HIGHER EDUCATION-ECONOMIC SECTOR LINKAGE STRATEGIES, COMPETITIVE FORCES AND PERFORMANCE OF THE PUBLIC AND PRIVATE UNIVERSITIES INCORPORATED IN KENYA

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DECLARATION

I declare that this doctoral thesis is my original work. I developed it through a thorough research process as per the regulations and guidelines of the School of Business, University of Nairobi. No part of this work has ever been submitted to any university. The works of other scholars cited in this study have been dully referenced.

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DEDICATION

This thesis is dedicated to my dear spouse Esther and lovely daughter Hope. Your inspiration and incredible support you rendered to me is unspeakable.

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ABBREVIATIONS AND ACRONYMS

BUI: Britain's University Institutions

CUE: Commission for University Education

FAO: Food and Agriculture Organization

HEIs: Higher Education institutions

IO: Industrial Organization

ICT: Information Communication Technology

NGOs: Non Governmental Organisations

RBV: Resource Based View of the firm

RDT: Resource Dependency Theory

SCP: Structure-Conduct-Performance

STI: Science Technology Innovation

TE: Technical Education

U-I: University-Industry Linkage

UN: United Nations

UNESCO: United Nations Educational, Scientific, and Cultural Organization

USA: United States of America

VRIN: Value, Rareness, Inimitability and Non-substitutability

WHO: World Health Organisation

ABSTRACT

The heightened debate on competitive forces attempt to explain why some firms perform better than others within the same industry. While resource based view emphasises the role of firm resources, five forces model focuses industry forces as the critical determinants of firm performance. However, most scholars attribute the difference in firm performance to both the two perspectives. Therefore, it has been difficult to distinguish the relative role of firm resources and industry forces in explaining firm performance. This study sought to contribute to knowledge by assessing the extent to which competitive forces influence the relationship between linkage strategies and performance of universities in Kenya. The study premised on the view that establishing the relative roles of these competitive forces would enable the firm maximise the opportunities available to neutralise threats and utilise its strength to reduce its weaknesses, gain competitive advantage and hence improve performance. The main objective of the study was to establish the moderating effect of competitive forces on the relationship between linkage strategies and performance of universities in Kenya. The study was guided by four specific objectives examining the moderating effect of competitive forces on the relationship between linkage strategies and organisational performance. Resource based view and five forces model were reviewed as the two main theories anchoring the study. Descriptive cross-sectional survey was adopted as the research design .The population of the study consists of sixty five (65) public and private universities incorporated in Kenya. Out of this, a sample of forty seven (47) universities which had undergone at least one graduation cycle was taken. Primary and secondary data was collected using semi-structured questionnaires and review of existing university documents and regulatory bodies' websites. The instrument was tested for reliability and found fit. Analysis was undertaken using correlation and regression analyses to test hypotheses. Analysis of variance was also used to analyse the differences between group means. Out of the targeted forty seven (47) respondents from forty seven (47) universities, a total of forty four (44) questionnaires were returned, representing 94% response rate. It was established that positive and significant correlations existed between linkage strategies and university performance. Compared to industry forces, resource conditions had stronger moderating effect on the relationship between linkage strategies and university performance in Kenya.

It was also established that competitive forces jointly predict performance and have significant joint moderating effect on the relationship between linkage strategies and university performance. The joint moderating effect of competitive forces on the relationship between linkage strategies and university performance was different from their separate effects. The findings were consistent with those of previous studies. The researcher concluded that the joint moderating effect of competitive forces on the relationship between linkage strategies and performance of universities in Kenya is different from their separate effects. The results provided have rich implications for theory, policy and practice. The significance of firm resources in strategy formulation and implementation cannot be overlooked. The findings offer insights to university authorities and policy makers by answering the question on the relative role of competitive forces in influencing the relationship between linkage strategies and organisational performance. The key recommendation that the study offers to the stakeholders, is to strike a balance between internal resources considerations and industry forces in strategy formulation and implementation. The main limitation of this study is that primary data was collected from only one respondent per university but common methods bias was mitigated through the use of additional secondary data to validate primary data. Thus, the limitation did not affect the credence of the results as presented and discussed. Secondly, although it was not possible to include all the determinants of institutional performance, balanced score card was appropriately used to represent financial and non financial aspects that constitute performance indicators.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Careful choice of strategy and appropriate implementation, taking competitive forces into consideration, should contribute to enhanced organizational performance. Strategy is influenced by both internal resource conditions and industry forces. Internal conditions look inwardly towards the resources available to the firm. However, not all resources are of equal importance or possess the potential to be a source of sustainable competitive advantage (Wernerfelt, 1984). This argument implies that a firm may have many resources that can be strategically utilised to improve firm performance, but appropriate choice must be done to identify specific resources that can provide superior firm performance. Much attention has focused on the characteristics of advantage-creating resources which meet the conditions of value, inimitability, rareness and non-substitutability.

Industry forces are external factors to the firm that have market orientation and mainly focus on the product side. According to Porter (1979), the sources of value for the firm are embedded in the competitive situation characterizing its external product markets. In this perspective, a firm's sources of market power explain its relative performance. Studies exploring linkages between higher education and economic sector have shown that having a strong symbiotic relationship between the two would enable the synergies to be exploited. This implies that performance of a university should be measured in terms of quality of linkage it has with economic sector demands.

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Resource based view (RBV) and the five forces model of Porter (1979) are the two main competing theories explaining the difference in firm performance within the same industry. While resource dependence, dynamic capability and organization behaviour are closely linked to resource based view, institutional theory has significant supplementary contributions to environmental influence through stakeholders. The five forces model provides favourable industry environmental tool to analyse competition arising from structure of the market in determining university performance. The Resource Based View (RBV) focuses on the firm's internal resources and capabilities to explain firm's value and profitability.

According to Devis and Cobb (2009), the resource dependency theory (RDT) is based on the notion that environments are the source of scarce resources and organizations are dependent on these finite resources for survival. Lack of control over these resources thus acts to create uncertainty for firms operating in that environment. The institutional theory, which refers to stakeholder management approach on the other hand, argues that organizations need legitimacy from their stakeholders so that their actions are desirable, proper and appropriate hence achieve better performance. Dynamic capability theory suggests that dynamic capabilities, the ability of a firm to reconfigure assets and existing capabilities, explains long-term competitive advantage. Organization behaviour theory concerns the adaptation and response of organization to internal and external environment (Grewal and Tansuhaj, 2001).

The economic sector continually demands for relevant and competitive human resources from universities. There are also emerging mature, better informed and more service discriminating customers in the market. This has created serious need for enhanced higher education standards and appropriate economic sector linkages in order to meet these emerging needs (Ginies and Mazurelle, 2010). In Kenya for instance, the total number of universities have substantially increased since independence to sixty five (65) currently. This has caused unavoidable rivalry in the higher education sector as an industry. This increasing pressure is pushing the boundaries of universities to compete at the highest level with the primary focus of becoming the dominant player in the market. According to Eshiwani (1999), the universities can only remain relevant if they respond promptly to the changing technology and new economic sector demands, by formulating proper linkage strategies to counter competition challenges and strive to attain a competitive edge over the rivals in all areas of operation.

According to the report of the Commission for Higher Education workshop held in Nairobi in 2000 on University- Industry linkages, it was observed that there has been little if any attempt to understand university – company linkages in developing countries such as Kenya (Munyoki et al., 2011). They noted that firms are reluctant to pay for the new ideas, while universities tend to become too profit oriented as opposed to transferring the inventions to seek relationships with companies. Kenyan Universities are trying to raise money in many ways in order to sustain themselves, and this calls for researchers to find out the extent to which the universities have links with the economic sector. Linkage is important in promoting economic development, as ideas developed by universities would find their way into industry application.

1.1.1   Linkage strategy

According to Grant (2010), strategy is the link between the firm and its environment. It is broadly defined to include both goals and means of achieving them. Mintzberg (1987) proposed five definitions of strategy, namely; strategy as a plan, a ploy, a pattern, a position and a perspective. Johnson and Scholes (2006) defined strategy as the direction and scope of an organization over the long term. Strategy thus consists of the means an organization chooses to move from its present state to its future. It focuses on future performance as an organizational link with the external environment and considers internal resources in order to attain a competitive advantage.

Theories of strategy embody specific explanations for why firms within and between industries differ in their performance. For example, the market positioning framework views differences between firms as resulting from the different characteristics of the markets they operate in. Resource based approach asserts that firm differences arise from situations where firms actively seek to differentiate themselves through their unique competencies and capabilities (Grant, 2010). The economic sector cannot afford to operate in isolation and must foster linkages with universities. This is because it requires qualified manpower to provide necessary services. Universities on the other hand, cannot ignore the economic sector which is the consumer of the knowledge and products generated. Strategies used to enhance the linkage between higher education and economic sector must revolve around curriculum orientation, teaching and learning focus, industrial attachment focus and collaborative research (Karanja, 2011).

1.1.2   Competitive Forces

There are currently two competing theories in the strategy literature, to explain the sources of competitive forces that influence firm performance. The forces include resource advantage creating conditions and industry forces. The implication is that competitive advantage can be due to the favourable internal resource conditions of a firm or by the forces within the industry where a firm operates. Porter (1980) advanced five forces model as favourable industry environmental analysis tool where competitive advantage is caused by industry forces arising from the structure of the market. In contrast is the Resource Based View (RBV), which focuses inwardly on the firm's resource conditions and capabilities to explain the source of competitive condition of a firm. The two views assert that in order to achieve superior performance, a firm seeks to gain sustainable competitive advantage over its competitors in the industry.

The level of competitive advantage attained by a firm depends on condition of its resources and the industry forces within the industry where it belongs. Competitive forces, strategy and performance are fundamentally endogenous. That is, reciprocal interactions at multiple levels of analysis between the environment and the firm shape business strategy and performance, while interactions between strategy and performance, in turn, shape both internal resource conditions and industry forces.

According to Wernerfelt (1984), resources of a firm determine the type of strategies beneficial for its efficiency and effectiveness. Resource conditions are unique to each firm. According to Collis and Montgomery (1995), unique capabilities refer to the productive activities that the firm is very good at.

Core competencies refer to those broad capabilities that are essential to the firm's performance and that allow it to enter different product markets. Competencies are unique, and hence hard to imitate, because they are the results of particular combinations and interactions between different resources. The focus on firm's resource dynamics is supported by empirical studies which have shown that inter-firm differences in rates of return are primarily due to firm specific factors. Grant (1991) found that 46.4 per cent of a firm profitability can be accounted for by business-specific internal factors and only 8.3 per cent by general factors related to the industry to which it belongs. He noted that firms' resources and capabilities take on greater importance when the external environment is in a state of flux. The argument here is that when the market undergoes significant change, a firm current market position is less relevant to future than if the market structure were stable.

Wernerfelt (1995) with reference to duality between markets and resources noted that there exists a rich taxonomy of markets and substantial technical and empirical knowledge about market structures but in contrast, resources remain an amorphous heap to most scholars. This means that among the resources of a firm, not all may be competitive advantage creating. As was proposed by Barney (1991), advantage-creating resources must meet four conditions, namely; value, rareness, inimitability and non-substitutability. Collis and Montgomery (1995) also noted that strategies or resources that meet the four conditions make it possible for firms to develop and maintain competitive advantage necessary for superior performance.

According to Porter (1980), firms need to seek a strategic fit between the external environment, for example opportunities and threats, and internal resources, for example strengths and weaknesses. The competitive forces strategy places primary importance on industry forces faced by the firm. In this view, strategy is about the firm creating a market position whereby it can defend itself from competitive forces.

