research requires that a researcher initiates a study beginning with the causes and is determined to investigate the effects of a condition (Gay et al, 2006). The characteristics of this research design is that individuals are not randomly assigned to groups as the study is involving an event or situation that has already occurred with groups that are already formed (Lodico et al., 2006).Causal comparative research attempts to determine the cause, or reason for existing differences in behavior or status of groups. It describes the conditions that already exist.

In causal-comparative research participants are already organized in groups. These groups, defined by Gay et al. (2006) as comparison groups, are selected because one group does not possess a characteristic or experience possessed by the second group (this characteristic or experience is the independent variable that the researcher plans to study) or the two groups differ in the amount of a characteristic that they share (this, once again, is the independent variable being studied).

Researchers conducting causal-comparative studies can employ a variety of methods to control for extraneous variables. Such methods include; matching, compare groups that are homogenous with regards to the extraneous variable, creating subgroups, and the use of a statistical procedure called an analysis of covariance (ANCOVA) to analyze study data. Using such controls require that researchers obtain measures of specific extraneous variables of concern. The most common method employed to account for extraneous variables in causal-comparative research is the usage of statistical tests such as multiple

regression (Wolgemuth and Leech, 2006). This study will therefore use hierarchical multiple regression to control for extraneous variables.

Appropriateness of Design

A research design must match the research problem (Creswell, 2005). A causal comparative design will be used to explore whether a pre-existing, independent variable influences the dependent variables (Gay et al., 2006; Schenker & Rumrill, 2004). In this study, the independent variable is the resources characteristics, and the dependent variable is sustainable competitiveness. A causal-comparative method will be appropriate for an attempt to identify the effect of resource characteristics on sustainable competitiveness.

A causal-comparative design allows a researcher to infer differences in group behavior or status and compare the groups on a variable (Fraenkel & Wallen, 2006; Gay et al., 2006. The research design is appropriate because the researcher is unable to manipulate the independent variable (resource characteristics), which is pre-existing, as opposed to true experimental research in which there is manipulation of the independent variable (Gay et al., 2006). A causal-comparative design is the correct methodology to explore the potential effects of a pre-existing, independent variable on the dependent variables between or among groups (Gay et al., 2006). In this research study, the pre-existing independent variable is the organization's internal resources, and the dependent variable is competitive advantage.

A causal-comparative design will be chosen in lieu of a co-relational design because the study involves comparing two groups that vary on one independent, categorical variable. A co- relational research design involves establishing a relationship within a group on

two or more continuous variables (Rumrill, 2004; Fraenkel & Wallen, 2006; Gay et al., 2006)

3.4 Target Population

This study targeted the staff of both private and public universities. The study focused on the staff in the schools/faculties that are in both the universities. These included: Arts and Social Sciences; Law; Education and Commerce/Business Management. The total number of staff at the Catholic University of Eastern Africa in the four faculties/schools is 170 while those from Moi University are 250. The staffs targeted were administrators, and all the teaching staff of the four schools. This was because they were the custodians of their departments' resources and would qualify the resources according to the resource characteristics. Another reason for targeting administrators and academic staff was that they were best suited to answer question on the sustainable competitiveness constructs which included: teaching and learning, research, outreach, workplace satisfaction and finance.

Table 3.1 Target Population

	Schools				
	Arts &Social Sciences	**Education**	**Law**	**Commerce/Business**	**Total**
Institution					
Public	87	65	38	60	250
Private	46	53	30	41	170
Total	**133**	**118**	**67**	**101**	**420**

Source: Survey Data 2012

3.5 Sampling size and Technique

3.5.1 Sample Size

The four schools targeted were stratified into departments. The school of Arts and Social Sciences for example was made up eight departments at public University and also eight

departments at private university; school of Law had 4 departments at the public University and 2 at the private university; school of Education had 4 departments at the public university and 2 at the private university and school of Business Management has the 5 departments at the public University and also 3 at private university.

This study used Kerjcie and Morgan (1970) method for determining the sample that is representative of the population using the following formula:

$$S = X^2 NP\ (1- P) \div d^2\ (N -1) + X^2 P(1- P)$$

Where:

S = required sample size.
X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).
N = the population size.
P = the population proportion (assumed to be .50 since this would provide the maximum sample size).
d = the degree of accuracy expressed as a proportion (0.05).

A standardized table has been attached as an appendix. From the sample size table, the public university staff population of 250 in the four schools will be represented by a sample size of 148 and the private university population of 170 will be represented by sample size of 114.

3.5.2 Sampling Technique

In order to determine how respondents were selected for the study, stratified sampling was applied in order to select the respondents in both universities. This was done through stratifying the staff members into the departments they work in. Stratified sampling is useful when the researcher wants to develop categories of employees with non-

overlapping characteristics (Creswell, 2003). The sampling frame used was the universities' school staff lists. After developing strata, the researcher applied systematic sampling using the school's staff list as the sampling frame where every i^{th} name were selected depending on the list and the number required.

3.5 Data Collection

This section describes the types and sources of data, which were employed in the study.

3.5.1 Primary Data and Sources

Primary data refers to information that examines the general natural phenomena to describe objectives (Nsubuga ,2000) as well as perceptions and attitudes of employees, which was best obtained events, people and objects and administering questionnaires to the respondents (Martella and Martella, 1999).the primary data collected from the selected staff members of the four schools/faculties (Arts and Social Sciences; Law; Education and Commerce/Business Management in both universities (CUEA and Moi University) was through questionnaires.. The questionnaire gathered information on employee perception on competitive sustainability based on characteristics of resources.

3.5.2 Secondary Data and Sources

Secondary data involves search of secondary literature that is studies by other author. Secondary data in this study was obtained through review of published and unpublished materials such as journals, theses, universities student statistics and government documents in libraries, university calendar and the internet.

Table 3.2 Departments in the four schools in private and public universities

	Departments	
	Public university	**Private University**
Schools		
Arts and Social Sciences	Sociology Anthropology and Human Ecology Kiswahili and Other African languages Linguistics and other foreign languages Geography History, political science & Public administration Literature, theatre and film studies studies Philosophy and religious studies	Sociology Anthropology Kiswahili and communication studies Geography History& political science Philosophy& religious Development studies Economics
Sample size	(48)	(36)
Education	Curriculum Instruction & Media studies Educational management & Policy Studies Educational foundations Psychology, guidance & Counseling	Curriculum studies Educational Administration & Planning
Sample size	(40)	(33)
Law	Public law Private law Commercial law Legal Aid & Externship	Public law private law
Sample size	(24)	(18)
Business/Commerce	Management Science Marketing and Logistics Agricultural Economics & Resource Management Economics Accounting and Finance	Accounting & Finance Marketing Management
Sample size	(36)	(27)

3.6. Data collection Instruments

The data collection instruments used in this study was questionnaires. The questionnaires were administered to the staff members of the four schools (Arts and Social Sciences; Law; Education and Commerce/Business Management in both universities (CUEA and Moi University). Questionnaires were preferred because of the large number of the sample size which means therefore that holding interviews would take very long. A questionnaire was appropriate for this study because it gives the researcher an opportunity to carry out an inquiry on specific issues on a large sample and thus make the study finding more dependable and reliable (Nachmias,2004; Kothari, 2003). The instrument was also appropriate because the respondents are literate and therefore can respond to the questionnaire on their own. The questionnaires were self-administered; where the respondents were asked to complete the questionnaires themselves.

3.7 Measurement Scales

Two main variables were used in this study; resource characteristics as the independent variables and sustainable competitiveness as the dependent variables. Control variables included Cost of the institution, location and age.

3.7.1 Sustainable Competitiveness

Sustainable competitiveness was measured using five constructs. They include programs/courses, public service/ outreach, research, workplace satisfaction and finance (Ruben,1999). The researcher measured the strength of the respondents' agreement on 10 statements developed by the researcher.

Two items were used to measure each of the five constructs of sustainable competitiveness. *Programs or Courses* for example was measured using: "all the

lecturers in the department have masters degrees and above" and "programs offered in the department are current in the market". *Research* was measured by "the department has a journal that is produced on quarterly basis" and "publications are recognized if they are published in selected stature of journals of publishers". The two items that measured O*utreach* were "Employers send their employees to the departments' programs for continuing education" and "the alumni of the department offer both financial and moral support to its initiatives". *Workplace Satisfaction* was measured by "the department experiences very low staff turnover" and "employees in the department are regularly trained in their area of specialization" and lastly *Finance* was measured with "the department receives donations (monetary, books etc)" and "departments prepares an operating budget annually"

3.7.2 Resource Characteristics

Resource characteristics were measured using four constructs: value, rarity, inimitability and non-substitutability (Talaja, 2012). *Value of resources* was measured using 13 items such as "the department has built a good image over the years"; "the programs offered at the department are very attractive". *Rarity of resources* was measured with 8 items e.g. "the departmental library has very unique books for the different programs"; "the department has some very unique programs it offers". *Inimitability of resources* was measured using 11 items e.g. "interpersonal and intrapersonal relationships in the department cannot be copied"; "the trust that exists within the employees and the management of the department cannot be emulated" and finally, *non-substitutability of resources* was measured using 2 items: "programs developed in the department cannot be replaced by other programs from other institutions" and "the lecturers' competencies cannot be replaced by others and the same output expected"

3.7.3 Control Variables

The study controlled for the Age of the university, location of the university and cost of programs. The researched controlled for those factors so as to eliminate their effect on the characteristics of resources' effect on sustainable competitiveness. Age was measured as below 10 years; between 10-20years; between 21-30 years or over 30yrs. Location was measured as either urban or rural setup while cost of programs ranged from less than 100,000; 100,000-110,000; 110,001-120,000; 120,001-130,000; 130,001-140,000 or 140,001 and above.

Table 3.3 Operationalization of the Variables

	Questionnaire Items (Researcher Self developed Scales)	**Type of Data**	**Type of Scale and index construction**
1. Sustainable competitiveness			
a) programs/Courses	Items 22-23	Continuous 5-point Likert scale	Interval scale
b) Research	Items24-25	Continuous 5-point Likert scale	Interval scale
c) Outreach	Items 26-27	Continuous 5-point likert scale	Interval scale
d) Workplace satisfaction	Items 28-29	Continuous 5-point likert scale	Interval scale
e) Finance	Items 30-31	Continuous 5-point likert scale	Interval scale
2. Resource characteristics			
a) Value of resources	Item 33-45	Continuous 5-point likert scale	Interval scale
b) Rarity of resources	Item 46-52	Continuous 5-point likert scale	Interval scale
c) Inimitability of resources	Item 53-62	Continuous 5-point likert scale	Interval scale
d) Non-substitutability of resources	Item 63-64	Continuous 5-point likert scale	Interval scale
3. Control Variables			
a) Age	Item 19	Discrete	Ordinal
b) Location	Item 21	Discrete	Nominal
c) Cost	Item 20	Continuous	Interval scale

Source: Survey Data (2013)

3.8 Validity & Reliability of the Research Instruments

The validity of a study depends upon how well an instrument or research design measures what the researcher intends to measure (Gay et al., 2006). The ability to draw meaningful and justifiable conclusions about the data depends on the validity of the study. Internal validity refers to the degree to which the independent variable influences difference in the dependent variable (Fraenkel & Wallen, 2006; Schenker & Rumrill, 2004).Internal validity is a concern in causal-comparative research designs. One threat to internal validity in causal-comparative designs is the inability to manipulate the pre-existing independent variable (Fraenkel & Wallen, 2006; Schenker & Rumrill, 2004). Because the independent variable in the study (resource characteristics) is pre-existing, it cannot be manipulated. The purpose of the study is not to assign causality to the independent variable but to determine the degree to which the independent variable (resources characteristics) influences the dependent variable (sustainable competitiveness).

Another threat to internal validity in causal-comparative designs is that group membership within the independent variable is pre-existing (Gay et al., 2006). To increase internal validity in a causal-comparative study, homogeneous comparison groups will be identified to control for extraneous variables (Fraenkel & Wallen, 2006). For this study, the following schools (Arts and Social Sciences; Law; Education and Commerce/Business Management) that exist in both universities will be used.

Because internal validity is difficult to establish in a causal-comparative study, external validity is exceedingly important (Schenker & Rumrill, 2004). External validity refers to the degree to which results of a study can be generalized beyond the research study. How

groups are defined affects the ability of researchers to apply the results found in a sample to the larger population (Fraenkel & Wallen, 2006).

To increase external validity, operational definitions are given to specifically define the population under study and guide sample selection (Gay et al., 2006). Operational definitions provide meaning outside the study. Because of the specifically defined variables, the conclusions drawn from the study might not be generalizable to other geographic regions or other populations. External validity is present when the sample represents the larger population from which the sample was drawn (Schenker & Rumrill, 2004).

To ensure content validity, an adequate judgment can be made by a thorough review of literature; prior discussion with others; or a panel assessment (Saunders et al., 2009). This research instrument was pre-tested with the staff of the University of Eldoret to ascertain if the instrument is understandable and also to rectify any ambiguous language used. Pre-testing was done to ensure that the questions are indeed eliciting the required responses, while uncovering ambiguous wordings or errors before the actual study is carried out (Burns & Bush, 2002; Zikmund et al., 2000). The preliminary questionnaire was presented to one school (Education) at the University of Eldoret. The respondents were requested to comment critically on the suitability, the appropriateness and the ease of understanding of the each item. The respondents were requested to identify any difficulties with wording, problems with double-barrelled questions, leading questions and biasness (Zikmund et al., 2000).

To test reliability of the research instruments, this study will use cronbach's alpha to test for internal consistency. Cronbach's alpha provides a measure of the extent to which the

items on the questionnaire provide consistent information with regard to the respondents' mastery of the domain (Wells and Wollack, 2003). The formula for cronbach's alpha is as follows:

$\alpha = N/(N - 1)[1 - \text{sum } Var(Yi)/Var(X)]$

Where:

N = Number of items

sum Var(Yi) = sum of item variances

Var(X) = composite variance (Allen & Yen, 1979)

The higher the reliability value the more reliable the measure. The general convention in research has been prescribed by Nunnally and Bernstein (1994) who state that one should strive for reliability values of .70 or higher. Reliability values increase as test length increases (Gulliksen, 1950). That is, the more items you have in your scale to measure the construct of interest the more reliable your scale will become.

3.9 Data Analysis

3.9.1 Data Screening and Cleaning

After administering the questionnaires, the raw data collected was screened and cleaned for missing values, normality and outliers. The missing values were replaced using mean substitution estimation (Tabachnick and Fidell, 2007). All standardized scores were within the interval -3.0 to 3.0, meaning there were no univariate outliers (Steven's, 2002). Multivariate outliers were assessed using mahalanobis distance (D^2).

3.9.2 Descriptive Statistics

Typically, in causal-comparative studies data is reported as a mean or frequency for each group. Inferential statistics are then used to determine whether the means "for the groups are significantly different from each other" (Lodico et al., 2006). The most commonly

used descriptive statistics in causal comparative include mean, which indicates the average performance of a group on a measure of some variable and the standard deviation, which indicates the spread of a set of scores around the mean- that is, whether the scores are relatively close together and clustered around the mean or widely spread out around the mean.