A firm can reduce the industry forces in a way that places it at an advantage position compared to its competitors. Firms that manage to lower the industry forces would consequently realise superior performance. The five forces identified by Porter (1979) include entry barriers, threat of substitution, bargaining power of buyers, bargaining power of suppliers and rivalry among industry incumbents.

1.1.3 Organisational Performance

Organizational performance has been defined as the ability of an organization to fulfil its mission through sound management, strong governance and a persistent rededication to achieving results. Research on performance measurement has gone through many phases. Initially they were focused mostly on financial indicators but with time, the complexity of the performance measurement management and marketing system increased by using both financial as well as non-financial indicators. Since the late '80s, researchers, consulting firms and practitioners have stressed the need to put an increased emphasis on non-financial indicators in the performance measurement process. Thus, organizations need to use both financial and non-financial indicators in measuring their performance (Velcu, 2007).

In general, the concept of organizational performance is based upon the idea that an organization is the voluntary association of productive assets, including human, physical, and capital resources, for the purpose of achieving a shared purpose (Alchian and Demsetz, 1972). Those providing the assets will only commit them to the organization so long as they are satisfied with the value they receive in exchange, relative to alternative uses of the assets. As a consequence, the essence of performance is the creation of value. So long as the value created by the use of the contributed assets is equal to or greater than the value expected by those contributing the assets, the assets will continue to be made available to the organization and the organization will continue to exist. Therefore, value creation, as defined by the resource provider, is the essential overall performance criteria for any organization. How that value is created is the essence of most empirical research in management. Conversely, how that value is measured is the essence of this research.

Performance in an organization reflects the result of effects of implementation of various strategies adopted by a firm. The debate on performance measures in strategic management research is inconclusive. Different organizations use varying measures of performance. These measures may be quantitative or qualitative. Krager and Parnell (1996) conceptualized financial measurements as an objective of planning. Kushner and Poole (1996) measured organisational performance on eight performance areas including constituent satisfaction, reputation, internal process effectiveness, perceived potential for growth, attraction of funding and skilled human resources, diffusion of influence and administrative competence.

Financial measures were popular for many years but recent research has however witnessed a drift to incorporate non financial measures. Apart from financial measures, Kaplan and Norton (2008) introduced balance scorecard which considers other non financial measures of performance such as internal business process, learning and growth and customer perspective.

1.1.4 Economic Sector

The economic sector constitute all the stakeholders who exert influence and with interest in the university education. It includes the business, agricultural and public sectors that consume university education by providing employment opportunities to university graduates. According to Clark (2011), economic sector refers to a division of a country's population based upon the economic area in which that population is employed.

Many economists recognize the following five economic sectors; the primary sector which includes agriculture, mining and other natural resource industries; the secondary sector covering manufacturing, engineering and construction; a tertiary sector for the service industries, the quaternary sector for intellectual activities involving education and research and the quinary sector reserved for high level decision makers in government and industry. Barro (1991) noted that creating a more productive higher education system must also keep a close eye on the quality of programs and the value of the credentials they produce towards meeting the economic sector demands.

Churning out additional degrees and certificates may well be an illusory victory if increases in productivity come at the expense of program quality or rigor. Furthermore, if the additional credentials produced don not match up with economic sector demands, increases in attainment may not pay the expected dividends.

Postsecondary credentials with little economic sector value and relevance will produce neither the personal benefits nor the positive externalities that the economic sector is keenly interested in. The key questions, then, are whether postsecondary programmes add meaningfully to their students' human capital, and whether the additional education equips graduates with relevant skills as far as the economic sector requirements are concerned. Universities need to accurately assess economic sector needs and match the requirements with returns on degrees and certificates in the aggregate. In general, there are few systematic ways to measure the economic sector outcomes of particular institutions or state systems of higher education (Barro, 1991).

Over the last decade and a half, the falling of barriers to international trade and investment has led to a more integrated and interdependent framework of international business. Employers today, as a result, operate in an environment that demands new and constantly developing skills to retain global competitiveness. It is postulated that appropriate linkage strategies between universities in Kenya and the economic sector would ensure that expectations of the economic sector are met (Martin, 2000).

1.1.5 Higher Education in Kenya

Kenya placed considerable importance on the role of higher education in promoting economic and social development after the achievement of independence in 1963 (Sifuna, 1998). Consequently, higher education in Kenya has witnessed tremendous expansion in terms of the number of students demanding access. This has led to congestion in the facilities that had initially been designed to accommodate only a few students. Rising student numbers has also led to poor working conditions in universities in the country.

This resulted in the rapid expansion of the education system to provide qualified persons for the growing economic and administrative institutions, and to undertake some reforms to reflect the aspirations of an independent state (Court and Ghai, 1974). Throughout the 1970s the government strengthened and expanded the University of Nairobi, the only one then, as a conscious effort to provide university education to all qualified Kenyans and as a move to develop the necessary human resource for the private and public sectors.

As years went by, the number of Kenyans seeking university education exceeded the capacity of the University of Nairobi. This led to the establishment of Moi University in 1984 as the second university in Kenya following the recommendations of the presidential working commission through Mackay report. The commission collected views from many people and found an overwhelming support by Kenyans for the establishment of a second and technologically oriented university in the country. From then, university education in Kenya has expanded with a rise in student enrolments, expansion of universities, diversity of programmes and setting up of new universities and campuses. Kenyatta University which had operated as a constituent college of the University of Nairobi since 1972 became a full-fledged university in 1985. A previous agricultural college also gave way to Egerton University in 1988 (Chacha, 2004).

Over the last four decades, the social demands with respect to higher education in Kenya have clearly intensified. This has been exemplified by the rise in enrolments in public and private universities, the proliferation of more private universities and the establishment of private wings to handle self sponsored programmes in the public universities. Student enrolment in public universities in Kenya increased very rapidly between 1964 to over 200, 000 to date (Sifuna, 1998).

According to Sifuna (1998), the rapid expansion of university education was a spontaneous response to the high demand. With the increasing large flows of students from schools, popular demand for higher education increased. People seem to have put a lot of hope in higher education and this appears unique in the countries of this region. This prompted double intake of students coupled by the shift in the country's education cycle from 7-4-2-3 cycle to the 8-4-4 cycle. The main changes that occasioned this shift were the primary school cycle, which was extended to eight years after the advanced level certificate of secondary education had been abolished, reducing the number of secondary education from six to four years and increasing the university undergraduate cycle from three to four years.

Like most African countries, higher education in Kenya was historically free, with the public purse covering both tuition and living allowances (Weidman, 1995). The rationale for free higher education in Kenya was based, among other things, on the country's desire to create highly trained manpower that could replace the departing colonial administrators. In return, graduates were bound to work in the public sector for a minimum of three years. By 1974, provision of education in general had expanded dramatically and the number of students seeking university education had grown to an extent that it was becoming increasingly difficult to adequately finance university education by providing full scholarships and grants by the Government. The Government therefore introduced the University Students Loans Scheme (USLS), which was managed by the Ministry of Education. Under the scheme, Kenyan students pursuing higher education at Makerere, Nairobi and Dar es Salaam universities received loans to cover their tuition and personal needs, which they would repay on completion of their education (Chacha, 2004). The USLS was plagued with a number of problems right from the onset.

It lacked the legal basis to recover matured loans from borrowers. In addition, the general public and university students wrongly perceived that the loan was a grant from the government, which was not to be repaid. In order to address this problem, in July 1995 the government through an act of parliament established the Higher Education Loans Board (HELB) to administer the Student Loans Scheme. In addition, the Board is also empowered to recover all outstanding loans given to former university students by the Government of Kenya since 1952 and to establish a revolving fund from which funds can be drawn to lend out to needy Kenyan students pursuing higher education. The establishment of a revolving fund was also expected to ease pressure on the exchequer in financing education, which currently stands at 40% of the annual national budget (Sifuna, 1998).

Private institutions in Kenya depend on the tuition fees they generate from their students for their revenue. Such heavy dependence on tuition coupled with inadequate alternative income sources has made these institutions expensive and thus unaffordable for most Kenyans, in effect, limiting their services to the children of high socio economic status. As elsewhere in Africa, private expansion sprang forth largely due to the public system's failure to meet the demand for higher education. Private higher education has registered steady increases in enrolment (Ginies and Mazurelle, 2010).

Higher education is expected to meet the demands of post-secondary education. The paradigm shift from tuition free institutions and autonomy to enrol students has led to rapid expansion which poses great challenges to traditional higher education and academics alike.

According to Eshiwani (1999), higher institutions of learning are recognized for among other things human resource development. First, they should provide education and training within a structure that combines research and teaching. Second, they should offer professional training in fields such as Medicine, Engineering, Architecture, Law and Accounting among others.

Third, these institutions should operate as research centres, responsible for carrying out research in a broad range of disciplines. Fourthly, they should play a part in regional development, as well as developing international contacts, and last but not least, they should play a social function in fostering the intellectual and social development of the society. The mentioned functions have however not been adequately realised hence causing a missing link between Kenyan higher education and the economic sector. Apart from the universities, Kenya has a number of other middle level colleges that offer diplomas and certificates (Commission for University Education, 2013).

1.1.6 Universities in Kenya

The University division under Ministry of Education Science and Technology coordinates the developmental functions of the various universities. At the same time, the Commission for University Education (CUE) co-ordinates higher education through registration, categorization, standardization, validation, harmonization and supervision of post-secondary school institutions including universities. The role of university education is to produce a cadre of highly qualified manpower equipped with requisite skills (Republic of Kenya, 2005a).

The History of Universities in Kenya can be traced back to 1922 when the then Makerere College in Uganda was established as a small technical college which was then expanded to meet the needs of Kenya, Uganda and Tanganyika, Zanzibar, as well as Zambia and Malawi. In the 1940s and early 50s it is only this college that was providing university education in East Africa. This lasted until 1956 when the Royal Technical College was established in Nairobi. In 1963, the Royal Technical College became the University College, Nairobi, following the establishment of the University of East Africa with three constituent colleges in Nairobi, Dar es Salaam and Kampala (Makerere). The University of East Africa offered programmes and degrees of the University of London until 1966. In 1970, the University of East Africa was dissolved to create three autonomous universities of Nairobi, Dar es Salaam and Makerere. The University of Nairobi was thus established as the first university in Kenya (Chacha, 2004).

The 1980s and 90s saw the emergence of some private institutions. With the exception of some institutions, such as the United States International University (USIU), most private universities in Kenya are religiously controlled. The curriculum of most of these institutions is largely geared towards the arts and commercial courses. Most of them have inadequate resource capacity to adequately address the needs of courses in ICT and other sciences. They also have inadequately trained manpower to deliver the courses that they provide, thereby making the quality of some of their graduates questionable (Weidman, 1995). According to report by Commission for University Education (2013), universities are tasked with the pivotal role of helping Kenya achieve her development goals through education, research and innovation.

In Kenya, university education falls under the ministry of education, whose mandates are: to promote Science Technology Innovation (STI) Policy, research development, research authorization and coordinating Technical Education (TE). Among other roles, the ministry of education in Kenya is responsible for improving the quality, relevance, equity and access to university and technical training to enhance the capacity of the national human resources and systems. Karanja (2011) noted that the capacity of universities in Kenya is still limited and only three (3) percent of the university aged cohort are enrolled in university education. Currently there are 65 universities operating in Kenya comprising thirty one (31) public universities and thirty four (34) private universities (Commission for University Education, 2013).

According to Martin (2000), universities in Kenya are faced with challenges such as inadequate and outdated teaching and learning facilities, financial constraints and inadequate intellectual capital. These challenges hamper their ability to enhance industrial attachment, frequently review curricula, promote industrial visits and offer competitive and market oriented professional and academic programmes.