Normality was confirmed by examining the distribution of the variables, their skewness and Kurtosis values using histograms. Pearson product moment correlation coefficient was used to examine assumptions of linearity. Levenne statistic for equality of variance was used to assess homogeneity. Principal Component Analysis (PCA) was used to determine the factor structure of the constructs (Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's test of sphericity were used).

3.9.3 Inferential Statistics

The inferential statistics used include the t-test, which is used to determine whether the scores of the two universities are significantly different from one another in terms of resource characteristics and sustainable competitiveness. This analysis technique was useful for this study because the researcher sought to establish differences in sustainable competitiveness and resource characteristics in both private and public universities (Gall et al, 2003).

Lastly, to test exploratory hypothesis pertaining to the effect of resource characteristics on sustainable competitiveness, multiple regressions were conducted. The multiple regression analysis was appropriate in predicting the effect; utilizing R^2 and adjusted R^2 to determine the fitness of the model (Hair *et al*. 2006). This study used hierarchical multiple regression. In hierarchical multiple regression, the independent variables are

entered in two stages. In the first stage, the independent variables that we want to control for are entered into the regression. In the second stage, the independent variables whose relationship we want to examine after the controls are entered. A statistical test of the change in R^2 from the first stage is used to evaluate the importance of the variables entered in the second stage. The hypothesis predicted sustainable competitiveness using the following model:

Step 1: $Y=\alpha+\beta_1 Z_1+ \beta_2 Z_2+ \beta_3 Z_3$

Step 2: $Y=\alpha + \beta_1 X_1+ \beta_2 X_2+ \beta_3 X_3+ \beta_4 X_4+\varepsilon$

Where Y= Sustainable competitiveness

Z_1= Age of the institution; Z_2= Cost of the program and Z_3= Location of the institution

X_1=Value of resources; X_2=Rarity of resource; X_3= Inimitability of resources and

X_4= Non-substitutability of resources

α and β =regression coefficients

ε= residuals

Assumptions of regression include: the accuracy of data, which should at least check the minimum and maximum value for each variable to ensure that all values for each variable are "valid."

Another assumption is Missing data. If specific variables have a lot of missing values, you may decide not to include those variables in your analyses. Another assumption is the outliers (i.e., an extreme value on a particular item). An outlier is often operationally

defined as a value that is at least 3 standard deviations above or below the mean. The data should be normally distributed. There is also the assumption of linearity- that is there is a straight line relationship between dependent and independent variable. The assumption of homoscedasticity is that the residuals are approximately equal for all predicted dependent variable scores. Lastly multicollinearity is a condition in which the independent variables are very highly correlated (.90 or greater) and singularity is when the independently variables are perfectly correlated and one independent variable is a combination of one or more of the other independent variables. Tolerance statistics and Variance Infaltion Factor (VIF) was used to detect multicolinearity. (Wolgemuth and Leech, 2006).

Data was presented in both descriptive and inferential statistics. Descriptive statistics indicated the mean differences for comparisons awhile the inferential statistics tested the "effect" using multiple regression.

3.10. Ethical Considerations

According to Polonsky and Waller (2005), the researcher should understand the basics of ethical research and how this might affect the thesis. In accordance with this, as part of Moi University requirements, all research proposals must have an approval from the government of Kenya before collecting data. Therefore, a research permit was obtained from National Council of Science, Technology and Innovation. A number of considerations were also adopted to ensure that no one will be negatively affected by the research. First, letters of formal invitation enclosed with the instrument were given to all respondents in order to obtain their permission. The information includes the aim of the study. It also included the intended use of data and issues related to voluntary participation; ensuring confidentiality. Secondly, to ensure confidentiality of the data the researcher undertook a number of procedures including: that individuals' personal

information will not be identified in any finding; raw data collected will not be used for any other purpose other than those specified by the researcher and raw data to be collected will be private to the researcher.

3.11 Limitations of the Study

Although this study has made theoretical and managerial contributions, it also had its limitations. The data is entirely based on assessment of university staff on their university, i.e. their opinion on investigated variables, which can often be biased. The sample is made of one public university and one private university, which can limit the generalization of findings. Also, replicating this study in another context or another country could lead to broader generalization of results.

Another limitation of this study encountered was in the data collection. The staff of both the universities took too long to respond to the questionnaire while others submitted the questionnaires unanswered or answered halfway. This made the research period longer and to some extent derailed the entire research process.

This study also failed to collected data on the universities over previous years which means that study was cross sectional in nature. It only collected data on private and public universities at a single point in time. A longitudinal research therefore would be more appropriate so as to follow the trend of the universities over a longer period say 5 or 10 years.

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Overview

This chapter presents the results of data analysis. The first section examines the response rate; the second section presents screening and cleaning of data in terms of missing values, outliers and normality. The third section represents the descriptive statistics of the study variables. The fourth section compares the prevailing differences in sustainable competitiveness among private and public universities. The fifth section compares the prevailing in resource characteristics in private and public universities and the last section presents a regression model of internal resource characteristics on sustainable competitiveness.

4.1 Response Rate

The sample consisted of employees from public university (Moi) and private university (CUEA). A total of 290 questionnaires were distributed; 170 to the public University and 120 to the private. These numbers are more than the sample sizes of 148 and 114 for public and private universities respectively. This is because the some respondents misplaced their questionnaires, requiring the researcher to redistribute them again. Table 4.1 shows the overall response rate of 91.7% (156) for the public University and 97.5% (117) response rate for the Private University. A total of eight questionnaires were discarded from the public University because they were blank & incomplete, similarly, two were discarded from the private university for being incomplete. The total usable questionnaires were 262, that is 148 (87.1%) from the public University and 114 (95%) from CUEA which is acceptable for this type of research (Drnevich and Kriauciunas, 2011; Protogeron et al, 2008).

Table 4.1 Response Rate

Sample size	Public university		Private university	
	No.	Percentage	No.	Percentage
Questionnaires distributed	170	100	120	100
Total Responses	156	91.7	117	97.5
Unusable	8	4.7	3	2.7
Usable responses	148	87.1	114	95

4.2 Data Preparation and Cleaning

All data was entered into SPSS version 18.0. Data screening was then conducted according to guidelines set out by Tabachnick and Fidell (2007). This included assessment of missing data, outliers, normality and testing basic assumptions of analysis of variance (ANOVA) and multiple regression analyses.

4.2.1 Missing Data

Missing data was assessed with respect to the key variables used in the study (resource characteristics and sustainable competitiveness). Results presented in table 4.2 indicate that sustainable competitiveness together with the four components of resource characteristics had missing values in several items. None of the missing values however had missing data points in more than 5% of the cases. Mean substitution estimation was therefore used to replace missing values (Tabachnick and Fidell, 2007).

4.2.2 Univariate outliers

Univariate outliers are cases with unusual values for single variables (Tabachnick and Fidell, 2007). Using standardized scores no univariate outliers were identified for any of the sustainable competitiveness or resource characteristic variables (all standardized scores were within the interval -3.0 to 3.0 recommended by Steven's (2002).

4.2.3 Multivariate outliers

Mahalanobis distance (D^2) was used to detect multivariate outliers for the set of resource characteristic variables. As noted by Tabachnick and Fidell, (2007), Mahalanobis distance (D^2) indicates how far a case is from the centroid of all cases for predictor variables. A case is therefore deemed an outlier if the probability associated with its D^2 falls below 0.001. Using Mahalanobis distance (D^2) no multivariate outliers were identified for any of the resource characteristic variables (all the probabilities of the D^2 were above 0.001).

Table 4.2: Missing Values by Variables

Variable	Number of missing values	percentage
Sustainable competitiveness		
1.The department has a journal that is produced on quarterly basis	2	0.8
2.Publications are recognized if they are published in selected stature of journals or publishers	4	1.5
3.The alumni of this department offer both financial and moral support to its initiatives	3	1.1
4.The department experiences a very low staff turnover	3	1.1
Value of resources		
1.Graduates from this department have been employed at very prestigious organizations	3	1.1
2.Research seminars are organized frequently at the department level	3	1.1
3.Lecturers attend all the classes as they are required	3	1.1
Rarity		
1.The departmental library has very unique books for the different programs	10	3.8
2.The relationship between the department and the students is very unique in that it goes beyond the classroom issues	4	1.1
Inimitability		
The number of years of experience gained by my department cannot be copied	1	0.4
Methods of content delivery changes with the technological change	7	2.7
Non-Substitutability		

Source: Survey Data (2013)

4.2.4 Normality Assessment

Normality was confirmed by examining the distributions of the variables (i.e. histograms) and their skewness and kurtosis values. From the histograms (appendix), the distributions of both sustainable competitiveness and resource characteristics were approximately normally distributed. This was further confirmed by the skewness and kurtosis values (none of the skewness and kurtosis values fell outside the interval -2.0 to 2.0) (Table 4.3)

Table 4.3: Normality Assessment

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Resource value	-.013	.150	-1.518	.300
Resource Rarity	-.565	.150	-.968	.300
Resource inimitability	-.420	.150	-1.408	.300
Resource non-substitutability	-.336	.150	-.904	.300
Sustainable competitiveness	-.018	.150	-1.111	.300

Source: Survey Data (2013)

4.2.5 Assessment of Linearity

There were no issues with linearity. Pearson's product moment correlation coefficient was used to examine assumptions of linearity. Results indicate that there were positive correlations among resource characteristics as well as between resource characteristics and sustainable competitiveness (Table 4.4)

4.2.6 Assessing Homogeneity of Variances

Using Levenne statistic for equality of variances, homogeneity of variances was assessed. The study revealed that the assumption of homogeneity of variances was not violated (Table 4.5). None of the levenne statistic was significant (Tabachnick and Fidell, 2007).

Table 4.4: Linearity Assessment

	1	2	3	4	5
1.Sustainable Competitiveness	1				
2.Value of resource	.164*	1			
3.Rarity of resource	.299**	.707**	1		
4.Inimitability of resource	.113	.751**	.558**	1	
5.Non-substitutability of resource	.096	.563**	.423**	.815**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Source: Survey Data (2013)

Table 4.5: Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Sustainable Competitiveness	1.689	1	260	.195
Value of resource	1.054	1	260	.351
Rarity of resource	.794	1	260	.374
Inimitability of resource	.314	1	260	.576
Non-substitutability of resource	.334	1	260	.564

Source: Survey Data (2013)

4.2.7 Scale Dimensionality

Principal components analysis (PCA) was used to assess the underlying factor structure of the given variables and also to reduce items in the case of complex variables (Tabachnick and Fidell, 2007). A separate principal component analysis was conducted for each of the resource characteristics scales as well as for the sustainable competitiveness scale. The Kaiser criterion of retaining factors with Eigen values greater than one was employed. To test data for suitability for PCA, the Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's test of sphericity were used. However, a value of 0.6 and above for the Kaiser-Meyer-Olkin statistic and a significance measure of spherecity were acceptable as suggested by Tabachnick and Fidell (2001). After factor extraction, the factors loadings were then rotated using varimax which is an orthogonal

rotation. This rotation method was used because it does not permit factors to be correlated.

4.2.7.1 Value of Resource

Thirteen items were proposed to measure value of resource. Principal components analysis extracted nine items that converged to measure value of resource. The items accounted for 70.54% of the variance in value of resource. The Kaiser-Meyer-Olkin value of 0.911 together with the significant Bartlett's test of sphericity (χ^2 (78) =2822.302, $p<0.01$) indicated that data were adequate for PCA. Table 4.6 shows that all factor loadings were above 0.714 and loaded highly on two factors. The reliability coefficient of the value of resource scale was 0.941, which was well above the recommended value of 0.7 (Tabachnick and Fidell, 2007) for internal consistency.

4.2.7.2 Rarity of Resource

A total of seven items were proposed to measure rarity of resource. Using PCA, all the seven items were extracted. The seven factors were segregated into two factors which accounted for 76.920% of the variance in rarity of resources (Table 4.7).

The Kaiser–Meyer–Olkin value was 0.730 and the Bartlett's test of sphericity value of 1347.391 was significant ($p<0.01$). This indicates that data for rarity of resource were adequate for PCA. The Cronbach's reliability coefficient of the scale was found to be 0.888 and was above the recommended value of 0.7 indicating internal consistency of the scale.

Table 4.6: Rotated Principal Components Analysis results for Value of Resource

Constructs and scales	Loading	Eigen Values	Cum. Variance Explained
Value of resource	**.941***		
Factor1		4.643	35.726
Graduates from this department have been employed at very prestigious organizations	.719		
The teaching methods used in my department are appropriate	.714		
Lecturers are free and approachable to students	.715		
Lecturers in the department are very competent	.716		
All the lecturers hold a masters degree and above	.860		
Factor2		4.527	70.542
The department organizes for forums where the alumni are invited	.841		
Social responsibility programs are organized by the department to improve the society	.868		
Research seminars are organized frequently at the department level	.741		
Lectures begin promptly at the beginning of the semester	.831		
Kaiser-Meyer-Olkin MSA:	**.911**		
Bartlett's test of Sphericity:	**.000**		

***Cronbach alpha reliability coefficient**
Source: Survey Data (2013)

4.2.7.3 Inimitability of Resource

Eleven items were proposed to measure inimitability of resource. Using PCA, two factors were extracted and accounted for up to 69.568% of the variance in inimitability of resource. The Kaiser-Meyer-Olkin value of 0.777, and the significant Bartlett's test of sphericity (χ^2 (55) =2579.708, p<0.01) indicated that data collected for inimitability of resource were adequate for PCA. The reliability coefficient of the ten items extracted was 0.919 confirming that the scale had internal consistency (Table 4.8)

Only two items were proposed to measure non-substitutability of resource. Consequently PCA was not conducted for this resource characteristic.

Table 4.7 Rotated Principal Components Analysis for Rarity of Resource Variable

Constructs and scales	Loading	Eigen Values	Cum. Variance Explained
Rarity of Resource	**.888***		
Factor1		3.322	47.459
The department has some very unique programs it offers	.893		
Lectures are carried out in very conducive environment for learning (quiet and serene)	.753		
The department has existed for many years therefore it has an expansive experience	.702		
The staff of the department use their extracurricular talents to help the students	.889		
The department has developed patents for its innovations	.756		
Factor2		2.062	76.920
The departmental library has very unique books for the different programs	.918		
The relationship between the department and the students is very unique in that it goes beyond the classroom issues	.907		
Kaiser-Meyer-Olkin MSA:	**.730**		
Bartlett's test of Sphericity:	**.000**		

***Cronbach alpha reliability coefficient**

Source: Survey Data (2013)

4.2.7.4 Sustainable competitiveness

Sustainable competitiveness was conceptualized in this study as the dependent variable. Ten items were proposed to measure this variable. The principal components analysis extracted six items which loaded highly on two factors. Data collected for sustainable competitiveness were adequate for PCA as evidenced by the Kaiser-Meyer-Olkin value of 0.876 and the significant Bartlett's test of sphericity (χ^2 (45) =1791.717, $p<0.01$). The reliability coefficient of the six items extracted was 0.908 and variance explained was 66.779% (Table 4.9)

Table 4.8: Rotated Principal Components Analysis results for Inimitability of Resource Variable

Constructs and scales	Loading	Eigen values	Cum. Variance Explained
Inimitability of Resource	**.919***		
Factor1		5.569	50.626
The trust that exists within the employees and the management of the department which cannot be emulated	.726		
The process of developing programs within the department cannot be easily copied by others	.771		
The values and beliefs that my department holds to cannot be copied by competitors	.881		
The number of years of experience gained by my department cannot be copied	.855		
The competence of the departments employees cannot be copied	.734		
The department develops new programs regularly	.713		
Programs developed are reviewed annually	.859		
Methods of content delivery changes with the technological change	.832		
		2.084	69.568
Factor2			
The name the university and department have built cannot be imitated.	.912		
Market demand drives the development of programs within the department	.946		
Kaiser-Meyer-Olkin MSA:	**.777**		
Bartlett's test of Sphericity:	**.000**		

***Cronbach alpha reliability coefficient**

Source: Survey Data (2013)

Table 4.9: Rotated Principal Components Analysis results for Sustainable Competitiveness

Constructs and scales	Loading	Eigen values	Cum. Variance Explained
Sustainable Competitiveness	**.908***		
Factor1		3.906	39.064
The department has a journal that is produced on quarterly basis	.774		
Publications are recognized if they are published in selected stature of journals or publishers	.777		
The alumni of this department offer both financial and moral support to its initiatives	.771		
The department experiences a very low staff	.723		
turnover The department receives donations (monetary, books etc)	.776		
Factor2		2.771	66.779
employees in the department are regularly trained in their area of specialization	.726		
Kaiser-Meyer-Olkin MSA:	**.876**		
Bartlett's test of Sphericity:	**.000**		

Source: Survey Data (2013)

4.3 Sample and respondents characteristics

The respondents characteristics were analyzed in terms of the type of institution, location (setting), age of institution, school the respondent works in and cost of programs in the school. The purpose was to help the researcher to understand the make up of its respondents and the context in which the study was conducted. Moreover, the researcher wished to identify the demographic characteristics in order to control for their influence in testing the hypotheses.

Table 4.10 Demographic profile of the Sample Respondents

Characteristics	Response	Frequency	Percentage
Type of institution	Public	149	56.9
	Private	113	43.1
Location of the institution	Urban setup	113	56.9
	Rural setup	149	
Age of the institution	10-20yrs	4	1.5
	21-30yrs	113	43.1
	Over 30yrs	145	55.3
School	Business	60	22.9
	Law	39	14.9
	Arts and Social Sciences	80	30.5
	Education	83	31.7
Cost of program	BBM/BBA		
	Less than 100,000	50	19.1
	110,001-120,000	99	37.8
	120,001-130,000	113	43.1
	BED		
	Less than 100,000	50	19.1
	110,001-120,000	99	37.8
	120,001-130,000	113	43.1
	BA		
	Less than 100,000	50	19.1
	100,001-110,000	99	37.8
	110,001-120,000	113	43.1
	LLB		
	Less than 100,000	50	19.1
	120,001-130,000	99	37.8
	130,001-140,000	133	43.1

Source: Survey Data (2013)

4.4 Sustainable competitiveness among universities

One of the aims of this study was to compare sustainable competitiveness among private and public universities. Initially, ten higher education dashboard indicators were proposed to measure sustainable competitiveness. However, PCA extracted only six indicators which loaded highly on the construct.

This section analyses firstly, the prevailing differences in these indicators among respondents drawn from private and public universities. Secondly, the section reports t-test results of the null hypothesis that there is no difference in sustainable competitiveness between private and public universities.

4.4.1 Prevailing differences in sustainable competitiveness indicators among Private and Public Universities.

To assess differences in sustainable competitiveness among private and public universities, respondents were asked their perceptions on the six indicators measuring sustainable competitiveness. Responses were elicited on a 5-point scale ranging from 1-strongly disagree to 5-strongly agree. The variable sustainable competitiveness was then computed from the six items using mean. Results of the cross tabulation of the mean response scores across universities are presented in Table 4.11.

Results from the group means revealed that there was a difference in mean response scores between the private and public university samples on sustainable competitiveness. Public university (M=3.491, SD=0.879) performed better in sustainable competitiveness than the private university (M=3.099, SD=0.997). This implies that respondents from the public university perceived their university to be scoring highly in all the six indicators measuring sustainable competitiveness as compared to the respondents in the private university.

Table 4.11: Perceived Sustainable Competitiveness and Resource Characteristics in Private and Public Universities

Group Statistics

	University	N	Mean	Std. Deviation	Std. Error Mean
Sustainable competitiveness	Private	114	3.097	.997	.094
	Public	148	3.491	.879	.072
Resource value	Private	114	3.214	1.176	.110
	Public	148	3.688	.969	.079
Rarity of resource	Private	114	3.155	1.042	.098
	Public	148	3.653	.983	.081
Resource inimitability	Private	114	2.997	1.055	.099
	Public	148	3.506	.946	.078
Resource non-substitutability	Private	114	3.055	1.002	.094
	Public	148	3.578	1.006	.082

Source: Survey Data (2013)

4.4.2 Testing the hypothesis that there is no difference in sustainable competitiveness between private and public universities.

Since there were only two levels of comparison (public and private universities), independent samples t-test was the preferred test for the proposed hypothesis. The first hypothesis of this study stated that there is no difference in sustainable competitiveness between private and public universities. Using an alpha level of .05, independent samples t-tests indicated a significant difference in sustainable competitiveness {t (260) =3.380, $p<0.05$}between the private and public universities. And that public university was perceived to be better in sustainable competitiveness than the private universities.

These results therefore mean that all the six indicators of sustainable competitiveness were significantly different in public and private universities. They include: that public university departments had journals that were produced more regularly than did the private universities; that public universities recognize publications published in selected

stature of journal or publishers more than do the private universities; that the alumni of the public universities offer both financial and moral support to the universities initiatives more that those from private universities; that public universities experiences lower staff turnover as compared to the private university; that the public university trains its employees regularly in their area of specialization as do the private universities and that public universities receive donations either in monetary terms or books more than do the private universities.

Table 4.12: Results of Independent Sample 't' Test Comparing Sustainable Competitiveness and Resource Characteristics in Private and Public Universities

		T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Sustainable Competitiveness	Equal var-assumed	3.380	260	.001	.3928	.116
	Equal var- not assumed	3.322	224.14	.001	.3928	.118
Resource value	Equal var-assumed	3.577	260	.000	.4741	.133
	Equal var- not assumed	3.483	214.05	.001	.4741	.136
Rarity of resource	Equal var-assumed	3.954	260	.000	.4978	.126
	Equal var- not assumed	3.923	233.67	.000	.4978	.127
Resource inimitability	Equal var-assumed	4.107	260	.000	.5096	.124
	Equal var- not assumed	4.046	226.47	.000	.5096	.126
Resource non-substitutability	Equal var-assumed	4.178	260	.000	.5234	.125
	Equal var- not assumed	4.180	241.87	.000	.5234	.125

Source: Survey Data (2013)

4.5 Drivers of sustainable competitiveness

The second hypothesis stated that there is no significant difference between the resource characteristics in private and public universities in Kenya. The study highlighted a number of major forces likely to impact on sustainable competitiveness among universities. These forces revolved around four key drivers of sustainable competitiveness among universities. These drivers were identified as the resource characteristics inherent in these universities. Indeed, according to the resource based view (RBV), the resources possessed by an entity are the primary determinants of its performance, and may contribute to a sustainable competitive advantage of the entity (Barney, 1991). They include: resource value, rarity, inimitability and non-substitutability.

4.5.1 Value of the Resources

According to Barney (cited in Foss (2005), resources are valuable when they help seize an opportunity in the ventures environment or when they help neutralize some threats in the environment, or at least shield the venture against threats. Consequently, value of resources was measured using thirteen indicators. PCA extracted nine indicators loading highly on value of resource. Respondents were asked to state their opinion regarding the nine indicators of resource value as practiced in their departments. Responses were once again elicited on a 5-point scale ranging from 1-strongly disagree to 5-strongly agree.

Results of the cross tabulation of mean response scores of private university against public university (Table 4.11) indicated that public universities tended to outperform private universities in resource value. Mean response scores for respondents drawn from

public universities (M=3.688, SD=0.969) were higher than those of respondents drawn from private universities (M=3.214, SD=1.176).

To test the hypothesis that there is no difference in value of resources between private and public universities, an independent sample 't' test was conducted. Results of the t-test revealed significant difference in resource value {t(260)=3.577, p<0.01} between private and public universities.

The results regarding value of resources indicate that private and public universities differ significantly on the value of resource characteristic. Public universities produce graduates who end up getting employed in prestigious organizations. In addition, they show more willingness to organize social responsibility programs for improving the society and are more proactive in engaging alumni through organized forums.

Results further revealed that public universities organize research seminars more frequently compared to private universities. Besides, they employ very competent lecturers across departments and that lecturers in the public university are free and approachable than those in the private university.

4.5.2 Rarity of Resource

Although public universities were found to have an edge over private universities, Barney and Zajac (1994) noted that any company would not achieve competitive advantage as a result of owning a valuable resource only. It was therefore necessary to compare the two institutions in terms of rarity of its resources.

In line with Barney's (1991) VRIN framework, a resource was considered to be rare in the sense that it was scarce relative to demand for its use or what it was likely to produce.

In this regard, seven indicators were originally proposed to measure rarity of resources. PCA extracted all the seven indicators which were segregated into two factors. Respondents were asked to tick against the given statement to indicate their opinion about rarity of resources found within their departments.

Results of the comparison of mean response scores on the rarity indicators (Table 4.11) revealed that the average mean response scores for respondents drawn from public universities were higher than mean response scores for the private university respondents. More precisely, the mean response scores for the public university sample was (M=3.653, SD=0.983) while the mean response scores for the private university sample was (M=3.155, SD=1.042).

The t-test results on the significance of the observed differences in rarity of resources between the two institutions (Table 4.12) further revealed that resource rarity was significantly different{t (260) =3.954, $p<0.05$}.

These results indicate that public universities tend to have an edge in terms of rarity of resources in comparison with private universities. This is more so considering that most of the public universities have been in existence longer that private universities. Consequently, public universities have been able to stock their libraries with a variety of books tailored for their unique programs. Besides, most public universities were built on expansive space which has provided a conducive environment for learning. In addition, departments in public universities have existed for a longer time and have gained valuable experience in designing unique programs tailored for the market. Public

university staffs also use their extracurricular talents to help students and also they have patented their innovations.

4.5.3 Inimitability of Resource

Considering that public universities were found to have an edge over private universities in terms of value and rarity of resources, it was necessary to compare the two institutions with respect to inimitability of resources. This was based on the premise that when valuable and rare resources are imitable, potential for competitive advantage would disappear since competitors would copy them.

Inimitability of resources was originally measured using eleven items. PCA extracted ten items which accounted for 69.6% of the variance in inimitability of resources. Respondents were asked to indicate their opinion about inimitability of resources in their respective universities. Once again, responses to the items were elicited on a 5-point scale ranging from 1-strongly disagree to 5-strongly agree.

Comparing the mean response scores with regards to inimitability of resources between the two universities, results displayed in Table 4.11 revealed that the mean response scores for the public university sample (M=3.506, SD=0.946) was higher than that for the private university sample (M=2.997, SD=1.055). This implies that according to the respondents, public universities have taken better steps of ensuring that their resources cannot easily be imitated. Differences were observed in the following items:

The competence of the department employees cannot be copied; the number of years of experience gained by departments cannot be copied, methods of content delivery changes with technological changes; and values and beliefs held by departments cannot be copied

by competitors. In all these items, public universities were found to have a higher mean response score. This could possibly be attributed to the unique historical conditions, , organizational culture, causal ambiguity and social complexities that have been gained by those institutions and which tends to make their resources to be hard to copy.

On testing the hypothesis that there is no significant different in inimitability between public and private universities, results revealed high significant differences in resource inimitability {t (260) = 4.1.7, $p<0.01$} between public and private universities.

In all these indicators, high significant differences were observed with public university having an edge over the private university. The observed performance of public universities with regards to inimitability of their resources may be attributed to their unique historical conditions, organizational culture, unique processes and procedures and social complexities. Trust and value systems as noted by Jarvenpaa, Shaw and Staples (2004) in their study on the role of trust in global virtual teams are time dependent. In their assertion, benefits that a team gains from being trustful tend to be long term, and conversely, the benefits of acting in an untrustworthy manner are generally short term. It is with these arguments in mind that public universities which have been in existence longer have managed to develop a trust and value system that may not be imitated. Besides, the longevity of existence of public universities justifies the observed differences with regards to inimitability experience and competence of employees in these public universities.

4.5.4 Non substitutability of Resources

According to Barney's (1991) VRIN Framework, resources should not be able to be replaced by other strategically equivalent valuable resources. When resources are

substitutable, they cease to be sources of sustained competitive advantage. Public and private universities were consequently compared in terms of steps taken to ensure that their resources were non substitutable.

Non substitutability of resources was measured using two indicators. Respondents were asked to indicate by ticking appropriate response scores, their views regarding non substitutability of resources in their respective universities.

Results (Table 4.11) revealed that respondents drawn from public universities appeared to agree that programs developed in the department cannot be replaced by other programs from other institutions and that lecturers competencies cannot be replaced by others and the same output expected (M=3.58, SD1.006). On the contrary, respondents drawn from private universities scored lower on resource non-substitutability (M=3.055, SD=1.002). This would mean that most of the respondents were not sure about the two statements on resource non-substitutability, indicated by the mean of 3.055.

On further testing whether the observed differences were significantly, the t-test results revealed that the difference observed in resource non-substitutability was statistically significant {$t(260) = 4.178$, $p<0.01$} (Table 4.12).

The implication of these findings is that public universities have managed to harness non substitutability of their resources by designing programs tailored to the needs of the market. Besides, lecturers' competencies have adequately been addressed through regular training programs within and outside the universities.

The second hypothesis which states that there is no significant difference in resource characteristics between private and public universities is therefore rejected in accordance to the findings above.

The main aim of this study which was the third hypothesis stated that resource characteristics have no effect on sustainable competitiveness of an institution with regard to public and private universities. In this regard, hierarchical multiple regression analysis was used. Hierarchical regression was used in order to control for cost of programs, location and age of the university, all of which were thought to have an effect on sustainable competitiveness. On the other hand, multiple regression was necessary so as to explore the effect of each resource characteristic on sustainable competitiveness at a time while controlling for the others.