According to Goransson and Brundenius (2011), the goal of supporting university-economic sector linkages is to promote the relevance and contribution of universities to socio-economic development. Although there is no step-by-step model describing how university-economic sector linkages are to be developed, innovation provides the framework underpinning for supporting these linkages. Within the National Systems of Innovation (NIS) framework, innovation is viewed as a collective process in which firms do not innovate in isolation but within a larger system involving firms, universities, research centres, government agencies and other actors.

The universities are currently facing several dynamics that elevate ompetitiveness in the industry. The competitive ranking through webomatrics and performance contracting, threat of new entry through geographic expansion, increasing inability of the Government to fully finance university education the hence over emphasise the need for universities to rely on internally generated revenues are among the factors influencing universities to compete for self sponsored students enrollment.

1.2   Research Problem

Strategies enriched with linkage components and appropriately implemented are expected to enhance organizational performance. This relationship is however moderated by competitive forces exerted by firm resource conditions and industry forces. The focus on industry characteristics looks at the role of industry forces in determining firm strategy and performance while the focus on resource conditions examines the role of dynamic capabilities within the firm in influencing its performance. Powell (1996) observed that improved performance of a firm is influenced by competitive forces within and without the firm. Karanja (2011) explored linkages between universities and economic sector and found that having strong linkage strategies would improve university performance. Consequently, performance of a firm can only be accurately measured in terms of its linkage with the economic sector that it serves and not in isolation. Notably, most studies have been focusing on performance of universities and their rankings comparatively without paying close attention to their linkages with economic sector that they serve.

The existing research done on the area of higher education and economic sector collaboration has mostly been done in Asia, Europe and America. Only one case reflects one university in an African country (Martin 2000). Eshiwani (1999) noted that over the years, the universities in Kenya have not been operating in a very intense competitive environment. However, the recent rapid expansion of universities in Kenya has caused simultaneous emergence of unavoidable competitive environment. This implies that apart from collaborative strategies, universities need to embrace competitive strategies in order to bridge this gap posed by increasing competition within higher education sector. He also noted that just a few universities in Africa have taken initiatives to intensify university and economic sector linkages. The report of International Conference on Management with a focus on transforming higher education in Kenya, paid attention to this linkage gap and called upon universities to the challenge of building synergies between higher education and economic sector, and pointed at the pivotal role of the universities in leading the way (Chelte, 2001).

According to Spyros and Vicki (2000), education in developing countries has largely operated in isolation from the economic sector it is supposed to serve. Thus its product has at times been found wanting in vital skills, hampering absorption into the economic mainstream. This gap is due to the fact that higher education and economic sector linkage is weak, ineffective and not sustainable. Higher institutions of learning are critical partners in economic development and global competitiveness. It is therefore of paramount importance to establish strong links between higher education and economic sector, which is the consumer of technology, human resource skills and research findings.

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Theories and practices in business strategy development, as used in the for-profit business domain provide a basis for innovative approaches to strategy development. However, they do not address the comprehensive planning needs of the universities. The most accepted approaches to strategy development are industrial organisation (IO) (Porter 1981; Grant, 1991) and the resource based view (RBV) (Wernerfelt, 1984; Barney, 1991; Collis and Montgomery, 1995).While sustainable competitive advantage was the buzzword of the 1980s, especially through the work of Porter (1979), there has been relatively little in-depth development of theory and practice related specifically to the strategic management of higher education sector.

A report by Martin (2001) shows that limited work has been done across institutions on linkage between universities and stakeholders within the economic sector and that competitive strategies have hardly been embraced as determinants of performance in higher learning institutions. Here in Kenya, the need to enhance linkages between universities and economic sector has often been cited in several Government Publications (Government of Kenya Development Plan 1994-1998; Report of the National Conference on Education, 2004; KESSP, 2005; Sessional Paper No.1 2005; Kenya Vision 2030, 2007). From the corporate sector, there are emerging strong calls for collaboration between the productive sector and higher learning institutions. Competitive forces are primary determinants of firm performance (Porter, 1981).

There have been attempts to examine the relationships among competitive forces, strategy, and performance (Prescott, 1986). However, research examining that threefold relationship has not adequately addressed the issue of whether competitive forces are independently related to performance, moderators of the relationship or some combination of the two.

According to Porter (1981), most scholars attribute firm performance to competitive forces within and without the firm and therefore, it has been difficult to distinguish the relative roles of resources and industry forces in explaining firm performance. Scholars consistently strive to understand why some firms persistently outperform others. Grant (2001) carried out a cross sectional survey of 20 companies among the U.S top 100 companies with the highest ratios of stock price to book value on a study investigating the implications of resource based theory (RBV) on strategy formulation and performance. From his empirical findings he established that resources and capabilities of a firm are the central considerations in formulating its strategy. He also noted that a firm's resources are the primary constants upon which a firm can establish its identity and frame its strategy and that they are the primary sources of a firm's profitability.

In contrast Mahdi et al. (2012) conducted a literature review of relationship between industry forces which they named as market orientation and performance among 61 articles within Asian sphere since 1995 to 2010. The survey showed an upward trend in studying industry forces and performance relationship among strategy researchers. The study also found some industry forces variables directly related to and at the same time moderators of performance within manufacturing and service industries. They concluded that in today's highly competitive global markets, managers strive to improve organizational effectiveness through identification of organizational strategies which linked to performance and that competitive industry influence is prominent subject that has emerged as a significant predictor of performance, and it is presumed to contribute to long term success.

Sven et al. (2007) also conducted a cross-sectional sample survey of 530 hotels within Norwegian hotel industry. They established that industry forces have only a modest effect on relative productivity and no effect on return on assets and that the strongest effect of industry forces on performance was found when applying the subjective performance measures.

According to Powell (1996), both the internal resource conditions and industry forces have been used to explain superior organizational performance. Makhija (2003) contrasted the resource-based view (RBV), with industry forces in a cross-sectional sample survey of 988 Czech firms undergoing privatization. The empirical findings of her study showed that the RBV-driven variables are remarkably better at explaining performance of Czech firms in the period of privatization than industry-driven variables. These results underscore the role of firm resources as a primary determinant of firm value in rapidly changing environments. Makhija (2003) anchored her argument on the findings of Grant (1991) who noted that a firm's resources and capabilities take on greater importance in determining its performance when the external environment is in a state of flux compared to industry forces.

Lui (2005) also conducted cross-sectional survey on 28% of IT sectoral level of Taiwan to investigate industry- and firm- level effects on profitability differentials among firms. His empirical findings indicate that firm effects, which arise from various technological resources, and capabilities that are consistent with the resource-based view of the firm, have a large influence on performance, and industry effects, which are from structural characteristics, have a little impact on performance differentials among IT firms of Taiwan.

As Henderson and Mitchell (1997) pointed out, there remains little consensus on the relative role of these two influences on firm performance, and the reason is that a firm's organizational capabilities and market position are fundamentally intertwined and that more research is needed to understand the range of factors influencing the relationship between competitive forces and performance. They noted that both resource conditions and industry forces are clearly important in shaping strategy and performance. Understandably, then, most researchers have had difficulty distinguishing the relative moderating roles of the two competitive forces in explaining firm performance. To what extent do competitive forces influence the relationship between linkage strategies and performance of universities in Kenya?

1.3 Research Objectives

The general objective of the study was to establish the relationship between linkage strategies and performance of universities in Kenya and hence determine the relative moderating effects of competitive forces on the established relationship.

The specific objectives of this study were to:

i. Establish the relationship between linkage strategies and performance of universities in Kenya.

ii. Determine the moderating effect of resource conditions on the relationship between linkage strategies and performance of universities in Kenya.

iii. Determine the moderating effect of industry forces on the relationship between linkage strategies and performance of universities in Kenya.

iv. Establish whether the joint moderating effect of resource conditions and industry forces on the relationship between linkage strategies and university performance is different from their separate effects.

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1.4 Value of the Study

The central purpose of this study was to establish the relationship between linkage strategies and performance of universities in Kenya so as to contribute to a more holistic understanding the relative role of the competitive forces in influencing that relationship. The study established that resource conditions play more significant role in moderating the relationship between linkage strategies and organisational performance. The results also show that the more linkage activities are fused into the strategies, the higher the university performance. The findings will enable the university management to formulate and implement strategies with competitive and linkage orientations, considering competitive forces that continuously influence organisational performance. This will hopefully improve quality of service provision in the universities hence deliver the skilled, quality and relevant human resources demanded by the economic sector.

The study reinforces a new front that any strategy that does not address the linkage between an organisation and the economic sector that it serves can only remain a statement on paper. Since the mentioned theories have been confirmed to explain firm performance, the universities will then be expected to use the findings to reinforce new or existing strategies in order to narrow the gap between university education and economic sector. Finally, the study has made very useful contributions to policy makers. For instance, the established nature and strength of influence that competitive forces have on the relationship between linkage strategies and university performance will guide the process of strategy formulation and implementation.

1.5 Outline of the Thesis

The thesis comprises five chapters. Chapter one presents the background of the study, the research problem, research objectives and Value of the study. The chapter highlights the conceptual analysis and gives direction on the study. Chapter two covers literature on linkage strategies, competitive forces and performance of universities in Kenya. The chapter summarises studies that were accessed on the highlighted issues. This provided a foundation upon which the findings about universities in the Kenyan context were discussed and conclusions drawn.

A substantive review of each of the key variables is presented and knowledge gaps examined. A conceptual model is then developed from the foregoing discussion leading to four hypotheses. Chapter three lays out the research methodology that was used to execute the study. The various stages of research design, study sample and population, data collection techniques, operationalisation of study variables, the data collection instrument, data analysis procedure and techniques are explained in detail.

The preliminary findings of the study are presented in chapter four. The chapter begins with general information about the universities and the respondents and ending with descriptive statistics on the study variables. Analysis of findings and discussion is undertaken in chapter five. Findings are analysed using various statistical techniques and discussed. The results are interpreted in view of the conceptual framework. The tests of hypotheses are carried out using regression techniques and tests for reliability and validity also done.

The results of the tests of hypotheses and their interpretations are examined. The conclusions, interpretation and recommendations are given in chapter five. There is also a discussion on the implications of the findings for theory, practice and policy. The study limitations, suggestions and opportunities for further research are identified and explained.

1.6 Summary of Chapter One

The chapter emphasizes the link among the research concepts in the study. Appropriate strategies fused with economic sector linkage components should contribute to enhanced organizational performance. The economic sector constitute all the stakeholders who exert influence and with interest in the university education. It includes the business, agricultural and public sectors that consume university education by providing employment opportunities to university graduates. The economic sector cannot afford to operate in isolation and must foster linkages with universities. This is because it requires qualified manpower to provide necessary services. Universities on the other hand, cannot ignore the economic sector which is the consumer of the knowledge and products generated.

Strategies used to enhance the linkage between higher education and economic sector must revolve around curriculum orientation, teaching and learning focus, industrial attachment focus and collaborative research. The relationship between linkage strategy and performance is moderated by resource conditions and industry forces. The resource conditions have been identified as value, inimitability, rareness and non-substitutability. The industry forces include entry barriers, threat of substitution, bargaining power of buyers, bargaining power of suppliers and rivalry among industry incumbents.

In order to measure organizational performance, Kaplan and Norton (2008) introduced balance scorecard which considers other non financial measures of performance such as internal business process, learning and growth and customer perspective. The general objective of the study was to establish the relationship between linkage strategies and performance of universities in Kenya and hence determine the relative moderating effects of competitive forces on the established relationship. The study reinforces a new front that any strategy that does not address the linkage between an organization and the economic sector that it serves can only remain a statement on paper.

To supplement RBV and five forces model, resource dependency theory (RDT) which is based on the notion that environments are the source of scarce resources and organizations are dependent on these finite resources for survival is also reviewed. In addition, institutional theory, which refers to stakeholder management approach, has also been highlighted to reinforce industry forces. It argues that organizations need legitimacy from their stakeholders so that their actions are desirable, proper and appropriate hence achieve better performance. Dynamic capability theory has also been reviewed. It suggests that dynamic capabilities, the ability of a firm to reconfigure assets and existing capabilities, explains long-term competitive advantage. Finally, Organization behaviour theory which concerns the adaptation and response of organization to internal and external environment has also been used to supplement resource conditions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature relating to competitive forces, with reference to resource based view, five forces model, resource dependency theory, dynamic capability theory, organization behaviour theory and institutional theory. These theoretical foundations are reviewed in order to map out the nature and type of university education and economic sector linkage strategies formulated by the universities. Higher education sector, universities in Kenya and firm performance are also discussed. The chapter concludes with a summary of previous studies and research gaps and the conceptual framework to explain the nature of relationships among the variables under the study.

2.2 Theoretical Perspective of the Study

The study is mainly anchored on resource based view and five forces model of Porter (1979). Other relevant theories reviewed include resource dependency theory, dynamic capability theory, organization behaviour theory and institutional theory. Resource based view (RBV) and the five forces model of Porter (1979) are the two main competing theories underpinning the competitive forces that influence the difference in firm performance within the same industry. The Resource Based View (RBV) focuses on the firm's internal resources and capabilities to explain firm's value and profitability. Thus it has a close link with resource dependence theory, dynamic capability and organization behaviour, all of which advocate for prudent individual and group behaviours which enable organisations to utilise their dynamic capabilities to adjust to changes in the industry hence avoid over dependence on other competitors.

The five forces model provides favourable industry environmental tool to analyse competition arising from structure of the market in determining university performance. Institutional theory has significant supplementary contributions to industry forces since it analyses the environmental influences exerted by stakeholders.

2.2.1 Resource Based View

The resource based view (RBV) as a basis for a competitive advantage of a firm lies primarily in the application of the bundle of valuable interchangeable, intangible and tangible resources at the firm's disposal (Collis and Montgomery, 1995). The characteristics of a firm's crucial resources and strategic capability in Johnson, Scholes and Worthington (2002) terms was developed by Barney (1991), who suggested that to sustain competitive advantage, a firm has to possess the resources that are valuable, rare, and non-substitutable.

Barney (1991) claims the fundamental assumptions of RBV are the heterogeneity of resources and capacities held by each firm, and the long lasting duration of these differences within the firm. The RBV has emerged as one of the most dominant theoretical perspectives in the field of strategic management (Newbert, 2007).

The first formalization of RBV is considered to be the empirical paper written by Barney (1991). Based on the works of previous scholar such as Wernerfelt (1984), Barney (191) suggested that firms possessing valuable, rare resources and capabilities would attain competitive advantage, which would in turn improve their performance. According to Barney (1991), the importance of a given resource can only be assessed in comparison to those held by competitors, since only a competitively unique and superior competence can be a source of superior performance.

Resources have advantage creating conditions that lead to superior performance, or produce equilibrium returns in excess of the cost of capital. Peteraf (1993) and Barney (1986) notes that superior performance producing resources must be valuable, rare, imperfectly imitable and not perfectly substitutable. The literature is replete with examples of such firm resources. Recent empirical work on the RBV highlights attributes of actual resources that are likely to be rare, imperfectly imitable and also imperfectly substitutable.

While it is certainly possible that physical assets can be the source of above-normal returns, it is intangible organizational resources, developed typically through unique historicity and with social complexity, that are frequently found to create sustained competitive advantage. These resources are commonly embodied in the form of tacit knowledge within the firm. In the case of Maijoor and van Witteloostuijn's (1996) study of the Dutch auditing industry, the relevant resource is the auditing skill base of registered auditors. In describing the resource, they note that unique human capital is the principal source of competitive advantage. In Wernerfelt's (1984) perspective, this is embodied in the firm's in-house knowledge of technology. In the banking industry, Mehra (1996) finds that as this industry restructures, resources such as management quality and depth, technological expertise, resource management/efficiency, and innovation play an important role in explaining performance variation in the U.S. banking industry.

Herremans and Isaac (2004) noted that recent researchers have focused on applying RBV paradigm to knowledge-intensive industries like schools, colleges and universities and the findings indicate that many institutions do not reflect knowledge in their balance sheet yet intellectual capital is perhaps the most critical asset they posses.

This intangible asset represents organizational education processes, human know-how and relationships that support or create superior performance. Resource based view constitutes inside-out model where strategic planning begins through the identification of internal resources that fit a matching external environment. RBV is considered a very popular theoretical perspective to explain organizational performance (Newbert, 2007). It focuses more on internal environment or organization characteristics as major determinant of the firm performance. To transform a short-run competitive advantage into a sustained competitive advantage requires that these resources are heterogeneous in nature and not perfectly mobile. Effectively, this translates into valuable resources that are neither perfectly imitable nor substitutable without great effort. If these conditions hold, the firm's bundle of resources can assist the firm sustain above average returns**.**

According to Grant (2010), for above average return to be sustainable, strategies used in reference to the available resources must meet the resource advantage creating conditions such as value, inimitability, non-substitutability and rareness. According to Wernerfelt (1984), RBV is more oriented towards the longer run hence helpful in ascertaining the dangers of future competitive imitation through an analysis of the resources and capabilities of competitors. Resource based view presents the advantage creating conditions as value, inimitability, non-substitutability and rareness. Resources that meet these four conditions would strengthen the relationship between linkage strategies and university performance.

2.2.2 Five Forces Model

Scholars in the field of strategic management have conceptualized industry forces as one of the key constructs for understanding organisational performance (Hofer and Schendel, 1978). The five forces model of Porter (1980) is a framework for industry analysis and business strategy development. It draws upon industrial organization (IO) economics to derive five forces that determine the competitive intensity and therefore attractiveness of a market. Attractiveness in this context refers to the overall industry profitability. An unattractive industry is one in which the combination of these five forces acts to drive down overall profitability. A very unattractive industry would be one approaching pure competition, in which available profits for all firms are driven to normal profit.

The five forces include the threat of substitute products or services, the threat of established rivals, the threat of new entrants, the bargaining power of suppliers and the bargaining power of customers. According to this model, the sources of superior performance of a firm are embedded in the competitive situation characterizing its industry (external product markets). In this perspective, a firm's sources of market power explain its relative performance. Three sources of market power are frequently highlighted as monopoly, barriers to entry, and bargaining power (Grant, 1991). When a firm has a market environment characterized by the presence of monopoly or a strong market position, its expected performance will be higher. By the same token, an industry that has high barriers to entry for new competitors also implies greater long-run performance since the firm faces less competition. Higher bargaining power within the industry relative to suppliers and customers also suggests that the firm will be associated with higher expected performance, since the firm's power over its constituents indicates that they have fewer alternatives within the industry to which they can turn.

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The structural attributes of industries have been observed to change very slowly (Porter, 1980). This suggests that market power and its observed reflection on profitability of incumbent firms, does not erode rapidly. Even in a changing environment, past market power of incumbents provides a temporary cushion from new competition which can be used to regain market power. For these reasons, greater market power is associated with superior performance. According to the five forces model, then, it is expected that the performance of universities would vary with the extent of their respective market power, derived from monopoly positions, barriers to entry, and bargaining power. Firms' monopoly-type positions are reflected in higher market shares in their industry.

Larger market shares in an industry allow firms to enjoy certain monopolistic advantages such as elevation of prices above costs brought about by industry features such as resource immobility or potential for product differentiation (Makhija, 2003). In addition, as an industry moves structurally closer to a monopoly and away from perfect competition, firms are able to appropriate in profit. Thus, higher profitability is expected for such firms. The weak competitive pressures faced by firms with monopoly-like positions should allow them to achieve both higher and more stable profitability. A more monopolistic position is expected to yield the firm an ability to better control its market due to fewer constraints and to reduce its risks (Barney, 1991).

In order to retain its monopoly position, however, a firm may also take actions that produce variability in its returns, for example set low prices in the short run. In the net, however, it is expect that firms with monopoly-type positions experience lower variance of profitability than firms in more competitive environments. Market power is also enhanced in an industry with significant barriers to entry.

According to Grant (2010), a number of researchers have noted that higher barriers to entry are associated with fewer competitors in the industry Industries with preemptive patenting, significant capital intensities, or knowledge asymmetries will deter new firms from entering established markets It is also expected that larger and financially less constrained firms would have more favorable bargaining power positions with respect to their suppliers or customers. Porter (1980) noted that larger firms in an industry are not only likely to be large buyers from suppliers but also they reduce alternatives available to customers.

In a typical university, the customers constitute the stakeholders who demand quality service at affordable price. The researcher considered suppliers who exercise their bargaining powers in public universities to include the parents, guardians, sponsors and schools that supply students as row materials to be processed into quality output at affordable price by the universities. Universities' financiers such as the government and other financial institutions demand quality services as well. According to Martin (2000), threat of entry for a university is often caused by alternative universities in the education industry competing on rapid changes in technology, price volatility and emerging market demands. Threat of substitution can be considered as other emerging alternative education such as e-learning, open learning methods and distance education that can be used as substitute by clients and lastly the rivalry among current competitors can be caused by both existing and upcoming private and public universities offering similar services.

2.2.3 The Resource Dependency Theory

The Resource dependency theory (RDT) is another theory of organizational studies that characterizes organizational behaviour. According to RDT, organizations must develop ways to exploit resources, which are also being sought by other firms, in order to ensure their own survival (Davis and Cobb, 2009). RDT rests on assumptions that organizations are comprised of internal and external coalitions which emerge from social exchanges that are formed to influence and control behaviour. The environment contains scarce and valued resources essential to organizational survival and as such, it poses the problem of organizations facing uncertainty in resource acquisition and that organisations work towards two related objectives: acquiring control over resources that minimize their dependence on other organizations and control over resources that maximize the dependence of other organizations on themselves.

According to Pfeffer and Salancik (1978), resource dependency theory responds to environmental uncertainty faced by organizations. This theory of management is based on the notion that environments are the source of scarce resources and organizations are dependent on these finite resources for survival. A lack of control over these resources thus acts to create uncertainty for firms operating in that environment. Organizations must develop ways to exploit these resources, which are also being sought by other firms, in order to ensure their own survival (Kreiser and Marino, 2002). The key to organizational survival is the ability to acquire and maintain resources (Pfeffer and Salancik, 1978). The role that the external environment plays is critical to any organization. The fact that organizations are dependent for survival and success on their environments for success does not, in itself, make their existence problematic.

If resources needed by the organization were continually available, even if outside their control, there would be no problem. Problems arise not merely because organizations are dependent on their environment, but because this environment is not dependable.

Resource dependency theory addresses the complex problems of diminishing resources and increasingly complex needs by advocating specific sorts of cooperative partnerships between schools and other organizations. In the modern era, higher education is expected to do more with less (Ancell, 1987; Campbell and Slaughter, 1999; Powers, 1988 and Tynan, 2001). This theory posits that changes in resource availability will threaten organizations and encourage adaptation for continued existence. In this case, because the leaders of public colleges and universities are significantly dependent on state appropriations, the theory postulates that they will take the measures necessary to retain or enhance their institutions' funding. This may involve encouraging more efficient resource allocation.