In order to conduct the analysis, first the control variables of cost, location and age were entered in step 1. This was then followed by entering the four resource characteristics in step 2. Change in R^2 was assessed to establish the exact contribution of resource characteristics on sustainable competitiveness when cost, location and age of institution were controlled. The model summary results are presented in Table 4.13 below.

Table 4.13:Model Summary

Model					Change Statistics					
	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.210[a]	.044	.037	.93243	.044	6.001	2	259	.003	
2	.840[b]	.705	.698	.52207	.661	142.801	4	255	.000	2.097

a. Predictors: (Constant), Institutional setting, Age of institution

b. Predictors: (Constant), Institutional setting, Age of institution, Resource value, Resource non substitutability, Rarity of resource, Resource inimitability

Results presented in Table 4.13 indicate that the R^2 value for the control variables was 0.044 which implies that the control variables accounted for only 4.4% of the variance in sustainable competitiveness. On entering the four resource characteristics, the R^2 value jumped to 0.705. This amounted to an R^2 change of 0.661 and implies that the four resource characteristics accounted for 66.1% of the variance in sustainable competitiveness.

Results of the hierarchical regression analysis of sustainable competitiveness on resource characteristics are further presented in Table 4.14 below.

Results indicate that none of the control variables entered in step 1 was a significant predictor of sustainable competitiveness. On the contrary, resource value ($\beta=0.360$, $p<0.01$); rarity of resource ($\beta=0.434$, $p<0.01$); and resource inimitability ($\beta=0.166$, $p<0.05$) were found to be positive and significant predictors of sustainable competitiveness. Besides, the magnitudes of the t-values for rarity of resources ($t=8.727$) and resource value ($t=6.020$) show that the two are the main predictors of sustainable competitiveness among institutions of higher learning in that order.

Table 4.14: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	2.248	.622		3.618	.000		
	Age of institution	.231	.299	.129	.774	.440	.133	7.497
	Institutional setting	.163	.318	.085	.513	.608	.133	7.497
2	(Constant)	.119	.360		.331	.741		
	Age of institution	.192	.168	.107	1.145	.253	.133	7.532
	Institutional setting	-.204	.179	-.106	-1.137	.256	.132	7.555
	Resource value	.315	.052	.360	6.020	.000	.323	3.099
	Rarity of resource	.398	.046	.434	8.727	.000	.467	2.143
	Resource inimitability	.154	.063	.166	2.444	.015	.249	4.010
	Resource non substitutability	-.039	.050	-.042	-.781	.435	.393	2.543

a. Dependent Variable: Sustainable competitiveness

Resource non-substitutability (β=-0.042, $p>0.05$) was found not to significantly predict sustainable competitiveness among institutions of higher learning.

The researcher therefore modeled sustainable competitiveness as follows:

Sustainable competitiveness =0.360value of resource +0.434rarity of resource +0.166inimitability of resource - 0.042 non-substitutability of resource

These results imply that when other resource characteristics are held constant, an increase of 1 standard deviation in value of resource will result in an increase of 0.36 standard deviations in sustainable competitiveness. Similarly, when other resource characteristics are held constant, an increase of 1 standard deviation in rarity of resource results in an increase of 0.434 standard deviations in sustainable competitiveness. Also, an increase of 1 standard deviation in inimitability of resource is likely to result in a 0.166 standard deviations in sustainable competitiveness when other resource characteristics are held constant.

To detect for multicollinearity, tolerance levels and Variance Inflation factor (VIF) were used. A VIF of 10 and more and a tolerance level of 0.1 and below have been used as the rules of thumb to indicate serious multicollinearity (O'brien (2007). The results of this hierarchical multiple regression indicate VIFs of less than 10 and tolerance levels of more than 0.1. This indicates that the multicollinearity rule of thumb was not defied. However, the hierarchical multiple regression omitted one control variable (cost of program). This can be as a result of it (cost of programs) being collinear with some of the predictor variables.

CHAPTER FIVE: DISCUSSION AND SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Overview

This chapter presents the discussions of findings of the study in line with the research objectives; conclusions drawn from the findings and the implications and recommendations of the study.

5.1 Discussion of the Study Findings

This section provides a discussion of the study in line with the objectives relative to existing literature.

5.1.1 Comparing Sustainable Competitiveness between private and public Universities

This study sought to establish the effect of resource characteristics on sustainable competitiveness in private and public universities in Kenya. In this regard three specific objectives were used. One of the objectives was to compare sustainable competitiveness in private and public universities; to compare resource characteristics in public and private universities and to establish the effect of resource characteristics on sustainable competitiveness.

The first objective of the study was to compare the level of sustainable competitiveness in public and private universities. Sustainable competitiveness in this study was measured using five constructs: teaching/learning, research, outreach, workplace satisfaction and finance. By comparing the mean response scores on indicators of sustainable competitiveness, the study established that there was a difference in prevailing levels of sustainable competitiveness among the two categories of institutions. The public university's mean was higher than that of the private university in sustainable

competitiveness. The ‘t’ test results further revealed that the there as a significant difference in sustainable competitiveness between the two categories of universities.

The finding that there is a difference in sustainable competitiveness between private and public universities is constistent with Materu (2007). In this regard, Materu (2007) found out that public universities put a lot of emphasis on the quality of research outputs at their universities and that they used it as a variable in their ranking systems. This therefore indicates that public universities put a lot of importance on research quality and output. Materu (2007) goes on to argue that although public universities regard highly the quality of research produced at their university, they do not make available this information to the public.

The other construct that was used to measure sustainable competitiveness apart from research, was teaching and learning. According to (Del Ray and Romero, 2004) private institution optimally chooses to provide an educational quality lower than the one provided publicly. This result may be explained by the different strategies followed by institutions when competing for students. On the one hand, the public university is able to behave as a monopoly by means of setting admission standards and a zero tuition fee. On the other hand, the private university’s admission policy, based on tuition fees, makes this institution attractive just to those students of lower ability who are not accepted into the public university and can afford to pay the private fee.

Buzinbabbe (2000); Nhundu and Moanakwena (2008) and Gudo *et al* (2011) found out that student application and enrollment in the public university was very high as compared to that of the private university. Their finding concurs with this study’s

findings that public universities are more superior in sustainable competitiveness as compared to private universities.

Ekundayo and Alonge (2011) in their study "Human and Material Resources as Correlates of Academic Performance of Private and Public secondary school Students in Ondo State, Nigeria" also differ in their findings. Although they used similar analytical technique (t –test) to the one used in this study, their findings revealed that there is a significant difference in sustainable competitiveness of public and private institutions. They found out that private institutions had better academic performance than the public institutions. This contradicts this study whose results indicate that public universities performed better in sustainable competitiveness. This could be explained by the parameters used to predict sustainable competitiveness. Ekudanyo and Alonge (2011) only tested two resources (human and material) as predictors of sustainable competitiveness while this study tested four resource characteristics as predictors of sustainable competitiveness. Resources could be similar in both the institution, the only difference comes in their characteristics, which later is able to derive sustainable competitiveness.

In regard to workplace satisfaction which was the third indicator of sustainable competitiveness, (Dzvimbo 2006; Gudo *et al*, 2011 and Bunoti 2011) contradict with this study's findings stating that remuneration of the teaching and non teaching staff at public institutions of higher education is far below the living wage. Given the cost of living the academic staff take up extra hours of teaching load, teach at other private universities, or engage in other money making activities to "make ends meet" at the expense of the quality of the service they ought to offer. Poor remuneration results in brain drain, which

is the international migration of skilled human capacity which is common and a symptom of deeper problems in Africa and developing countries in general.

Mpata (2010) indicates that because of low morale and lack of job satisfaction, staff in public higher education institutions that have alternative employment opportunities consider leaving and it is the best employees who often have the most opportunities. Therefore widespread dissatisfaction can cause dysfunctional turnover; the best employees moving on and the worst staying on and engaging in other forms of withdrawal behavior. In the worst scenario the better employees go to work to the company's competitors. In addition to the loss of time and money the institution has invested in the disgruntled employees, they may also take sensitive information with them to their new jobs. The teaching staff for instance have been said to be duplicating the curricula for upcoming universities

Dvizimbo (2006) and Mpaata (2010) contradicting findings can be explained by the research technique and further the data collection methods applied. Both authors used qualitative research and collected data using interview schedules and focused group discussions. These contradictions in findings can also be explained by the effort of the trade unions in negotiating for better pay and better welfare of the staff at the public universities. These negotiations have recently yielded to increased pay and better leaving conditions. The contradiction on reduced employee morale can be attributed to security of tenure offered by the public universities to its employees as compared to private university employees.

The other indicator of sustainable competitiveness that was tested was outreach and public service. Result indicated that the public university had an alumni association that

offered support to the organization more as compared to private university. This contradicts Prof. Odhiambo's (2005) study on advancing the quality of higher education through internationalization. His findings indicate that private universities maintain current databases of their alumni who endow academic chairs, provide scholarships or help the university in different capital development projects. This contradiction could be explained by the analytical techniques used. Odhiambo (2005) used descriptive statistics only to explain his findings without applying inferential statistics.

This contradiction could be attributed to the rigor of the alumni associations in public universities. Although the public universities for alumni associations, their activities are not felt the by neither the university nor the current students.

The last indicator of sustainable competitiveness tested was finance. Public university (Del Rey and Romero, 2004) has an exogenous budget that allows it to cover the costs of educating any chosen number of students. This budget comes from the government and is funded out of general taxation. The fact that the public university is not subject to budgetary constraints means that there are no capacity constraints in the public sector. If we instead consider that the budget at the disposal of the public university is fixed, the choice of the admission standard would be trivial since the number of students that the university can admit is determined by this budget. Del Ray and Romero (2004) therefore concur with this study's findings that public universities are more superior in sustainable competitiveness as compared to the private university.

5.1.2 Comparing Resource Characteristics between Private and Public Universities

The second objective sought to compare resource characteristics in private and public universities. Resource characteristics were classified as Value, rarity, inimitability and non-substitutability. The study found out that the mean response scores for respondents

drawn from public universities were higher than for those drawn from private universities. This implies that public universities posses resources that are superior to those in private universities in terms of value, rarity, inimitability and non-substitutability. Further, the 't' test results confirmed this superiority by showing statistically significant differences in all the indicators measuring the four resource characteristics. This finding contradicts Bunoti (2011) in her study on the quality of higher education in developing countries. Bunoti (2011) found out that public universities posses resources that are inferior to those in private universities in terms of value, rarity, inimitability and non-substitutability.

In resource value for example, Bunoti (2011) noted that lecturers in public universities are not approachable and that they meet students only during lecture time and therefore students cannot obtain guidance and counseling or other forms of support. She adds on to say that the lecturers in the public universities are not highly qualified and that very few hold PhD's apart from those at top management level. These contrasting findings could be explained by the approaches to research used. Bunoti's study was purely qualitative that utilized the following data collection methods such as focus group discussion, in-depth interviews and document analysis while this study was purely quantitative where data was collected by use of questionnaires only. This could explain the difference in findings. The difference in findings could also be attached to the increasing number of student: lecturer ratio. This rising student numbers makes the lectures not have a one-on-one with his students.

Resource rarity measured difference in unique resource between public and private. Bunoti (2011) and Gudo *et al* (2011) again contradict with this finding that public

universities have more superior unique resources than private universities. According to both authors the public university library has no unique book and also the programs offered at the public universities are not unique. Bunoti (2011) and Gudo *et al* (2011) found out that the library at public universities for example is not modern, is not well stocked and that majority of the books are outdated.

Bunoti (2011) also adds that the lecture rooms in public universities are too small for the number of students and have insufficient seats. She also found out that the lecture rooms are not sound proof. Her study further revealed that the lecturer: Student ratio is overwhelming. The difference in findings can also be explained by the difference in methodological approach to research (qualitative versus quantitative). The programs offered by public universities are not unique (Kasozi, 2006) rather they are more theoretical and irrelevant to the job market. Mamdani (2007) also concurs with Kasozi that universities are duplicating courses for the sake of generating income. These contradicting findings can be explained on the basis of the target population. Kasozi (2006), Mamdani (2007) and Bunito (2011) all targeted students and staff while this study targeted only the staff of the universities. These differences in findings can be due to duplication of courses by the newly established universities from the older universities. The public universities are also not meeting the needs of their increasing student population. This therefore means that they continue to use the old lecture halls that were meant for small student numbers for the current large student numbers.

Resource inimitability measured the ability of the resources not to be easily copied while resource non-substitutability measured the ability of the resource not to be replaced. Results indicated that public university posses superior inimitable resources as compared

to the private universities. This finding concur with Mamdani's (2007) findings which state the universities are duplicating courses. That is the courses are easy to copy. The contradiction can be linked to the universities inability to adapt measures of how to protect their academic programs from being accessed and duplicated by their competitors. These two resource characteristics (resource inimitability and non-substitutability) however have very limited literature that has been documented.

5.1.3 The Effect of Resource Characteristics on Sustainable Competitiveness

The main objective of this study was to establish the effect of resource characteristics on sustainable competitiveness. Using multiple regression analysis and controlling for institutions age, location and program cost, the study established that resource value (β=0.360, t=6.020, $p<0.01$), rarity of resource (β=0.437, t=8.727, $p<0.01$) and resource inimitability (β=0.166, t=2.444, $p<0.05$) were significant predictors of sustainable competitiveness. In addition, the magnitude of the 't' values for rarity and value indicated that they are the main predictors of sustainable competitiveness in that order.

These findings concur with Talaja (2012) in her study "Testing VRIN Framework: Resource Value and Rarity as sources of Competitive Advantage and above average Performance" .Her findings indicate that VRIN framework (valuable, rare, imperfectly imitable and not substitutable resources) have the potential for creating sustainable competitive advantage. Talaja's (2012) findings revealed that valuable resources ensure the survival of the company and enable it to achieve competitive parity in the industry in which it operates. If a company fails to exploit valuable resources, it will have the competitive disadvantage. If the resource that a company possesses is not valuable, then it will not allow the company to choose and implement strategies that exploit

opportunities and neutralize threats from the environment. Such resources are considered as weaknesses.

Newbert (2008) also concurs with this finding that resource value and rarity are predictors of sustainable competitiveness. Newbert (2008) found out that value and rareness are related to sustainable competitiveness. He also pointed that there is a paucity of conceptual-level studies, particularly with respect to characteristics of value and rareness. Talaja (2012) also agree with this finding. She indicated that valuable resources that are not rare cannot be the sources of the competitive advantage. To achieve the competitive advantage, resource must be valuable and rare. However, this does not mean that valuable resources that are not rare are irrelevant to a company.

Talaja (2012), Resources are imperfectly imitable if competitors cannot obtain them on a particular market. If there is no other resource that could be used as an adequate and worthy replacement for the existing resource, existing resources are not substitutable. It is stressed that the value and rarity of resources are necessary conditions for achieving competitive advantage. However, for achieving sustainable competitive advantage, resources also have to be imperfectly imitable and not substitutable. Foss and Knudsen (2003) reflect on Barney's classification of VRIN conditions, and state that there are the only two necessary conditions for achieving sustainable competitiveness: uncertainty and immobility.