Governmental appropriations are the largest source of funding for public universities in Kenya today. The phenomenon of reduced finances, whether modest or considerable, obviously serves to challenge institutions of higher education to fulfil the needs of their constituents (Rouche and Rouche, 1999). As opposed to private universities, the history of public universities in Kenya quite clearly reveals an equally extensive institutional reliance upon the numerous arms of the government for its funding, a fact supported by the tenets of Resource dependency theory. As funding linked with these governmental sources wanes, universities must seek alternative modes of funding in order to augment existing revenue as well as to deal with increasing complex needs (Pfeffer and Salancik, 1978).

Institutions of higher education have therefore been seeking partnerships in order to gain funds that will supplement tuition and grant incomes (Ancell, 1987; Powers, 1988). Resource dependency theory addresses this phenomenon and is defined as reliance upon an external agency or entity for resources. According to this theory, organizations respond most readily to the demands of outside organizations that control critical recourses. Higher education relies quite heavily, and at times, exclusively, upon government funding of fees collected from students. When these same agencies reduce their financial support of education, universities must look for alternative sources within their own constituencies. This is an example of the changing environment. When environments change, organizations face the prospect either of not surviving or of changing their activities in response to these environmental factors. Students are a natural source for funding however business and industry are not.

Circumstances and events may encourage or permit the most unlikely alliances among groups that customarily are in opposition to one another or that seem to have relatively little in common. This increased reliance upon business and industry sources to make up for the shortfalls in governmental funding may be seen also as attempts by institutions that are building such partnerships to obtain competitive edge in the educational marketplace (Brown and Eisenhardt, 1998). Universities compete at times fiercely for students, for money, and for the salaries and recognition that will attract important educators to their campuses. In this regard, students are now being termed customers and the curricula and attendant educational services the products while competition is a relatively new trend.

As Nair (2003) points out, the idea of increased competition is something that higher education system has almost never had to contend with before. Therefore, when viewed from the point of view of Resource dependency theory, organizations experience competitive relationships with similar institutions for funding, and competition exists for tight resources. Consequently organizations that rely upon such funding feel at the mercy of the agencies (or groups) that control and dispense these monies (Campbell and Slaughter, 1999). With increasing scarcity, resource allocation becomes problematic (Salancik and Pfeffer, 1974).

According to RDT, organization should adapt to or alter external constraints, alter the interdependencies by merger, diversification or growth, negotiate the environment by interlocking directorships or joint ventures with other organizations or by other associations and changing the legality or legitimacy of environment by political action in order to balance their dependence on their funding agency (Pfeffer and Salancik, 1978). They argue that organizations of all sorts have traditionally built coalitions and partnerships in their efforts to increase their respective shares of the resources. It is further argued that the principles upon which these partnerships have been formed might well form the basis for viable educational partnerships that will aid universities in lessening their dependence upon other agencies for financial assistance.

Organizations compete and cooperate simultaneously as needed. For example, public education and higher education policy elites can be cooperatively interdependent regarding the issues of additional state funding for education, but competitively interdependent with regard to the specific distribution of the resources. Rivalry between competing organizations can be uneconomical and inefficient.

RDT perspective indicates the level of resource dependence of a given university on others. This implies that the strength of a university is influenced by the number of other universities depending on it. This resource dependence factor was used as a moderator variable between the linkage strategies and performance of universities.

2.2.4 Institutional Theory

The institutional perspective describes how organizations survive and succeed through congruence between an organization and the expectations from its environment. The institutional environment is composed of norms and values from stakeholders (customers, investors, associations, government, collaborating organizations). Companies perform well when they are perceived by the larger environment to have a legitimate right to exist. Thus the institutional view believes that the organizations adopt structures and processes to please outsiders and these activities come to take on rule-like status in organizations.

According to Marić (2003), Stakeholders are any group or an individual who can affect or is affected by the achievement of the organization objectives. It refers to any constituencies in the organization's external environment that are affected by the organisation's decisions and actions. The main groups of stakeholders include customers, employees, local communities, suppliers and distributors and shareholders. Stakeholder analysis can be used to generate knowledge about relevant actors so as to understand their behaviour, intentions, interrelations, agenda, interests and the influence or recourses they have. Stakeholders exert pressure and influences reflected through actions and policies changes.

In universities, the basic groups that provide performance of the core mission include the government, ministry of Education, science and technology, national agencies, students, employees, competitors who have various demands, interests and build networks that need strong management and interactions among all sectors. Harmonious interactions and relations with stakeholders are critical for university performance.

According to Córcoles et al. (2011), the world is changing daily, forcing the concept of analysing the changing needs of stakeholders. Higher education institutions are changing and are in need of entrepreneurial style of leadership. They have to be capable of daily transforming and reacting to change, at the same time remaining true to their main mission, as well as being professionally and socially responsible. Since universities are the professionally managed institutions, carrying strategic weight in society development, this area of research is yet to witness defining new moments. Application of stakeholder analysis tool has become widespread. There are various areas to apply stakeholder analysis tool.

Universities in particular, are under continuous pressure of changes and demands from stakeholders to follow the global trends of technology innovations. At the same time, higher education is expected to promptly respond to demands of market and competition. Universities are, inherently, learning organizations familiar with the concept of lifelong learning and Knowledge management, so they value the perspective of changes and the adoption of environment observation from the stakeholders' point of view.

In recent years, higher educational sector has been faced with globalization and strong competition. Therefore, the need has arisen for professional management structures and more entrepreneurial style of leadership.

Organizations have been transformed to learning organizations by the lifelong learning concept, while the knowledge management has become the leading tool in building competitive advantages. High education organizations are being pushed forward by competitiveness. That pressure requires continuous improvement emphasizing the need for measuring outcomes and building excellence. The paradigm of stakeholder analysis, applied to specific determinations of the system of higher education institutions, could be a good way for comprehending and predicting interests, needs and requirements of all key players in the environment. It is paramount for decision makers to understand higher education institutions and its environment in context of stakeholder analysis (Marić, 2003). There is a clear attempt of all organizations, especially those that create and encourage knowledge, to understand the actions of all participants and predictions of interests and requirements of the changing environment.

According to Fostaine et al. (2006), universities everywhere are being forced to carefully reconsider their role in the society and to evaluate the relationships with their various stakeholder communities to counter new challenges facing them. Improving the quality of higher education and stakeholder relationship generates certain expectations from universities that need to fulfil the three key dimensions of essential university mission. This includes teaching and education, research and innovation, and knowledge transfer and community service. The essential purpose of University is teaching and education, but also research and innovation. The third part of the mission covers the knowledge management, the cooperation between sectors and questions the role and the position of knowledge and high education organization in the contemporary, turbulent times. The higher education institution mission has been expanded to stretch beyond teaching and research to include services to the community requiring partnerships to be established.

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The stakeholder perspective is questioning organization in the light of its environment, finding the best way in successfully managing opportunities in and out of organizations and recognizing all the participants included in the process of organizational activities. According to Amaral and Magalhães (2002), the notion of stake holding has recently come up more frequently in policy studies and higher education in particular.

Theoretically, the term stakeholder in management literature has had two main consequences for how companies and their relations with the surrounding world have been analysed. First, the number of actors and groups of actors that the companies have to take into consideration has increased. Second, the companies have to pay attention to the stakeholders' values and beliefs and norms. Much of the literature on stakeholders in higher education is on the one hand closely related to strategic management and concentrates on the importance of stakeholders. On the other hand, stake holding is perceived to be part of the increasing managerialism in higher education and thereby perceived as something new (Andriof et al., 2002). Stakeholders have different foundations in terms of voting, economic and political influence (Freeman and McVea, 2001). Voting influence refers to a relationship based on a formal foundation for influence in decision-making. It not only refers to having voting rights in decision-making bodies but more broadly to wielding formal decision authority. Voting influence is formal because it gives certain categories of stakeholders a role to play and it is this formal role that is their foundation for influence. Parliamentary law regulates many aspects of institutional activity and management in higher education, even though what it regulates and to which extent varies over time.

Employees, students and other stakeholders may have voting influence by virtue of their role as voting members of boards at institutional or faculty level or other decision-making bodies. Whether they exercise actual influence is an empirical question. A stakeholder who can provide or retain resources has economic influence. The stakeholders may wield both potential and actual influence in the sense that economic agreements may be withdrawn or under threat of withdrawal. Thus, their influence is economic as they may bring money into the institution. Depending on the funding system, students can also be said to exercise economic influence, for example when the university receives reduced allocations when students switch to another university or supplier. Political influence, the term given to the third form of influence used in stakeholder theory, allows actors to use their participation and position in negotiations to affect an institution's decisions (Freeman and McVea, 2001). Political influence may on the one hand be formal; involved parties have the right to be consulted in policy discussions. On the other hand, it may take the form of more informal lobbyism.

When the universities and university colleges are state owned, the state may act as a prime partner and is thus to be regarded as a stakeholder. Government authority implies voting, economic and political influence. By passing of legislation and writing of new regulations the government and the parliament exercise voting influence. Governmental control of financial resources means that national authorities play a role that allows them to exercise economic influence. They may also participate in negotiations that affect the institutions' decisions. This implies that a single actor, or stakeholder, may have more than one foundation for influence. Within stakeholder theory in general and as applied to the field of higher education in particular, it is common to maintain this distinction between voting and political influence (Freeman and McVea, 2001).

According to Freeman and McVea (2001), the impetus behind institutional theory was to try and build a framework that was responsive to the concerns of managers who were being buffeted by unprecedented levels of environmental turbulence and change. Thus institutional perspective forms part of industry forces that moderate the relationship between linkage strategies and organisational performance. This implies that a university's compliance with norms and values from its stakeholder as far as linkage strategies are concerned would influence its performance.

2.2.5 Dynamic Capability Theory

Dynamic capability theory explains how organizations survive and adapt in the face of change. Organizational ecology, presents evidence suggesting that most organizations are largely inert and ultimately fail. However, some firms do learn and adapt to shifting environmental contexts. According to Carmeli (2004), dynamic capabilities, the ability of a firm to reconfigure assets and existing capabilities, explains long-term competitive advantage and that ambidexterity, the ability of a firm to simultaneously explore and exploit, enables a firm to adapt over time. The theory emphasises the need for an organisation to utilize available resources and its capability to adapt to industry dynamics in order to improve firm performance. This implies that capability to adapt to industry dynamics constitutes a resource condition that would influence the relationship between linkage strategies and organisational performance. It also emphasises the need for an organisation to utilize available resources and its capability to adapt to industry dynamics in order to improve firm performance. This implies that capability to adapt to industry dynamics constitutes a resource condition that would influence the relationship between linkage strategies and organisational performance.

Grant (1991) suggests a key difference between resources and dynamic capabilities; on their own resources like capital equipment, skills of individual employees, patents, brand names, finance and so on are not productive and it is the firm's ability to assemble, integrate and manage this bundle of resources which become crucial in understanding how competitive advantage and superior performance is conferred upon firms. He argued that productivity requires coordination and cooperation among resource or asset teams and a capability is the capacity for a team of resources to perform some task or productive activity and that while resources are the source of firms' capabilities, capabilities are the main source of its competitive advantage. Carmeli (2004) strengthened this view by emphasizing firm dynamic capabilities as more intangible and inimitable resources, which stem from the integration of resources that are more likely to produce a competitive advantage, because such capabilities are often rare and socially complex.

The firm's dynamic capabilities constitute what it can do as a result of bundle of resources working together to effectively coordinate its complex human and non human resources in order to achieve superior performance. Dynamic capabilities cannot be given monetary value and are so deeply embedded in the organizational routines and practices that they cannot be traded or imitated easily.