On resource non-substitutability, the study findings conclude that it is not a predictor of sustainable competiveness. This finding is in agreement with Markman, *et al* (2004), who came to the conclusion that competitive advantage is related to inimitability, but not substitutability.

5.2 Summary of Hypotheses Testing Results

The results of the hypotheses testing are presented in Table 5.1.

Hypothesis $H0_1$: There is no significant difference in sustainable Competitiveness between Private and Public Universities. The results indicated that there was a significant difference in sustainable competitiveness between private and public universities (t=3.380). This implies that the hypothesis was rejected. The group means indicated that the public university performed better on sustainable competitiveness than the private university.

Hypothesis Ho_2: There is no significant difference in resource characteristics between private and public universities.

Ho_{2a}: There is no significant difference in resource value between private and public universities. Results indicated that there was a statistical significant difference in resource value between the public and private university (t=3.577). This means that the hypothesis was not supported. The group means indicate that public universities posses more valuable resources as compared to the private university.

Ho_{2b}: There is no significant difference between rarity of resource in private and public universities. Results indicated that there was a statistical significant difference in resource rarity between the public and private university (t=3.954) This implies that the hypothesis was not supported. The group means indicated that resources of public universities were more rare (not easy to acquire) as compared to those of the private university.

Ho_{2c} : There is no significant difference in resource inimitability between private and public universities. Results indicate that there is a statistical significant difference in resource inimitability between private and public universities (t=4.107). this implies that the hypothesis was not supported. The mean scores depict that resources of public universities were more complex to copy as compared to those of private universities.

Ho_{2d}: There is no significant difference in resource non-substitutability between private and public universities. Results showed that there was a statistical significant difference in resource non-substitutability between private and public universities (t=4.178). This therefore means that there was a difference between private and public universities in relation to possession of resources that are non-substitutable. The group means depict that public universities scored higher in terms of possession of non-substitutable resources than the private university.

Ho_3: Resource characteristics have no effect on sustainable competitiveness of an institution, controlling for Institutions age, location and its program costs

None of the control variables was a significant predictor of sustainable competitiveness. The standardized coefficient of 0.360 and a t-value of 6.020 indicate a significant effect of resource value on sustainable competitiveness. This implies that when other resource characteristics are held constant, an increase of 1 standard deviation in value of resource will result in an increase of 0.36 standard deviations in sustainable competitiveness. The hypothesis was therefore not supported. This confirms that value of resources affects sustainable competitiveness of an institution.

The standardized coefficient of 0.434 and a t-value of 8.727 show a significant effect between resource rarity and sustainable competitiveness. This means that the hypothesis was not supported by the data. The coefficient of 0.434 implies that an increase of 1 standard deviation in rarity of resources will result in an increase of 0.434 standard deviation in sustainable competitiveness. This also confirms that rarity of resources predicts sustainable competitiveness.

The standardized coefficient of 0.166 and a t-value of 2.444 indicate a significant effect between inimitability of resources and sustainable competitiveness. This means that the hypothesis was not supported by the data. The coefficient of 0.166 indicates that an increase of 1 standard deviation in resource inimitability results in an increase of 0.166 standard deviation in sustainable competitiveness. This also confirms that resource inimitable predict sustainable competitiveness. Resource non-substitutability was found not to significantly predict sustainable competitiveness in universities.

Table 5.1 Summary of Findings of Hypotheses

	Hypothesis	β, (t-Value)	Result
Ho_1	There is no significant difference in sustainable competitiveness between Private and public universities	t= (3.380)	Not Supported
Ho_{2a}	There is no significant difference in resource value between private and public universities.	t= (2.577)	Not supported
Ho_{2b}	There is no significant difference in resource rarity between private and public universities	t= (3.954)	Not supported
Ho_{2c}	There is no significant difference in resource inimitability between private and public universities	t= (4.107)	Not supported
Ho_{2d}	There is no significant difference in resource non-substitutability between private and public universities	t= (4.178)	Not supported
Ho_3	Resource characteristics have no effect on sustainable competitiveness of an institution, controlling for Institutions age, location and its program costs	β=0.360 t=6.020 β=0.434 t=8.727 β=0.166 t=2.444	Not supported
	Resource non-substitutability	β=-.042 t=-.781	Supported

Source: Survey Data (2013)

5.3 Conclusions

This study sought to establish the effect of resource characteristics on sustainable competitiveness. It builds on literature from empirical studies in areas of sustainable competitiveness in institutions of learning, quality of education, Resource based View and Balanced scorecard. Resource characteristics were classified according to the VRIN framework (value, rarity, inimitability and non-substitutability) while sustainable competitiveness is measured in terms of programs/courses, research, public service/outreach, workplace satisfaction and finance.

The first hypothesis that stated that there is no difference between sustainable competitiveness in public and private universities was not supported. The second hypothesis that stated that there is no difference in resource characteristic between private and public universities was not supported. The finding indicated that public university was more superior in resource characteristics than private university. The third hypothesis stated that resource characteristics had no effect sustainable competiveness. This hypothesis was also no supported, which indicated that resource characteristics (value, rarity and inimitability) were predictors of sustainable competitiveness except for resource non-substitutability.

This research concurs with Talaja (2012) whose findings indicate that resource rarity and resource value are the two major predictors of sustainable competitiveness. Resource inimitability was also a significant predictor though its effect was weaker as compared to resource rarity and resource value. The comparative approach indicated that there was a significant difference in sustainable competitiveness between private and public universities. That public university was more competitive as compared to the private university. This concurs with Materu (2007) on research quality; Del Ray & Romero (2004) on teaching and learning; Nhundu & Moanakwena (2008) and Gudo *et al* (2011) on student enrollment. This study's findings however contrast findings of Dzvimbo (2006); Bunoti (2011) and Gudo *et al* (2011) on workplace satisfaction. This could be due to the trade union activities that have led to increased pay packages for teaching and non- teaching staff at the public universities.

The other comparative measure was on resource characteristic between public and private universities. The study found out that public universities had superior resource

characteristics (value, rarity, inimitability and non-substitutability) as compared to private universities. This findings contrast the findings of Bunoti (2011) on the approachability of lecturers (resource value). This could be explained by the very large student: lecturer ratio which makes the lecturer unable to know the students at a personal level. This large student numbers also lead to increased lecturers workload in terms of marking.

The findings on resource rarity contradict the findings of Bunoti (2011) and Gudo et al (2011) on issues of unique programs, library books and lecturer rooms. These contradictions may be attributed to ease access of the library books and programs by other institutions. As much as public universities come up with unique programs, these programs later on find their way into the competitors hands. This leads to the variable resource inimitability which concurs Mamdani (2007) where private universities are not coming up with their original programs but rather opt to duplicate existing academic programs from public universities.

5.2.1 Theoretical Contribution

This study was informed by two theories; the Resource-based view (also known as the VRIN) framework and the Balanced Scorecard. The resource-based view (RBV), is one of the most widely accepted theories of sustainable competitiveness. it focuses on relationships between company's internal characteristics and competitive advantage (Spanos and Lioukas, 2001).

It is based on the assumption that companies within an industry are heterogeneous in terms of resources they control. Since resources may not be perfectly mobile, heterogeneity can be long lasting (Barney, 1991). According to Barney (1992, 1995) resources and capabilities include financial, physical, human and organizational assets

that a company uses to develop, manufacture and deliver products and services to customers. This study tested all the four resource characteristics (value, rarity, inimitability and non-substitutability) hypotheses at the conceptual level and provided evidence that resource value, rarity and inimitability are significant predictors of sustainable competitiveness. Resource non-substitutability was the only non-predictor of sustainable competitiveness. By empirically confirming these hypotheses from the VRIN framework, this study significantly contributes to Resource-based view.

The other theory that was used in this study was the balanced scorecard. The Balanced Scorecard relies on the concept of Strategy developed by Michael Porter (Kaplan and Norton, 1996). Porter argues that the essence of formulating a competitive strategy lies in relating a company to the competitive forces in the industry in which it competes. The scorecard translates the vision and strategy of a business unit into objectives and measures in four different areas: the financial, customer, internal business process and learning and growth perspective. The financial perspective identifies how the company wishes to be viewed by its shareholders. The customer perspective determines how the company wishes to be viewed by its customers. The internal business process perspective describes the business processes at which the company has to be particularly adept in order to satisfy its shareholders and customers. The organizational learning and growth perspective involves the changes and improvements which the company needs to realize if it is to make its vision come true. Ruben (1999) also came up balance scorecard for higher education that stipulates five constructs of sustainable competitiveness; programs, scholarships/research, public service/outreach, workplace satisfaction and finance. The

study tested all the five constructs of sustainable competitiveness and found out that there was no difference is sustainable competitiveness between private and public universities. By empirically confirming this hypothesis from the balanced scorecard of higher education, this study significantly contributed to this theory.

5.2.2 Managerial Contribution

The implication for the management profession includes emphasizing the importance of accumulating different types of resources that is, physical, human, organizational, intellectual and financial. Management needs to give attention to the characteristics (value, rarity and inimitability) of the resources they posses in order to enhance their ability to gain sustainable competitiveness. This means that they should accumulate and develop resources with characteristics that are superior to those of their competitors and that help them in exploiting opportunities and neutralizing threats that arise from the organizational environment.

5.2.3 Recommendations

Based on the findings of this study, the following recommendations are offered to improve sustainable competitiveness in universities: Universities should strive to ensure that they accumulate resources with VRI characteristics (value, rarity and inimitability). The accumulation of these resources will most likely lead to the universities attaining sustainable competitiveness. This study finding indicated that resource value, rarity and inimitability are significant predictors of sustainable competitiveness.

This study also recommends that private universities should put measures to ensure that their physical, human, intellectual and financial resources are valuable, rare, and inimitable for them to attain sustainable competitiveness. This study revealed that public

universities had more superior resource characteristics as compared to those of private universities.

5.2.5 Further Research

This study makes a contribution to the knowledge and literature on the effects of resource characteristics on sustainable competitiveness in the service sector. This study compared one private and one public university in Kenya. The findings of this study indicate that resource characteristics (value, rarity and inimitability) are significant predictors of sustainable competitiveness. Therefore, for a further research on this theme, the researcher suggests a comparative research covering multiple organizations from other service sectors such as hotels, hospitals banks including universities.

This study collected data only form the staff of the university, it is therefore recommended that further research should be undertaken where data is collected from both the staff, students and alumni of the universities on the effect of resource characteristics on sustainable competitiveness. This will help to reduce the biasness as there is likelihood that staff of a university will want to talk good about their institution.

This study also found out contrasting findings from other authors who used purely qualitative research methods. This study was purely quantitative. It is therefore recommended that a mixed method approach (qualitative and quantitative) be used in future researches on the effects of resource characteristics on sustainable competitiveness. This will help to get a clear picture of this effect.

REFERENCES

Acquaah, M.; Chi, T. (2007), A longitudinal analysis of the impact of firm resources and industry characteristics on firm-specific profitability, *Journal of Management and Governance*, 11: 179-213

Aghion, P, Dewatripont, M, Hoxby, C, Mas-Colell, A, and A. Sapir (2010), "The Governance and performance of Universities: Evidence from Europe and the US", *Economic Policy*, Great Britain

Amit R., Schoemaker P., (1993), 'Strategic assets and organizational rent', Strategic *Management Journal*,14: 33-46

Altbach, G. P. (2006) *The Private Higher Education Revolution: An Introduction*. Kampala: NCHE.

Andrews, K.R. (1980) *The Concept of Corporate Strategy*, Revised, Homewood: Irwin.

Astin, A. W. (1993) *What Matters in College?* San Fransico: Jossey-Bass.

Aziz, A.; Elezi, Z. and Mazreku, A. (2013) Competition Between public and Private Universities: international Experiences and Case of Macedonia, *Journal of Education and Instructional Studies in the World*

Bailey, T., Cloete, N. and Pillary, P. (2007) Case Study: Kenya and University of Nairobi, *Universities and Economic Development in Africa*

Barney, J.B., (1986a), Strategic Factor Markets: Expectations, Luck and Business Strategy.*Management Science*,42: 1231-1241

Barney, J.B., (1986b), Organizational Culture: Can It be a Source of Sustained Competitive Advantage? *Academy of Management Review*,42: 1231-1241

Barney, J. B. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17: 99-120

Barney, J. B. (1992), Integrating Organizational Behaviour and strategy Formulation Research: A Resource Based Analysis, *Advances in Strategic Management*,8: 38-59

Barney, J. B. (1995), Looking inside for competitive advantage, *Academy of Management Executive*, 9: 49-61

Barney, J .B. (1996) The resource-based theory of the firm. *Organization Science*

Barney, J.B., (2001), Is the Resource-Based Theory a Useful Perspective for Strategic Management Research? Yes. *Academy of Management Review*,26: 41-56

Barr, N. (2004) *The Economics of the Welfare State* (4th Edition). Oxford: Oxford University Press.

Blaikie, N. (1993), *Approaches to Social Enquiry*, 1st ed, Cambridge :Polity Press,

Blanke J., Crotti R. Drzeniek H.M., Fidanza B. & Geiger T. (2011) The Long-Term View:Developing a Framework for Assessing Sustainable Competitiveness: *World Economic Forum*

Boroah, V. (1994), "Modeling Institutional Behavior: a Microeconomic Analysis of University Management", *Public Choice*,81: 101-124

Brancato, C. K. (1995) *New Corporate Peformance Measures*. New York :The Conference Board

Braskamp, L.A. and Ory, J. C. (1994) *Assessing Faculty Work*. San Fransisco: Jossey-Bass.

Brewer, D. Gates, S. M., and C. A. Goldman (2002) *In Pursuit of Prestige: Strategy and Competition in US Higher Education*. New Brunswick, NJ: Transaction Press.

Brush, C., Greene, P. G., and Hart, M. M. (2001) Frominitial idea to Unique Advantage: The Entrepreneurial Challenge of Constructing a Resource Base. *Academy of Management Executive*

Bryson, J. M, Ackermann, F and Eden, C. (2007) Putting the Resource-Based View of Strategy and Distinctive Competencies to Work in Public Organization. *Public Administration Review*

Buckley, P.J. and Casson, M. (1976) The Economic Theory of Foreign Investment. *Economics*

Bunoti, S. (2011) *The Quality of Higher Education in Developing Countries Needs Professional Support.* Kampala, Uganda

Bygrave,W. (1992) *Venture Capital Returns in the 1980s: The state of the Art of Entrepreneurship.* Boston.

Caves, R. E. (1984*) Industrial Organization, Corporate Strategy and Structure: Competitive Strategic Management.* New York : Prentice-Hall,

Centre on Education Policy (2007) *Are Private High Schools Better Academically than Public High Schools?* Washington D.C.

Chandler, G. N., & Hanks, S. H. (1994) Market Attractiveness, Resource-based Capabilities, and Venture Performance. *Journal of Business Venturing*

Chmielewski, D. A.; Paladino, A. (2007) Driving a Resource Orientation: Reviewing the Role of Resource and Capability Characteristics, *Management Decision,* 45(3): 462-483

Clarke, G (1997) "Reassessing Resource Allocation Strategies in Higher Education: Methods of Analysis", *International Journal of Education Management,* 79 (3): 3-9

Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education*. New York :Routledge.

Collis, D. J., C. A. Montgomery. 1998. *Corporate Strategy: A Resource-Based Approach*. Boston: McGraw-Hill,

Conner, K. R. (1991) 'A Historical Comparison of Resource- based Theory and Five Schools of Thought, Within Industrial Organizational Economics: Do We Have a New Theory of the Firm?' *Journal of Management,* 17: 121-154

Conner, K.R.; Prahalad, C.K. (1996), A Resource-Based Theory of the Firm: Knowledge versus Opportunism. *Organization Science,*7(5): 477-501

Cooper, A. C., Gimeno-Gascon, F. J. and Woo, C. Y. (1994) Initial Human and Financial Capital as Predictors of New Venture Performance. *Journal of Business Venturing*,9(5): 371-395

Creswell, J. W. (2003). *Research Design: Qualitative, Qualitative and Mixed Methods Approaches.* London.:Sage Publication Thousands Oaks.

Commission of University Education website: www.cue.or.ke

Cullen, J., Joyce, J., Hassall, T. and Broadbent, M. (2003) "Quality of Higher Education: from Monitoring to Management", *Quality Assurance in Higher Education,* 11(1)30-34

Day, C. S. (1994) The capabilities of Market-driven organizations. *Journal of Retailing*, 58 (4) 37-52

Deeds, D.L., DeCarolis. D., and Coombs, J.E. (1997) Dynamic capabilities and new product development in high technology ventures: An empirical analysis of new biotechnology firms. *Journal of Business Venturing*

De Fraja, G. D. and Iossa, E. (2002) Competition among Universities and the Emergence of Insitutions. *Bulletin of Economic Research,* 54 (3): 275-293

Debande, O. and Demeulemeester, J. L. (1998), "Two-dimensional Competition between Institutions: an Application to Higher Education". *Mimeo, Université Libre de Bruxelles, Belgium*

Del Rey, E. (2001), "Teaching versus Research: a Model of State University Competition",*Journal of Urban Economics,* 49 (2): 356-373

Deming, W. E. (1993) The New Economics, Cambridge MA. *MIT Center of Advanced Engineering Study*

Dierkx, I. & Cool, K. (1989). Asset Stock Accumulation and Sustainability of Competitive Advantage. *Management Science*, 35: 1504- 1511

Dill, D. D. (2005) The Public Good, the public Interest and Public Higher Education. *Research Program on Public Policy for Academic Quality,* 14 (1): 21-35

Dollinger, M. J. 1995. *Entrepreneurship: strategies and resource.* Boston: ma Irwin

Drnevich, P. L.; Kriauciunas, A. P. (2011), Clarifying the conditions and Limits of the Contributions of Ordinary and Dynamic Capabilities to Relative Firm performance, *Strategic Management Journal*, 32 (254-279)

Dzvimbo P.K. (2006) *The International migration of skilled human capital from developing countries.* Kampala: NCHE.

Easterby-Smith, M., Thorpe, R. and Jackson, P. (2008), *Management Research,* 3rd ed, London: SAGE Publications Ltd.

Epple, D. and Romano, R. E. (1998) Competition between Public and Private Schools. *The American Economic Review,* 44:77-86

Ekundayo, H. T. and Alonge, H. O. (2011) Human and Material Resources as Correlates of Academic Performance of private and Public Secondary School Students in ONDO STATE, *European Scientific Journal,* 8(10):170-180

Eriksson, P. and Kovalainen, A. (2008), *Qualitative Methods in Business Research,* 1st ed, London: SAGE Publications Ltd.

Ewell, P. (1994) Developing Statewide Performance Indicators. *Education Commission of the States*

Finney, R., campell, N. and powell, C. (2005): "Strategies and Resources: Pathways to Success?" *Journal of Business Research,*58: 1721-1729

Foss, N. J. and Knudsen, T. (2003) A Resource-Based Tangle: Towards a Sustainable Explanation of Competitive Advantage, *Managerial and Decision Economics,* 24 (4):291-309

Foster, R. N. and Kaplan, S. (2001) Creative Destruction: Why Companies that are Built to Last Underperform the Market – and How to Successfully Transform them, *Crown Business*

Galunic, D. C., and Eisenhardt, K. M. (1994) Renewing the Strategy Structure-performance Paradigm. *Research in Organizational Behavior,* 16: 215-255

Galunic, D. C. and Rodan, S. (1998). Resource Recombinations in the Firm: Knowledge Structures and the Potential for Schumpeterian Innovation. *Strategic Management Journal,* 19 (12): 1193-1205

Garvin, D. (1980), *The Economics of University Behaviour,* New York : Academic Press.

Gay, L., Mills, G., & Airasian, P. (2006). *Educational Research: Competencies for Analysis and Applications.* New Jersey: Pearson Education.

Ghemawat, P. (1991) *Commitment: The Dynamic of Strategy,* New York: Free Press.

Grant, R. M. (2002) *Contemporary Strategy Analysis: Concepts, Techniques, Applications*. Oxford

Gudo, C. O; Oanda, I. O and Olel M. A (2011) Role of Institutional Managers in Quality Assurance: Reflections on Kenya's University Education. *Australian Journal of Business and Management Research,* 1(2): 113-124

Hafstrand, H. (2006) Competitive advantage in the Magazine Publishing Business: A Resource-based Perspective, *Nordicom Review*

Hair, J. F.; Anderson, R. E.; Tatham, R. L. and Black, W. C.(2005) , *Multivariate Data Analysis,* New Jersey: Prentice Hall,

Hitt, M., Irland, R. and Hoskisson, R. (2003): *Strategic Management: Competitiveness and Globalisation, ,* OH. South-Western : Cincinnati.

Hoopes, D.G.; Madsen, T.L.,; Walker, G. (2003) Guest Editors' Introduction to the Special Issue: Why is There a Resource-Based View? Toward a Theory of Competitive Heterogeneity *Strategic Management Journal,* 20: 837-865

Johnson, R. and Seymour, D. (1996) The *Baldrige as an award and Assessment Instrument for Higher Education.* Maryville MO: Prescott.

Juran, J. M., World War II and the Quality Movement. The Juran Institute. Re-printed in and Adapted form Ruben, B.D. (1995) *Quality in Higher Education*. New Jersey: New Brunswich,

Kaplan, R. S. and Norton, D.P. (1992) The Balanced Scorecard: Measures that Drive Performance, *Harvard Business Review, 70 (1): 71-79*

Kaplan, R. S. and Norton, D.P. (1993) Putting the Balanced Scorecard to Work, *Harvard Business Review,* 71 (1) 73-82

Kaplan, R. S. and Norton, D.P. (1996) Using the Balanced Scorecard as a Strategic Management System," *Harvard Business Review,* 74 (1) 75

Karanthanos, D. and Karanthanos, P. (2005) Applying a Balanced Scorecard to Education, *Journal of Education for Business*

Kasozi A.B.K. (2006) *The State of Higher Education 2005: Executive summary***.** NCHE

Kiganda, C (2009). East African Universities Vice Chancellors Urged to shift Students Roles to Centre and make the Partners and Responsible Stakeholders. *Inter-University Council for East Africa (IUCEA). Newsletter,* 39: 8-16

King, A.W. (2007). Disentangling Interfirm and Intrafirm Causal Ambiguity: A Conceptual Model of Causal Ambiguity and Sustainable Competitive Advantage. *Academy of Management Review,*22 (1): 75-99

Kothari, C. (2003) *Research Methods; Methods and Techniques* ; New Delhi: Eastern Ltd

Lado, A.A., Boyd, N. G. and Wright, P. (1992) A Competency-based Model of Sustainable Competitive *Advantage*: Towards a Conceptual Synthesis. *Journal of Management,* 18 (1): 77-91

Lawrence, S., & Sharma, U. (2002). Commodification of Education and Academic Labour - Using the Balanced Scorecard in a University Setting. *Critical Perspective on Accounting*.

Lidong, L.A, (2007) *A Cross-case Study of the Competitive Advantage of Private Higher Educational Institutions in Kuching Sarawak.* A Published Thesis

Lippman, S. and Rumelt, R. (1982). 'Uncertain Imitability: An analysis of Interfirm Differences in Efficiency under Competition', *Bell Journal of Economics,*13: 418-438

Lodico, M., Spaulding, D., & Voegtle, K. (2006). *Methods in educational research: From theory to practice.* San Francisco : Jossey-Bass,

Long, K., & Vickers-Koch, M (1995) Using Core Competences to create competitive advantage. *Organizational Dynamics*

Ma, H. (2004). Toward Global Competitive Advantage: Creation, Competition, Cooperation and Co-option. *Management Decision,* 42 (7): 907-924

Mahoney, J. T. and Pandian, J. R. (1992) 'The Resource-based View within the Conversation of Strategic Management', *Strategic Management Journal,* 13: 363-380

Makadok, R., (2001), 'Toward a Synthesis of the Resource-based and Dynamic-capability Views of Rent Creation', *Strategic Management Journal,* 22: 387-401

Mamdani M., (2007)Scholars in the Marketplace. *CODESRIA,* Senegal.

Markman, G. D., Espina, M. I. and Phan, P. H. (2004), Patents and surrogates for inimitable and non-substitutable resources, *Journal of Management,* 30: 529-544

Materu, P. (2007) *Higher Education Quality Assurance in Sub-Saharan Africa: Status, Challenges, Opportunities and Promising procedures*. Washington D.C: World Bank,

McEvily, S. K., and Chakravarthy, B. (2002) The Persistence of Knowledge- based Advantage: An Empirical Test for Product Performance and Technological Knowledge. *Strategic Management Journal,* 23 (4): 285-305

McGee, J. E. & Finney, J. B. (1997) Competing against Retailing Giants: A look at the Importance of Distinctive Marketing Competencies. *Journal of Business and Entrepreneurship,*25: 301-324

McGee, J. E., Thomas, H. and Wilson D. (2005) *Strategy: Analysis & Practice*. New York: McGraw-Hill

McGrath, R. G., Tsai, M., Venkataraman ,S. and MacMillan, I. C. (1996) Innovation, Competitive Advantage, and Rent. *Management Science,* 16: 251-275

Miller, D., and Shamsie, J. 1996. The resource-based view of the firm in two environments: The Hollywood film studios from 1936 to 1965. *Academy of Management Journal,* 39(3): 519-544

Montgomery, C. A. (1994) Corporate diversification. *Journal of Economic Perspectives,* 19: 623-632

Mpaata, A. K. (2010) *University Competitiveness through Quality Assurance*; The Challenging Battle for Intellectuals

Nelson, R. and Winter, S. (1982). *An Evolutionary Theory of Economic Change*. Harvard University, MA: Cambridge.

Newbert, S. L. (2007), Empirical Research on the Resource-based View of the Firm: an Assessment and Suggestions for Future Research, *Strategic Management Journal,* 28: 121-146

Newbert, S. L. (2008), Value, Rareness, Competitive Advantage, and performance: A Conceptual-level Empirical Investigation of the Resource-based View of the Firm, *Strategic Management Journal,* 29: 745-768

Nhundu, T. J and Moanakwena, P. G (2008) Making Quality a Priority in the Provision of African Tertiary Education. *Tertiary Education Council*, Botswana

O'brien, R. M.(2007) A Caution Regarding Rules of Thumb of Variance Inflation Factors, *Springer*

Odhiambo, J. (2005) *Advancing the Quality of Higher Education through Internationalization*.Strathmore University, Kenya

Pearce and Robinson (2007) *Strategic Management: Formulation, Implementation and Control;* Boston: McGraw Hill

Peteraf, M. A.; Barney, J. B. (2003), Unraveling the Resource-based Tangle, *Managerial and Decision Economics*,24: 309-323

Peteraf, R. P. (1993) The Cornerstone of Competitive Advantage: A Resource-based View.*Strategic Management Journal,* 14 (3): 179-191

Prahalad, C. K. and G. Hamel (1990). 'The Core Competence of the Corporation', *Harvard Business Review,* 68 (3): 79-93

Priem, R. L.; Butler, J. E. (2001), Is the Resource-based 'View' a Useful Perspective for Strategic Management Research?, *Academy of Management Review*,26: 22-40

Protogerou, A.; Caloghirou, Y.; Lioukas, S. (2008), Dynamic Capabilities and Their Indirect Impact on Firm Performance, *Paper submitted to the DRUID 25th Celebration Conference 2008,* available at http://wwwz.druid.dk/conferences/viewpaper.php?id=2718&cf=29

Ray, G., Barney, J.B. and Muhanna, W.A. (2004). Capabilities, Business processes, and Competitive Advantage: Choosing the Dependent Variable in Empirical Tests of the Resource Based View. *Strategic Management Journal,* 25: 23-37

Romero, L. and Del Rey, E. (2004) Competition Between Public and Private Univeristies:Quality, Prices and Exams. *Department of Economics, Universitat de Girona*

Rothschild, M. and White L. J. (1995) The Analytics of pricing in Higher Education and other Services in which Customers are inputs. *Journal of Political Economy,* 103

Ruben, B. D. (1999) Towards a Balanced Scorecard for Higher Education: Rethinking the College and Univeristy Excellence Indicators Framework. *Higher Education Forum*

Ruben, B. D. (1995) *The Quality Approach in Higher Education: Context and Concepts for Change*. New Jersey: New Brunswik.

Rugman A.M. and Verbeke, A. (2002), Edith Penrose's Contribution to the Resource-Based Views of Strategic Management. *Strategic Management Journal,*23 (8): 769-780

Rumelt, R. P. (1984) *Towards a Strategic Theory of the Firm*. , New Jersey: Prentice Hall

Saloner, G., Shepard, A.and Podolny, J. (2001). *Strategic Management*. New York : John Wiley & Sons

Saunders, M., Lewis, P. and Thornhill, A. (2007), *Research Methods for Business Students,* 4th ed, , Harlow: Prentice Hall Financial Times.

Selznik, P. (1957) *Leadership in administration*. New York, NY: Harper & Row

Sirmon, D.G., Hitt, M.A. and Ireland, R.D. (2007) Managing Firm Resources in Dynamic Environments to Create Value: Looking inside the Black Box. *Academy of Management Review,* 32 (1) 273-292

Spanos, Y.E., Lioukas, S. (2001) An Examination into the Causal Logic of Rent Generation:Contrasting Porter's Competitive Strategy Framework and the Resource-based Perspective. *Strategic Management Journal,* 22: 907-934

Sterwart, A. C. and Capenter-Hubin (2011) *The Balanced Scorecard Beyond Reports and Rankings*

Talaja, A. (2012) Testing VRIN Framework: Resource Value and Rareness as a Source of Competitive Advantage and above Average Performance. *Management Journal,* 17: 51-64

Teece, D.T. (1982) Towards an Economic Ttheory of the Multiproduct Firm. *Journal of Economic Behavior and Organization,*3: 39-63

Tirole, J. (1988) *The Theory of Industrial Organization*. MIT Press, Cambridge, MA.