Sarason and Tegarden (2003) strongly connect firm capabilities with its strategy. They defined dynamic capability as a set of business processes strategically understood hence, the company's competitive success depends on transforming a company's key processes into strategic capabilities that consistently provide superior value to the customer.

2.2.6 Organization Behaviour Theory

This theory gives analysis on the impact that individuals, groups and structures have on behaviour within an organization for the purpose of applying such knowledge towards improving organization effectiveness. The view postulates that organizations undergo revolutionary change (Grewal and Tansuhaj, 2001). According to Gosselin (2005), individuals behave differently when acting in their organizational role compared to when acting separately from the organization.

Organizational behaviour theory can be seen as a field of study that investigates the impact that individuals, groups and structures have on behaviour within an organization, to enable applying this knowledge towards improving organizational effectiveness (Luthans and Youssef 2007). Organizational behaviour is an important concept for any organization, since it deals with individuals, groups and structure as determinants of behaviour in organizations. It then applies the knowledge gained about individuals, groups and the effect of structure on behaviour in order to make organizations work more effectively. It is concerned with the study of what people do in an organization and how their behaviour affects the organization's performance. It is concerned with employee related situations and it tends to emphasize behaviour related to jobs, work, absenteeism, employment turnover, human performance and management (Karimi and Alipour, 2011).

According to Seligman and Csikszentmihalyi (2000), the organization's base rests on management's philosophy, values, vision and goals. This in turn drives the organizational culture which is composed of the formal organization, informal organization, and the social environment.

The culture determines the type of leadership, communication, and group dynamics within the organization. The workers perceive this as the quality of work life which directs their degree of motivation.

The final outcomes are performance, individual satisfaction, and personal growth and development. All these elements combine to build the model or framework that the organization operates from. The ability to use the tools of organizational behaviour to understand behaviour in organizations is one reason for studying this subject. A second reason is to learn how to apply these concepts, theories, and techniques to improve behaviour in organizations so that individuals, groups, and organizations can achieve their goals. Managers are challenged to find new ways to motivate and coordinate employees to ensure that their goals are aligned with organizational goals (Perrin, 1998).

Organizational behaviour studies the factors that impact individual and group behaviour in organizations and how organizations manage their environments. It provides a set of tools, theories and concepts to understand, analyze, describe, and manage attitudes and behaviour in organizations. The study of organizational behaviour can improve and change individual, group, and organizational behaviour to attain individual, group, and organizational goals. A full understanding must include an examination of behavioural factors at each level. According to Culbertson and Fullagar (2010), a manager's job is to use the tools of organizational behaviour to increase effectiveness, and the organization's ability to achieve its goal. Management is the process of planning, organizing, leading, and controlling an organization's human, financial, material, and other resources to increase its effectiveness. OB makes us aware of the various roles we need to play as managers to encourage the workforce to work with more satisfaction and profitability.

All managers are required to perform duties that are ceremonial and symbolic in nature, representing the organization as u nit to outsiders. They also have a leadership role. This role includes hiring, training, motivating employees, disciplining employees and unifying efforts. They monitor the flow of information and to some degree, collect information from outside organizations and institutions and transmit necessary information to outsiders. These roles demand a deep understanding of human behaviour in both individual and group forms, and so OB provides the means of tackling these issues with confidence. Positive organizational behaviour (POB) is defined as the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in workplace. (Luthans, 2002)

According to Perrin (1998), for a positive psychological capacity to qualify for inclusion in POB, it must be positive and must have extensive theory and research foundations and valid measures. In addition, it must be state like, which would make it open to development and manageable for performance improvement. Finally, positive states that meet the POB definitional criteria are primarily researched, measured, developed, and managed at the individual and group level.

The organizational behaviour studies these differences to describe and model the behaviour of individuals and groups in organizations. The organizational behaviour seeks to determine the combined effects of organization resources, seen as relevant linkage strategies on organization performance. Thus, individual and group behaviour are part of the resource conditions influencing the relationship between linkage strategies and performance.

2.3 Industry Environment

The industry environment is the overall economic, regulatory, social and political conditions that affect all participants in an industrial market in a similar way and cannot readily be influenced by marketing. The industry environment experienced by a business can include such things as demographics, lifestyle shifts and economic cycles (Brown, 2000). An industry can be defined as a group of companies offering products that are close substitutes for each other, that is product that satisfy the same basic customer needs.

Organizational closest competitors are those that serve the same basic customer needs. The five forces framework helps identify the sources of competition in an industry or sector. The five forces framework is composed of threat of entry by potential entrants, bargaining power of buyers, threat of substitutes, bargaining power of suppliers and competitive rivalry within (Porter, 1980).

The importance of industry environment in determining organizational performance has been challenged (Peteraf, 1993). The debate is whether strategy making should be externally oriented, starting with environment (industrial organization theory) or internally oriented starting with the organizations own skills and resources (resource based view theory). Research has suggested that the internal resources of a firm rather than the external environment around the firm are possibly the primary source of performance differences among firms. This result is bringing a growing number of researchers to the RBV of strategic management to explain the differences by focusing their attention on resource heterogeneity in an industry and the source of sustainable competitive advantage of the firms.

2.4 Strategy and Organisational Performance

Grant (2010) defined strategy as the match an organization makes between its internal resources and skill and the opportunities and risks created by its external environment. In recent times RBV has become one of the most influential frameworks in the strategic management literature and the fundamental question in this field is how firms achieve and sustain competitive advantage. The main theme of the resource-based theorists suggests that a sustainable firm strategy and performance is strongly embedded in its resources and capabilities and that these diverse, hard to copy resources and capabilities provide the basis of strategic advantage and superior firm performance (Lado, Boyd, Wright and Kroll, 2006). The resource-based literature strongly places a firm's unique bundle of resources as the major antecedent of its strategy and performance (Chan, 2005).

Due to the influence of Porter (1980), the major developments in strategic area focused on the link between strategy and external environment of a firm and the link between strategy and internal firm resources and skills suffered comparative neglect and that it was towards the latter half of 1980s that increased interest in firm specific variables became apparent which then resulted in positing a firm's resources as the foundation for firm strategy (Grant, 1991).

Porter (1985) defines strategy as the search for a favorable competitive position in an industry, the fundamental arena in which competition occurs. Competitive strategy aims to establish a profitable and sustainable position against the forces that determine industry competition. Strategy should aim at making the organization more relevant, attract and retain customers.

According to Andrews (1980), corporate strategy defines the businesses in which accompany will compete, preferably in a way that focuses resources to convert distinctive competence into competitive advantage. Andrew emphasizes on the need to build on resources and utilize them and outcompete competition. A competitive strategy is based on an analysis of factors of the industry and its evolution. The purpose of Porter's five forces model is to gain a thorough understanding of a particular industry by analyzing the external environments (Passemard and Kleiner, 2000).

2.5 Higher Education - Economic Sector Linkages

According to Coffee (1996), organizational linkage competence stems from its networks and administrative heritage. The firm's networks include its relationships with institutional actors such as the government, banks, suppliers, and other organizations that affect its ability to carry out its objectives. The ability of the firm to maintain quality relationships has an important impact on a firm's competitive standing and performance level. In a changing economic environment, ties to the economic sector give the firm greater competitive advantage over those with no such ties. Economic sector becomes an important source of knowledge for an institution.

As new rules, regulations and laws evolve in this environment, the firm's closer relationship with the economic sector helps to reduce uncertainty and risks relating to the environment. In addition, ties to the economic sector are associated with a correspondingly greater ability to draw more favorable inputs into the system. Thus, strategies that have linkage component with the economic sector are expected to positively affect firm performance (Martin, 2003).

Higher education institutions the world over are facing new challenges which require reforms in their management and governance styles. The rise of new stakeholders, internal factors, together with globalization and the rapid pace at which new knowledge is created and utilized are among the recent developments which challenge higher education institutions. While they have responded rather slowly in the past, to changing circumstances, there is now an urgent need for them to adjust rapidly in order to fulfil their missions and the needs of other stakeholders (Jowi, 2003).

Universities have long been recognized as sources of knowledge creation, innovation, and technological advances. Across the globe, from developed countries to other emerging economies, universities are being positioned as strategic assets in innovation and economic competitiveness, and as problem solvers for socio-economic issues affecting their countries. In order to fully capitalize on the potential of universities in this aspect, governments and institutions are expected to pursue linkage strategies to strengthen university linkages with the productive sector through research and other forms of collaboration.

According to (Mwiria, 1994) a report commissioned by the Association of African Universities in 1994 identified the types of linkages that have the potential to enhance the collaboration between African universities and their respective national populations, the business community and government. At that time, nearly three decades ago, such linkages were still in their formative stages. National interventions and pro-active engagement of universities and economic sectors have, however, been less forthcoming in many African countries.

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African universities also face considerable constraints with regards to the structure of their economies, political environments, and institutional research capacity. Despite criticisms of the poor state of university-economic sector linkages in Africa, African universities are taking steps to initiate and accelerate measures to strengthen institutional capacity to support linkages with the broader productive sector (Ginies and Mazurelle, 2010; Tiyambe, 2004).

Yet, overall there is a lack of data to provide a comprehensive and informed picture of what steps African higher education institutions have already taken and what is needed to provide a strengthened, more comprehensive platform for promoting, building, and managing synergetic partnerships with the productive sector (Munyoki et al., 2011). Universities hold three overlapping missions or mandates: teaching, research and outreach. The third mandate involves integrating or connecting university activities to society and the economy. However, many African universities have not actively or comprehensively pursued this third mission and consequently have been criticized as ivory towers (Fourie, 2003). Given the significant financing challenges facing many African universities, these institutions are under increasing pressure to demonstrate their social and economic relevance (Lundvall, 2009).

Interacting more closely with productive economic sectors represents one avenue to enhance the relevance of universities to the economic development of their countries. Thus, the topic of university-economic sector linkages is increasingly coming to the fore in higher education policy dialogue in Africa.

In today's knowledge-based economies, research and development (R&D) is seen as key to economic growth and competitiveness (Patel and Pavitt, 1994). Universities are increasingly recognized for their potential to contribute to R&D and innovation, and consequently governments around the world are taking action to foster an enabling environment for strengthened university-economic sector linkages. According to Goransson and Brundenius (2011), expenditures on university R&D as a percentage of Gross Expenditure on Research and Development (GERD) in several developing countries, including exceed that of developed countries. They note that in developing countries GERD as a percentage of GDP is significantly less than 1%. Thus, despite the relatively small expenditures on R&D in some developing countries, including many African ones, universities are significant contributors to what research is being undertaken, thus providing justification for fortifying the role of these institutions. Universities themselves have highlighted the relevance of university research as one of the most pressing issues facing universities (Goransson and Brundenius, 2011).

In the Triple Helix model developed by Etzkowtitz and Leydesdorff in 1997, innovation is seen as a product of interaction between three main actors being university, economic sector and government. In this model, universities focus on establishing institutional interface structures including economic sector liaison/technology transfer offices, business and technology incubators, and fostering entrepreneurialism through various policies and incentives (Etzkowtitz, 2008). Universities, for example, may even look to economic sector to recruit entrepreneurial researchers to work among their faculty and act as role models.

Curriculum review ensures that degree programmes produce graduates with the required knowledge and skills for the workforce. Creating opportunities for student attachments and placements in the productive sector is another common way in which universities link up with economic sector (Munyoki et al., 2011).

According to Pauw et al. (2008), African universities have been criticized as ivory towers that churn out graduates and research that are irrelevant to the needs of employers and the social, economic, and technical challenges facing African economies. There is a growing perception that the knowledge and skills acquired by students at African universities do not meet the requirements of economic sector and the wider economy. This mismatch, coupled with under-training in the critical skills of problem-solving, analytical thinking and communication is blamed, at least in part, for the emerging high graduate unemployment and under-employment in many parts of Africa. There is a need to bring together universities with productive sector representatives to update and upgrade curriculum to ensure that students graduate with relevant skills for the workforce.