Trout, P. A. (1997) What the Numbers Mean. *Change*

Umashankar, V. and Dutta, K. (2007) Balanced Scorecard in Managing Higher Education Institutions: An Indian perspective. *International Journal of Educational Management*

Wegner, J. W. (1997) Rational, Accessible Way to Rank Law Schools. *National Law Journal*

Wernerfelt, B. (1984) A Resource-based View of the Firm. *Strategic Management Journal,* 5: 171-180

Williams, W. M. and Ceci, J. J. (1997) How'm I doing? Problems with Student Ratings of Instructors and Courses, *Change*: 241-269

Winter, S., (1987), 'Knowledge and competence as strategic assets', In Teece D.J., The Competitive Challenge, Cambridge, MA: Ballinger: 159-184

Wu, L. Y. (2010), Applicability of the Resource-based and Dynamic Capability Views under Environmental Volatility, *Journal of Business Research,* 63: 27-31

APPENDICES

APPENDIX I: REQUEST TO FILL QUESTIONNAIRE

Maket Lydia
P.O Box 3900,
ELDORET
TEL NO. 0724 466904
Email addresss; kapkai@yahoo.com

Dear Sir/ Madam,

RE: REQUEST FOR RESPONDENTS

I am a postgraduate student of Moi University pursuing a Doctorate degree in Business management, Strategic Management option. I am carrying out a research on the *"Effect of Resource Characteristics on Sustainable Competitiveness in the Service Sector. A Comparative Study of Public and Private Universities in Kenya* ". The study is purely academic and it's for this reason therefore, that the information provided will be treated with uttermost confidence. I thus request for your co-operation in filling the questionnaire honestly and to the best of your knowledge

Thanks in advance,
Yours faithfully,

Maket Lydia

APPENDIX II: QUESTIONNAIRE FOR UNIVERSITY STAFF

Section A: Background Information of respondents
Kindly tick (√) that which best describes you

1. Kindly indicate your gender
Male [ ]
Female [ ]
2. Which section do you work in?
Administrative section [ ]
Academic section [ ]
3. Kindly indicate your school?
School of Arts and Social Sciences
School of Business/ Commerce
School of Law
School Education

6. Indicate your highest educational qualification

Doctorate Degree [ ]

Masters Degree [ ]

Bachelors Degree [ ]

Diploma [ ]

Certificate [ ]

SECTION B: INSTITUTIONAL PROFILE
7. What is the total number of students in the department categorized by gender?
8. What is the number of students categorized by the programs?
9. How many students apply for programs in the department in the academic year 2012/2013?

	Less than 20	21-50	51-100	101-500	Over 500
Programs					
BBM/BBA					
BA					
Bsc.Agric Ecomonics					
BED					
LLB					

10. How many are enrolled for the programs they applied for?

	Less than 20	21-50	51-100	101-500	Over 500
Programs					
BBM/BBA					
BA					
Bsc.Agric Ecomonics					
BED					
LLB					

11. What is the student graduation rate at the department?

Over 90% [ ]
Between 70%-90% [ ]
Between 50% and 69% [ ]
Below 50% [ ]

12. What is the lecturer/student ratio at the department?

1:<50 [ ]
1:50> <100 [ ]
1:100> <200 [ ]
1:>200 [ ]

13. What is the faculty teaching load per semester at the department?

Less than 3 courses [ ]
Between 4-6 courses [ ]
Between 7-10 courses [ ]
Over 10 courses [ ]

14. What is the number of faculty publications annually in the department?

Less than 5 [ ]
Between 5-10 [ ]
Between 11-20 [ ]
Over 20 [ ]

14. How much in grants is offered to the department annually?

Less than Ksh. 100,000 [ ]
Between Ksh 100,000-500,000 [ ]
Between Ksh. 500,001-1 million[ ]
Over one million [ ]

15. How many lecture halls are allocated to the department?

Less than 5 [ ]
Between 5-10 [ ]
Over 10 [ ]

16. Please tick (√) the option that best suits your opinion about the **Library facilities** in your department

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Library facilities	1	2	3	4	5
16:the library at the department has enough space					
17: the library at the department has useful reading materials					
18: the library also offers e-materials (journals)					

19. What is the age of your institution?

Below 10 years [ ]
Between 10-20years [ ]
Between 21-30 years [ ]
Over 30yrs [ ]

20. How much do the programs in the department cost annually?

Cost of Programs	Less than 100,000	100,000-150,000	151,000 and above
Programs			
BBM/BBA			
BA			
B Education			
LLB			

21. Where is your institution located?

Urban setup [ ]

Rural setup [ ]

SECTION C: SUSTAINABLE COMPETITIVENESS

This section is on the **Higher Education Dashboard Indicators** that represent Sustainable Competitiveness

22. Please tick (√) the option that best suits your opinion about the **Teaching/Learning** in your department using the Key below

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Programs/Courses	1	2	3	4	5
22:All the lecturers in the department have a masters degree and above					
23: Programs offered in the department are current in the market					

24. Please tick (√) the option that best suits your opinion about **Scholarship/ Research** in your department

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Scholarship/ Research	1	2	3	4	5
24: The department has a journal that is produced on quarterly basis					
25: Publications are recognized if they are published in selected stature of journals or publishers					

26. Please tick (√) the option that best suits your opinion on the **Public Service/Outreach** in your department

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Public Service/ outreach	1	2	3	4	5
26: Employers send their employees to the departments' programs for continuing education					
27: The alumni of this department offer both financial and moral support to its initiatives					

28. Please tick (√) the option that best suits your opinion on **Workplace Satisfaction** at your department

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Workplace Satisfaction (Faculty & Staff)	1	2	3	4	5
28: The department experiences a very low staff turnover					
29: employees in the department are regularly trained in their area of specialization					

30. Please tick (√) the option that best suits your opinion on **financial** matters at your department

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Finance	1	2	3	4	5
30: The department receives donations (monetary, books etc)					
31: department prepares an operating budget annually					

SECTION D: INFORMATION ON RESOURCE CHARACTERISTICS

32. Please tick (√) against the statements to indicate your opinion about the **Value of Resources** as available in your department

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Value of Resources	1	2	3	4	5
Reputation					
33: The department has built a good image over the years					
34: The programs offered at the department are very attractive					
35: Graduates from this department have been employed at very prestigious organizations					
After Sales Service					
36: The department organizes for forums where the alumni are invited					
37: Social responsibility programs are organized by the department to improve the society					
Content Delivery					
38: The teaching methods used in my department are appropriate					
39: Research seminars are organized frequently at the department level					
40: Lectures begin promptly at the beginning of the semester					
41: Lecturers make up for lost class hours					
42: Lecturers attend all the classes as they are required					
43: Lecturers are free and approachable to students					
Technical Quality of Lecturers					
44: Lecturers in the department are very competent					
45: All the lecturers hold a masters degree and above					

2. Please tick (√) against the statements to indicate your opinion about the **Rarity of Resources** as available in your university

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Rarity of Resource	1	2	3	4	5
46: The departmental library has very unique books for the different programs					
47: The department has some very unique programs it offers					
48: Lectures are carried out in very conducive environment for learning (quiet and serene)					

49: The department has existed for many years therefore it has an expansive experience					
50: The relationship between the lecturers and the students is very unique in that it goes beyond the classroom issues					
51: The staff of the department use their extracurricular talents to help the students					
52: The department has developed patents for its innovations					

3. Please tick (√) against the statements to indicate your opinion about the **Inimitability of Resources** as available in your university

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Inimitability of Resources	1	2	3	4	5
Complexities					
53: Interpersonal and intrapersonal relationships in my department cannot be easily copied					
54: The trust that exists within the employees and the management of the department which cannot be emulated					
55: The process of developing programs within the department cannot be easily copied by others					
Culture and History					
56: The values and beliefs that the department holds to cannot be copied by competitors					
57: The name the university and department have built cannot be imitated					
IR6: The number of years of experience gained by my department cannot be copied					
Causal Ambiguity					
58: The competence of the departments employees cannot be copied					
Change					
59: The department develops new programs regularly					
60: Programs developed are reviewed annually					
61: Methods of content delivery changes with the technological change					
62: Market demand drives the development of programs within the department					

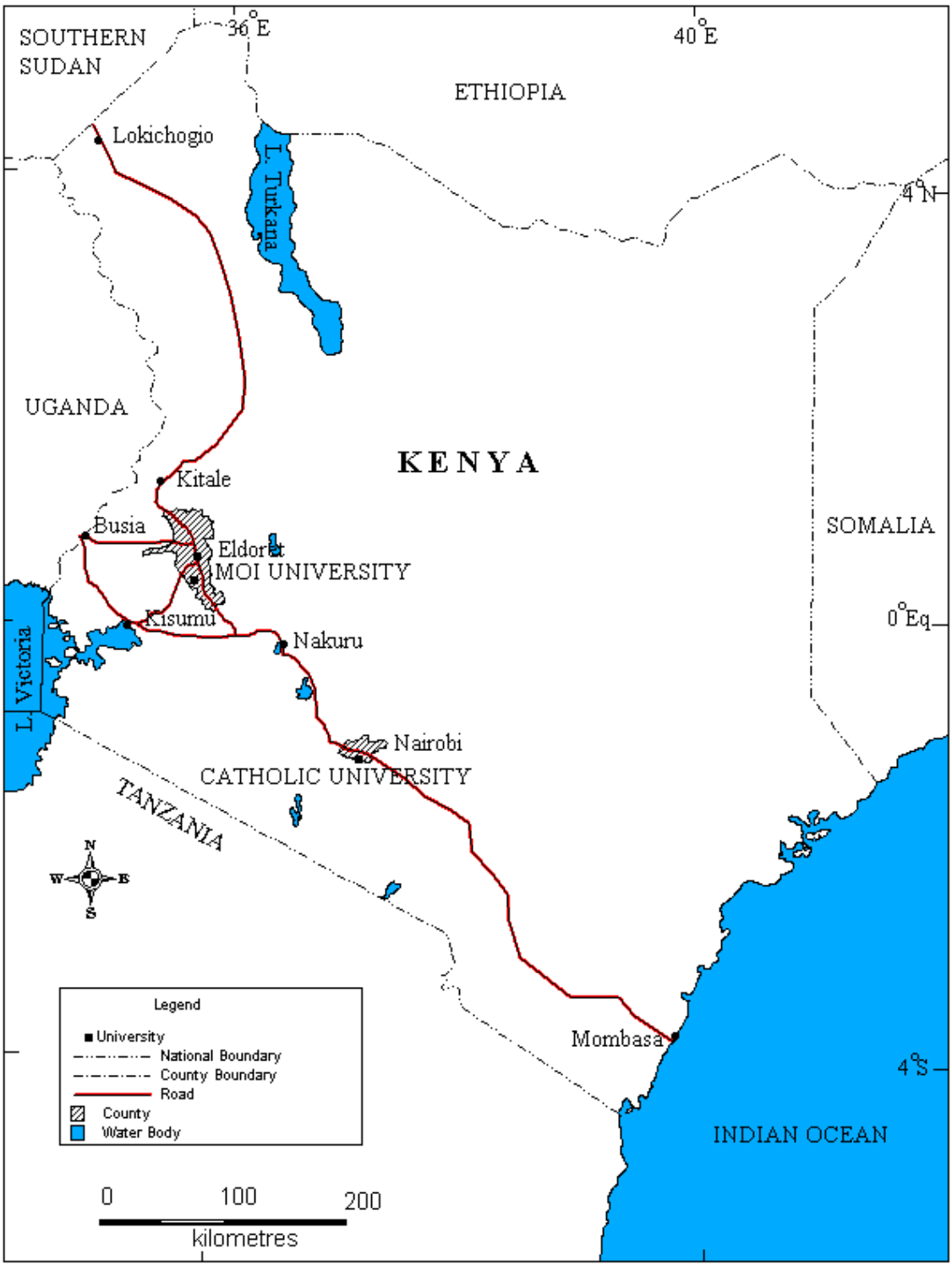
4. Please tick (√) against the statements to indicate your opinion about the **Non-Substitutability of Resources** as available in your university

Key: 1=strongly disagree, 2=disagree 3=not sure, 4=agree 5=strongly agree

Non-Substitutability of Resources	1	2	3	4	5
63: programs developed in the department cannot be replaced by other programs from other institutions					
64: The lecturers competencies cannot be replaced by others and the same output expected					

Thank you for your time.