It is also increasingly recognized that universities should play a pivotal role in applying research and innovation to address socio-economic problems and promote innovation for economic growth by forging strategic partnerships with the productive sector of the economy and national innovation systems. The perceived benefits from university-economic sector collaboration include providing alternative funding channels in an era of constrained financing, access to or acquisition of state-of-the-art equipment, improved curriculum and training in technology-oriented programmes and problem-solving, enhanced employment prospects for students, supplemental income for academic staff, and clearer contribution of universities to the economy, among others (Martin, 2000).

In the context of fiscal constraints, graduate unemployment, and the need for universities to demonstrate greater accountability to society and respond to national development imperatives, the topic of university-economic sector linkages is becoming increasingly prominent in the discourse on higher education in Africa. Although strengthening university-economic sector linkages offers many potential benefits, enthusiasm should be tampered with realism and recognition of the trade-offs inherent in promoting such linkages. While some universities have prospered significantly through large research contracts and the commercialization of markeTable technology, many others have not necessarily accrued substantial revenue through activities directed towards the productive sector, though they have still benefitted in other ways (Goransson and Brundenius, 2011).

Co-operatives, farmers, and micro-enterprises may not represent highly profitable activities, such engagement, nonetheless, plays an important social and economic function that should not be undervalued. Thus, the focus on commercialization needs to be balanced against the broader social mission of the university.While promoting economic sector-relevant research and entrepreneurialism, universities must guard against a number of potential negative externalities. Universities must balance competing interests, such as economic sector secrecy stipulations and profit-seeking against the traditional university practice of open communication and publication (Clark, 2011), support for basic versus applied, and scientific versus social research (Gulbrandsen and Smeby, 2005), providing economic sector-specific versus general training and monitoring academic staff time spent on research versus teaching (Kruss, 2008). They must also ensure that research is conducted in an ethical, interest-free way (Martin, 2000).

Many countries in Africa lack an enabling environment for reorienting and aligning universities and other higher education institutions (HEIs) towards a more entrepreneurial role. Apart from perhaps the Maghreb region and South Africa, most of sub-Saharan Africa lacks high-tech economic sectors and a true technology culture (Barry and Sawyerr, 2008). Many of Africa's economic sectors are often small to medium-scale firms producing for local markets, while the relatively larger ones are subsidiaries of transnational companies which draw upon the in-house R&D capabilities of the parent company (Munyoki et al., 2011). Others note the lack of awareness of the existing research results and new technologies by economic sector; the absence of strong involvement of the users in defining the research agenda; and the irrelevance of some university research (Dhesi and Chadha, 1995).

Arguably, many African universities are not in a strong position to conduct research and technology development. Long years of neglect in financing higher education in Africa and university research has left many of them with weak research infrastructure (Atuahene, 2011) and reliant on donor funding for research (Mouton, 2008). Under the present massification of higher education in Africa, research activities among academic staff frequently take a back seat to fulfilling the ever-growing teaching demands (Mohamedbhai, 2008). Despite growing student numbers, enrolment in sciences and engineering in many countries is low (Boersmaa and Gibbons, 2008), with less than 10% of students enrolled in these disciplines in some universities). Meanwhile, the migration of many talented academics to wealthier parts of the world compounded by low salaries and moonlighting activities of some academic staff, have left many universities with few qualified researchers to conduct local research (Barry and Sawyerr, 2008).

As a result, many African countries produce negligible research output (Mouton, 2008). Low investment in science and technology and lack of national strategies in these areas further compound the difficulties (Mouton, 2008). In the past twenty years, there had been notable changes in higher education in many parts of the world as a result of globalisation (Geuna and Martin, 2003; Mok, 2005). There is an increasing pressure from the market to produce human resources that are relevant, dynamic and competitive (Chatterton and Goddard, 2001). Indeed, higher institutions of learning are viewed as critical partners in economic development and global competitiveness. They lead in knowledge, discovering breakthrough ideas, fostering innovations, seeding new companies and creating jobs, and new streams of personal and corporate income.

While applying RBV to 35 Britain's higher educational institutions (HEIs), Chatterton and Goddard (2001) noted that when university resources are analyzed from an application-based (RBV perspective), it becomes clear that the people component of its resource base becomes fundamental. Ogawa (2002) studied 95 public and 597 private universities in Japan and noted that Japanese universities have historically been undergraduate school oriented organizations but in spite of that the core elements of importance are considered as teachers, their research orientation and their expertise.

Ozsoy (2011) researched on 179 universities across Europe, Latin America and Sub-Saharan Africa. He established the proposition that the performance of a university will be positively associated with its intellectual capital and their capabilities, curriculum orientation, enhanced industrial attachment, teaching and learning facilities and collaborative research. This reinforces the need for linkage strategies with economic sector.

According to Ogawa (2002), a typical university's strategies defining its linkage with economic sector include diversified, differentiated and well balanced market driven academic programs and curricula and amicable relationship between the university and its surrounding community through a well coordinated attachment activities. Critical is also the focus on innovative research activities that would improve the quality of the regional environment.

Universities act as collaborators in transferring regional study results and innovative research findings to the community. The transfer may take different forms namely teaching students, sparking business ventures, and conducting policy relevant research. In order to achieve this, they must ensure that their curricula and programs are training students in innovative techniques relevant to the region.

Lynch and Baines (2004) studied 80% universities in United Kingdom and noted that universities should become active in the development of business ventures, either initiating new ventures or working with existing small businesses to support their innovation needs and to transfer technologies out of the academic realm into the commercial realm. Working with existing small businesses to implement, develop, or market new technologies would be very desirable. In order to achieve these linkage objectives, teaching and learning focus is paramount. Relevant qualifications, extensive professional experience and continuous benchmarking with emerging demands from economic sector are critical attributes of focused teaching and learning.

The indicators of quality linkage strategies that foster relationships between economic sector and higher education were grouped by Chatterton and Goddard (2001) as curriculum orientation, enhanced industrial attachment, appropriate teaching and learning facilities and collaborative research. From the previous studies, curriculum orientation, industrial attachment focus, teaching and learning focus and collaborative research constitute key indicators of university-economic sector linkage strategies.

A quality educational program can only be achieved by orienting the curriculum fuse the economic sector demands. It must also be continuously reviewed after every cycle to capture the emerging issues in the dynamic economic environment. The curriculum must also be consistent with institution's mission and clearly defined outcomes intended to produce relevant graduates in the ever changing technological world. Clear policies must be formulated and implemented to guide curriculum development and review. The entire process must be highly inclusive in order to take care of all the needs of stakeholders involved at every stage (Martin, 2000).

According to Lynch and Baines (2004) and Karanja (2011), industrial attachment is a structured, credit-bearing work experience in a professional work setting during which the learner applies and acquires knowledge and skills. It involves the integration of learned theories related to the learner's area of specialization, to application of practical skills in an organization. Industrial attachment should challenge the student to examine the values of the organization involved in the experience, and to assess the learner's education as it relates to the economic sector. Industrial attachment thus assists the learner in exploring career interests, learning new skills, gaining work experience, developing a professional network and understanding workplace expectations.

Chatterton and Goddard (2001) used collaborative research as an umbrella term for methodologies that actively engage communities and policy makers in the research process. This implies that the university researchers, community-based organizations, and policy makers work together to frame the problems to be tackled and the questions that need to be answered, undertake the research and interpret the results in terms of their significance for community and policy change and disseminate the research findings and advocate for change. Collaborative research is engaged scholarship in action, in which university researchers, community members, and policy makers respect the knowledge that each partner brings to the discussion so that together they might know better how to understand the complex problems facing communities and how to design and implement research-based responses to those problems.

Linkage strategies can provide an important overarching vision for shaping and directing research priorities. They can thus help build institutional research capacity by ensuring that research projects are selected according to those that align best with university objectives, economic sector requirements and challenges, niche areas of specialization, and promote involvement and capacity building amongst graduate students. In directing priorities, linkage strategies can help institutions shift away from the current system of disparate, fragmented, individualistic researcher collaborations aimed primarily at career advancement a problem encountered in many African universities towards building overall institutional research capacity (Martin, 2003). Developing proper such strategies however, needs to be more than just a paper exercise. Direct importation and simple imitation of linkage strategies and policies from other countries, particularly the more developed economies, without a serious reflection of the institution's actual capacity and a realistic vision of its future direction, risk putting in place irrelevant, vacuous policies.

In order to capture the emerging trends and issues in the economic sector, teaching and learning must focus on the trends of the emerging markets, rather than the traditional theories as prescribed in books. The teaching and learning process should ideally encompass case analyses, industry visits and field study. This is as opposed to rote learning, which eschews comprehension and by itself, it is an ineffective tool in mastering any complex subject at an advanced level. It is essential for the teaching and learning environment to be enhanced with state of art technologies, relevant and current information, industry experience and new emerging trends in the economic sector (Eshiwani, 1999).

According to Gichaga (2005), commission for higher education (CHE) and Kenyan universities have surveyed the different models used in Europe, Asia, and Africa for sustainable university-economic sector linkages. He noted that in Germany, the university-economic sector links are sustained by joint research projects and technology transfer centres. In Sweden on the other hand, the linkages are through technology parks. Systematic reforms in University – Economic sector Partnerships in such countries have made universities in those countries upgrade to centres of innovation. Thus, linkages and partnerships are widely used all over the world to increase the research output of universities as well as quality research in these nations.

According to Gichaga et al. (2005), Kenyan universities have begun to establish both technology and science parks. Strong linkages and partnerships between universities and economic sector enhance dissemination and utilization of research findings and innovations emanating from the universities.

This also enables universities to access resources available in the private sector, provide platforms for consensus regarding policies on strategic areas of the economy hence pool human, physical and financial resources. Such linkages and partnerships are also necessary for diversification of financing and incorporation of talent in the governance structures and provide an opportunity for identifying community needs and enhance the capacity for community involvement and improvement.

A study commissioned by Commission for Higher Education (2013) confirmed that there are some collaboration efforts between economic sector and universities in Kenya. Internship and industrial attachments are a requirement in professional degree programmes such as business, law, engineering and ICT in Kenyan universities. Some private universities such as Strathmore University and United States International University have an attachment requirement for all their degree programmes. These attachments result in some level of collaboration between the universities and economic sector. In 2006, Safaricom Kenya Limited, a leading mobile communications company, entered into an agreement with Moi University to set up and support a modern telecommunications laboratory. The linkage will also offer faculty members opportunities to upgrade their skills through a faculty internship programme (Gichaga et al., 2005).

A few private universities also involve local economic sector during the curriculum development process and just a few professional bodies work closely with the universities. The university-based student associations and clubs have been working closely with other professional bodies like those for accounting or marketing.

The world's largest student organization has chapters in most of the Kenyan universities and coordinates interactions and internships in local and international economic sectors and organizations. Most of the universities also keep in touch with local economic sector through their respective alumni associations and placement offices (Gichaga, 2005).

Some of the private universities in Kenya require each student to undertake a community service attachment with not-for-profit organizations. These include schools, hospitals, and community-based organizations working in the informal settlements. The objective is to develop a community service culture among students. Public universities also have community outreach programmes through co curricular activities, although community service is not integrated in the curricula of most degree programmes. For example, the Student in Free Enterprise (SIFE) programme at all the universities in Kenya encourages students to develop social entrepreneurship projects to solve community problems.