APPENDIX III: LOCATION OF THE STUDY AREA IN KENYA



APPENDIX IV: TABLE FOR DETERMINING SAMPLE SIZE FROM A POPULATION

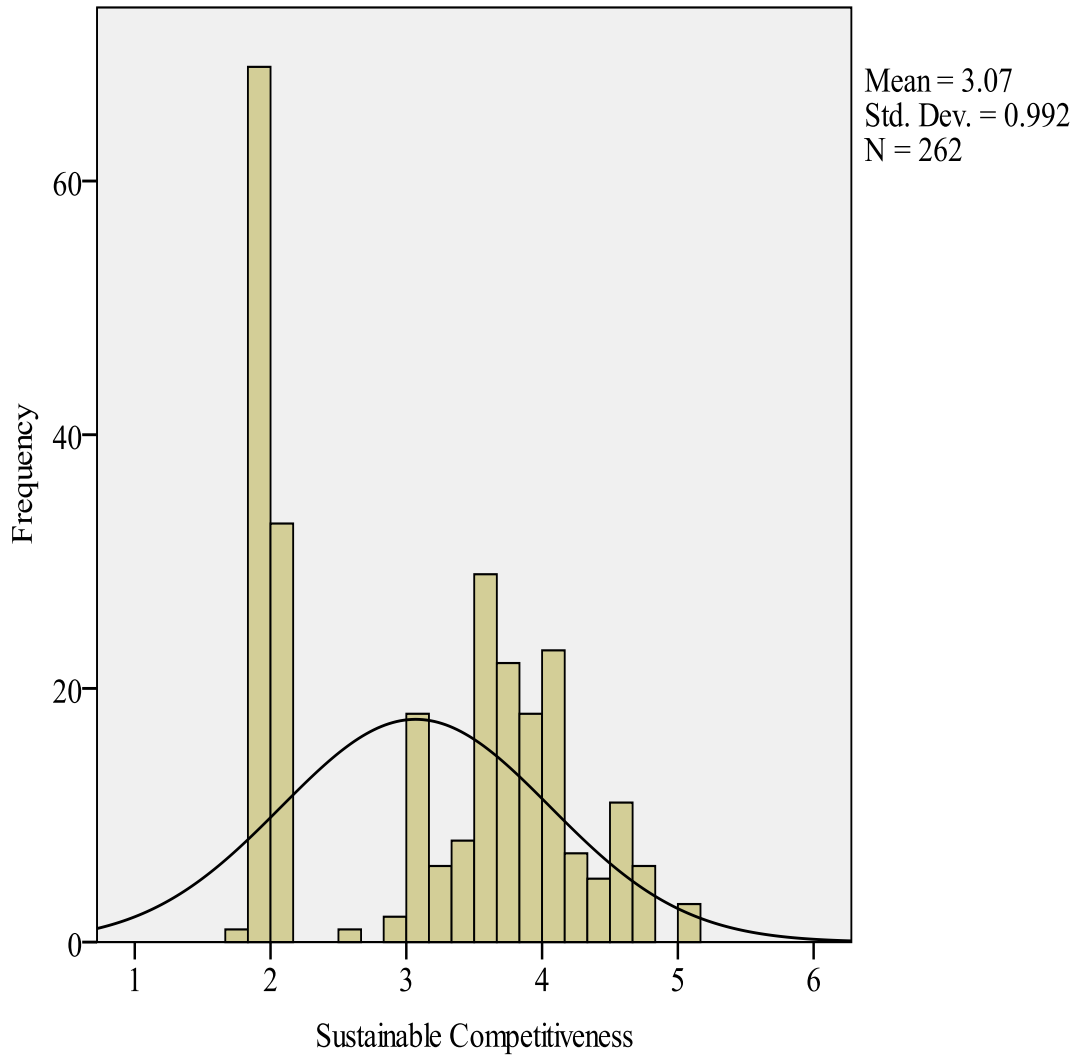
Table for Determining Sample Size for a Given Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

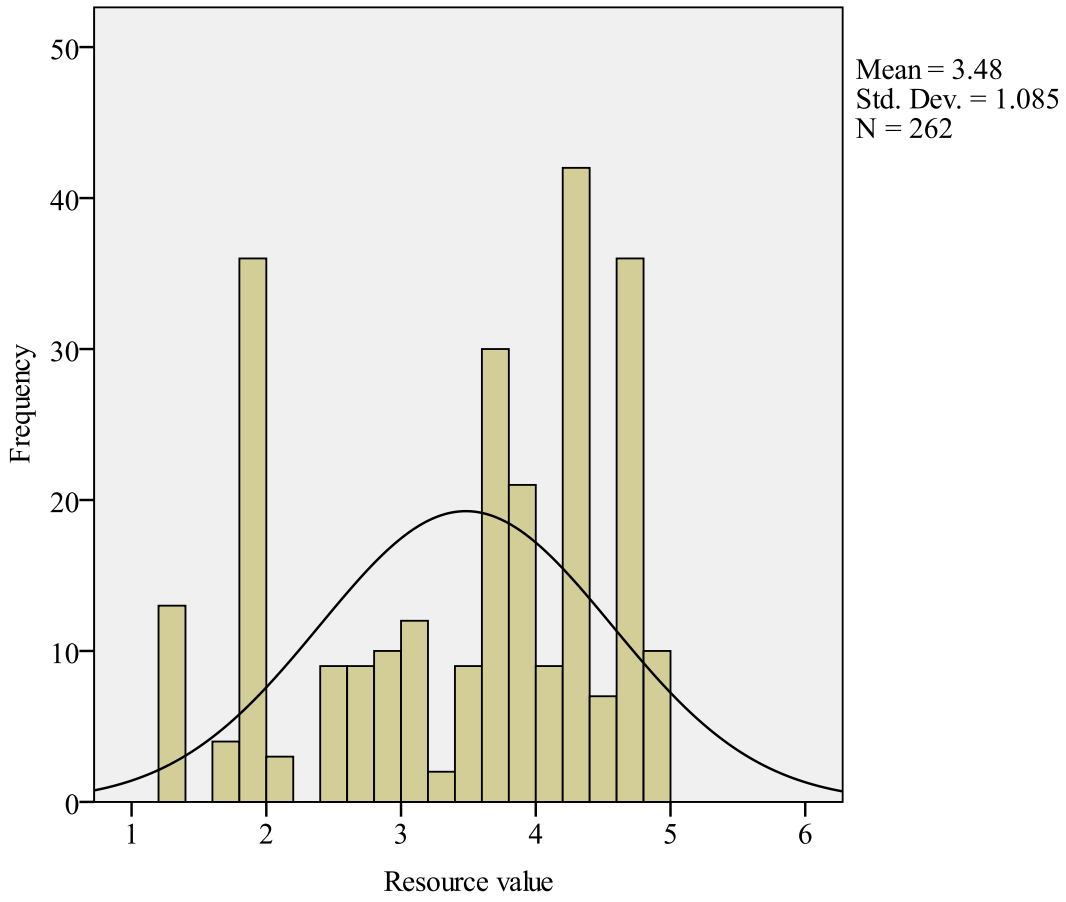
Note: "N" is population size
"S" is sample size.

Source: Krejcie & Morgan, 1970

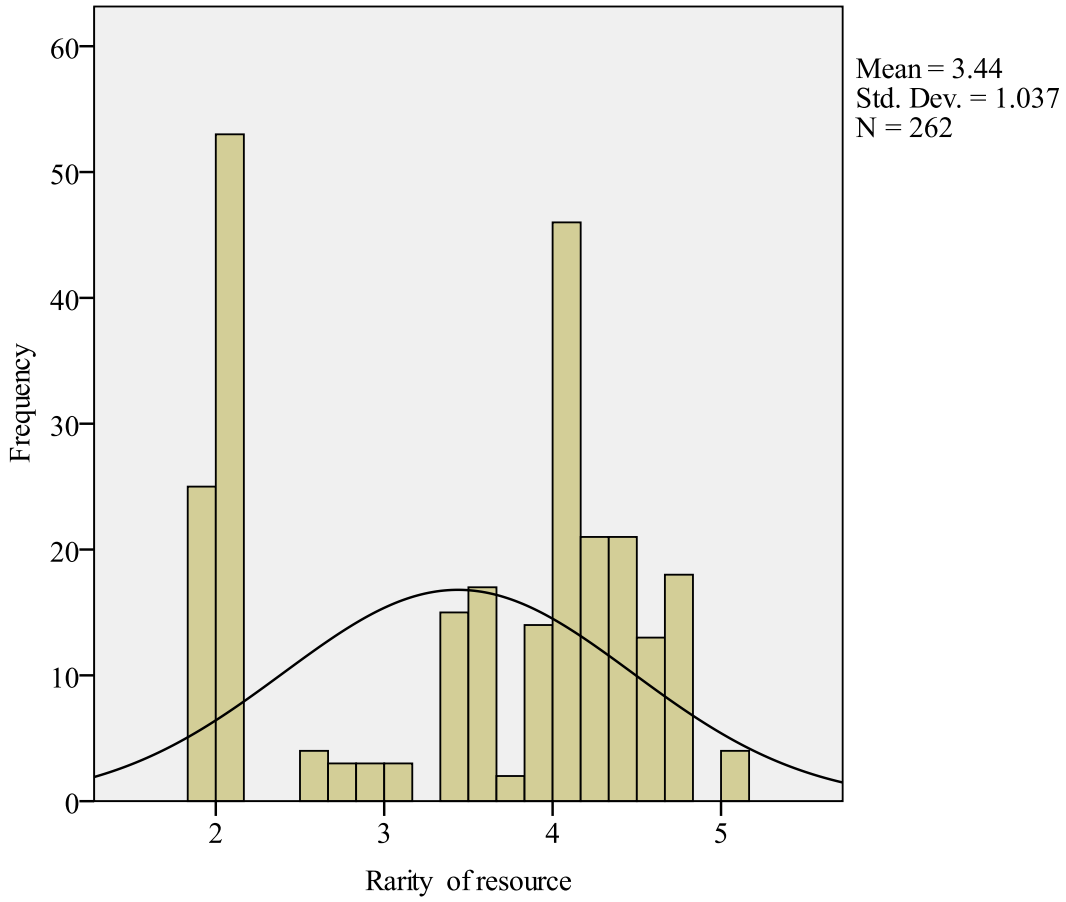
APPENDIX V: NORMALITY OF SUSTAINABLE COMPETITIVENESS



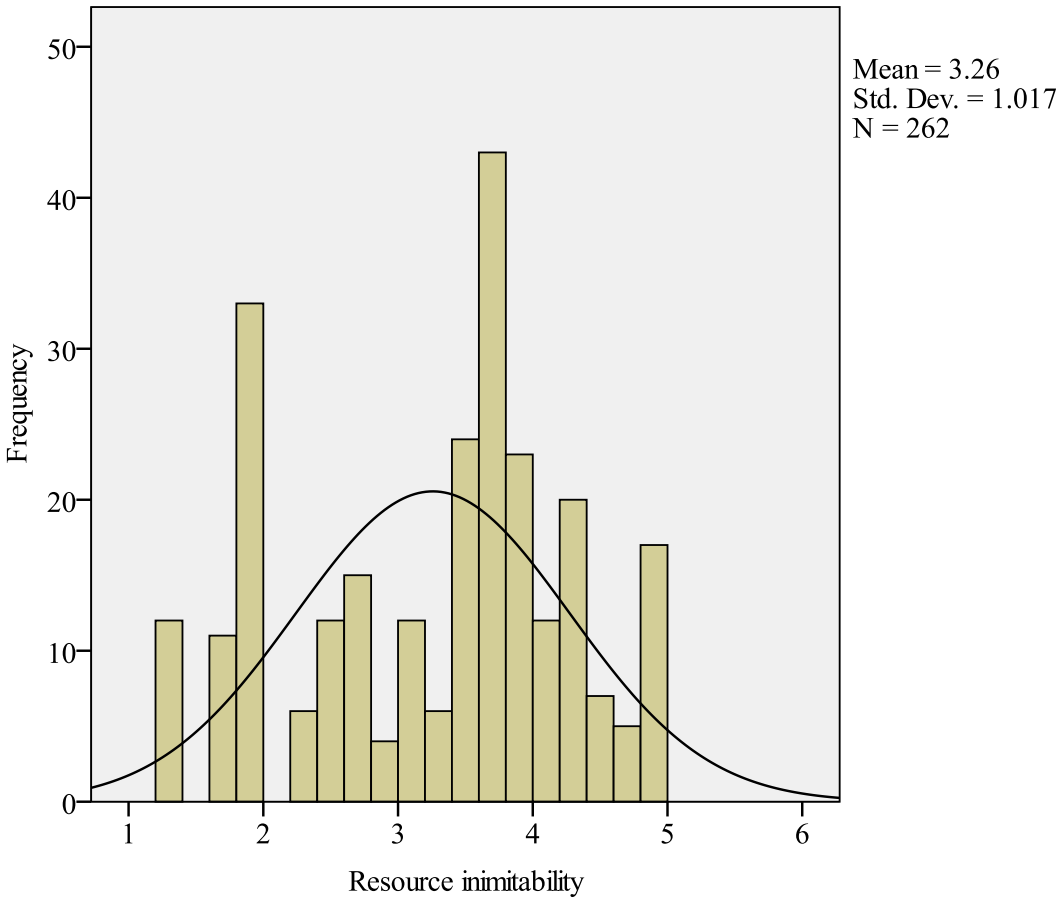
APPENDIX VI: NORMALITY OF RESOURCE VALUE


Mean = 3.48
Std. Dev. = 1.085
N = 262
Frequency
50
40
30
20
10
0
1
2
3
4
5
6
Resource value

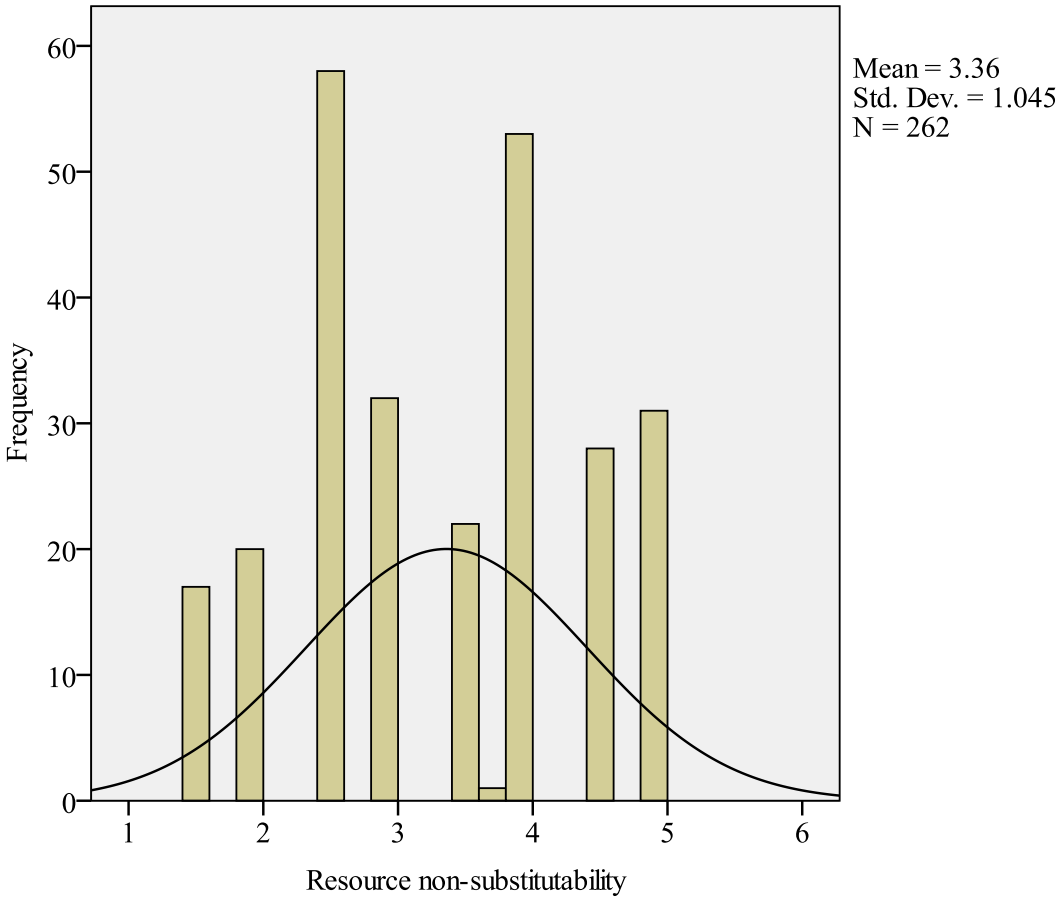
APPENDIX VII: NORMALITY OF RESOURCE RARITY



APPENDIX VIII: NORMALITY OF RESOURCE IN-IMMITABILITY



APPENDIX IX: NORMALITY OF RESOURCE NON-SUBSTITUTABILITY



APPENDIX X: AUTHORISATION TO CARRY OUT RESEARCH FROM NATIONAL COUNCIL OF SCIENCE AND TECHNOLOGY