Experience from Rhodes University in South Africa showed that community outreach programmes underpinned by a specific policy on student volunteerism can enhance the university brand and increase students' skills in community mobilization. University linkages and partnerships will therefore lead to progressive innovative institutions whose mandates are informed and enriched by the experiences, expertise and resources of these partners. The partners on the other hand gain by tapping the intellectual and creative energy of the universities. The overall achievement of these partnerships is the production of more relevant knowledge and skills for economic development. The successful case studies of university linkages and partnerships in the developed countries cited above emerged through deliberate and specific reforms that were underpinned by strong political will and government and institutional support.

There is need for a paradigm shift that ensures that universities and collaborating entities mutually reinforce their strengths. Professional bodies like the Kenya Medical and Dentistry Association, the Kenya Engineering Association, the Kenya National Academy of Sciences, and other discipline professional bodies serve useful mandates whose formal linkages with the universities would improve the services they provide. The professional associations' membership is composed of individual academics, civil servants and private sector experts. Holding of joint activities between the universities and professional bodies will improve learning and induct students into professional ethics. Furthermore, supervision of interns is an area that stands to improve once the professional associations take it as their responsibility.

Despite the linkage efforts highlighted, anecdotal evidence suggests that most of the links with international universities are not well structured. They are particularly weak in the area of intellectual property rights (IPR) because most Kenyan universities do not yet have operational IPR policies. Consequently, it is possible for a university to lose IPR to a foreign university. In fact, most universities have not developed guidelines for faculty collaboration with researchers at other universities. Collaboration beyond student exchange is normally based on common research interests. It assumes that faculty in both universities are equally active in research. The limited research output of Kenyan lecturers reduces the opportunities for collaboration with economic sector and foreign universities. At present, there is no university in Kenya that has a chair in any field of study that is sponsored by local economic sector. This is because the multinational manufacturing companies undertake their research in the countries of their origin. Incentives should be provided to financial and utility companies to support chairs in their respective areas.

This study has established that local government research institutions are the main source of technology transfer for manufacturing firms in Kenya, although the firms still indicated local universities as their priority number one as a source of technology. The local government research institutions act as training ground for the organization by providing trained manpower to young graduates who later find jobs among the manufacturing firms, or by providing training opportunities to people working in the industry who are either sponsored by their employers or are self sponsored to update their technical and/or managerial skills while still on employment. The fact that local public universities were still rated the highest is an indication of opportunities in the industry that are not being harnessed. It shows that manufacturing firms still rate universities highly as a source of technology, and perhaps the problem is that universities are not utilizing this favourable rating to strengthen the linkage between themselves and the industry.

Munyoki et al. (2011) in their study on the extent to which university- industry linkage exists in Kenya of medium and large manufacturing firms in selected industries in Kenya, established that that local government research institutions are the main source of technology transfer for manufacturing firms in Kenya, although the firms still indicated local universities as their priority number one as a source of technology. They noted that the fact that local public universities were still rated the highest is an indication of opportunities in the industry that are not being harnessed. They posited that the fact that manufacturing firms still rate universities highly as a source of technology, and perhaps the problem is that universities are not utilizing this favourable rating to strengthen the linkage between themselves and the industry.

The rapid expansion of university education in Kenya has led to a number of challenges. According to Martin (2000), low funding from the exchequer, increased enrolment, limited access compared to the population level, increased enrolment without commensurate improvement in available facilities, gender inequality, and a low research capacity, are some of the problems facing universities in the region. These problems have led to fears that quality of education is in a downward trend in most universities. Research is one of the core pillars of the university system. Publication of research findings in reputable journals is one of the ways in which these findings are widely disseminated to stakeholders. Court and Ghai (1974) noted that research and publishing by faculty has sharply dropped over the last few years. Due to heavy teaching responsibilities, brought about by the rising student numbers, plus the need to undertake part time teaching so as to make some extra money to supplement the meagre pay, faculty are not keen on undertaking meaningful research and publishing their work.

Globally, the environment of higher education is facing relentless and rapid change. These circumstances underscore the crucial role of leadership and management in maintaining morale, enhancing productivity, and helping staff at all institutional levels cope with momentous and rapid change (Sifuna, 1998). Those in higher education management and leadership positions are finding it essential that they understand shifting demographics, new technologies, the commercialization of higher education, the changing relationships between institutions and governments and the move from an industrial to an information society.

Particularly in the developing world, higher education institutions must be poised to create the human capital necessary to keep pace with the knowledge revolution. Current leaders must be trained, new leaders prepared, and students identified who will both lead and study higher education for the future.

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Public universities in Kenya have traditionally relied on government funding to carry out their activities. Due to the harsh economic situations witnessed by the region over the recent past, Government support to these institutions has seen a steady decline, and the universities have been forced to operate under very tight budgets. The situation has not been made any better by the structural adjustment programmes prescribed by our bilateral partners. The universities have therefore been forced to rethink their strategy, and possibly look for extra sources of financing including establishing income-generating activities (Chacha, 2004).

According to Weidman (1995), the swiftness of ICT developments, their increasing spread and availability, the nature of their content and their declining prices, are having major implications for learning. There is need to tap the potential of ICT to enhance data collection and analysis, and to strengthen management systems in educational institutions; to improve access to education by remote and disadvantaged communities; to support initial and continuing professional development of teachers; and to provide opportunities to communicate across classrooms and cultures. Most universities in Kenya have very limited access to modern computing and communications technology, so it is increasingly difficult for teachers and students to keep abreast of current developments in their academic areas.

Universities worldwide are in a fix, caught between severe budget cuts and a flood of students in search of useful degrees. In Kenya, overcrowding, low budgets and staff retention problems have contributed to inefficiency and declining academic standards. Students lucky enough to get a university degree have no guarantee of finding employment. Whereas in the 1970s, university graduates were able to step into managerial-level civil service posts, today's job prospects are less obvious, due to tough structural adjustment programmes and recruitment restrictions (Sifuna, 1998).

According to Weidman (1995), Staff recruitment is another area which lags behind and impacts negatively on teaching and research. Up to two-thirds of university teachers have had no initial pedagogical training. Most of these institutions are relying on individuals who have not acquired their highest level of academic training as lecturers. To improve their efficiency and effectiveness in delivering their services, staff, and especially the academic staff, must be trained continually in relevant areas. Universities must have a clear training policy, outlining their strategy for human resource development, instead of the ad hoc procedures currently followed in most of these institutions.

A crucially important component of any university system – and which is often ignored in most university decisions – is the student welfare. National and institutional decision-makers must place students and their needs at the centre of their concerns, and must consider them as major partners and responsible stakeholders in the renewal of higher education. This must include student involvement in issues that affect that level of education, in evaluation, the renovation of teaching methods and curricula, and in the framework of policy formulation and institutional management. As students have the right to organize and represent themselves, their involvement in these issues must be guaranteed (Chacha, 2004).

According to Sifuna (1998), the participation of women in higher education is very low in Kenya, in large part because of traditional cultural values that emphasize women's roles as wife and mother. Women in Kenya are underrepresented in HE institutions as students and as workers. While gender disparities in students' enrolment exist at all levels of HE, they are particularly wide at higher degree levels and in science, mathematics and technology oriented subjects.

At the same time, women are underrepresented in teaching and in the administration of these institutions. Further, women academics are concentrated in the lower ranks of the hierarchy and in the traditional 'female' social science and education disciplines while as administrators they are few and far in between in the higher ranks of HE administration.

The dawn of a global knowledge society with information-driven economies and expansions in international higher education markets is placing new demands on them to search for more innovative approaches in academic course provisions; revenue generation; uncertain educational quality; institutional governance, and human resource management and to address longstanding difficulties caused by rapid enrolments; financial constraints; frequent labour strife and brain drain (Chacha, 2004).

2.6 Resource Conditions and Industry Forces

Internal resource conditions inject critical influence in determining strategic options intended to realise superior firm performance. Resource Based View attributes primary role of internal resource conditions to firm performance (Wernerfelt, 1984 and Collis and Montgomery, 1995).

This view looks at a firm as a pool of both tangible and intangible resources embodied in skills and in the interactions between people and systems. Intangible resources are unique to each firm and, when a firm finds itself with different uses for its excess resources, it will often choose those combinations that are tied most closely with its previous activities in order to realise sustainable competitive advantage by creating value, rareness, non-substitutability and inimitability in the resource combinations. The question of value is intended to ascertain whether or not a particular resource of a firm is strategically relevant.

If the firm receives a benefit that outweighs the carrying cost of a strategy, then it is concluded that the resource is valuable and is therefore a potential source of competitive advantage leading to better performance. According to Barney (1991), value is a resource advantage creating condition that enable a firm to employ a value-creating strategy, by either outperforming its competitors or reduce its own weaknesses hence appeal to its internal and external customers. The resources of an organisation must be geared towards continuous improvement, superior quality and some level of prestige.

Rareness seeks to establish whether a strategy creates a difference between a firm and its competitors, such that the firm realizes some advantage and superior performance from the difference. Rareness is therefore tied to the assumption of resource or strategy heterogeneity. A resource or strategy is considered rare if so few firms possess a similar resource or strategy that nearly perfect competition is not observed (Barney, 1991).

Inimitability refers to inability of competitors in an industry to copy a firm's bundle of resources. A firm can expect to sustain its competitive advantage and superior performance if other firms face a cost disadvantage in trying to imitate its valuable and rare strategy or resource. Intangible resources are usually more difficult to imitate and therefore are more likely to be sources of sustained competitive advantage.
Strategically combined resources are more difficult to imitate than a single one. According to Carter and Ruefli (2006), inimitability is perhaps the most important predictor of organizational performance as a firm can obtain superior returns only when other firms are unable to imitate its resources and capabilities, otherwise these resources and capabilities would be less rare or valuable, and substitutability would become irrelevant.

For a firm to achieve non-substitutability condition there must not be strategically equivalent valuable resources that are themselves either not rare or imitable. If two resources can be utilized separately to implement the same strategy then they are strategically equivalent but are substitutable and therefore not sources of sustained competitive advantage (Barney, 1991; Collis and Montgomery, 1995).

Dynamic capabilities ensure that firms adapt to industry changes which organisational behaviour perspective analyses the impact of individual and group behaviour on organisational performance (Carmeli, 2004). The extent to which an organisation depends on the resources of other organisations also influences its competitive strength and performance.

Industry forces are generically prescribed by Porter (1979)'s five forces model. The model defines competitive strategy as taking defensive and offensive actions to cope successfully with the five competitive forces. The weight of five forces model determines the ability of firms involved to make a profit. If all forces are high, profits will be limited. Conversely, if the forces are weak, it is theoretically possible to generate a significant profit. The essential point is therefore to prioritize these forces so as to identify the key success factors in the industry, implying that the strategic elements must be mastered to gain a competitive advantage.

The level of compliance to environmental demands posed by stakeholder's norms and values also forms critical component of industry forces. The five forces model constitutes bargaining power of buyers, bargaining power of suppliers, threat of entry, threat of substitution and rivalry among industry incumbents.

The bargaining power of customers influences the market and this influence occurs through their ability to negotiate. According to Porter (1981), influence on the price and sales conditions on terms of payment and associated services determine the profitability of the firm. The power of customers is high when they are concentrated, suppliers are numerous and dispersed, there are sources of supply substitution, cost of transfer is low and predictable when the customer changes supplier and when there is a threat to integrate backwards from the customers.

The bargaining power of suppliers mostly manifests in terms of cost or quality. The ability of suppliers to impose conditions on industry has a direct impact and is proportional to the customer. A small number of suppliers, a strong brand, and highly differentiated products are all factors that increase the cost of switching and therefore the power thereof.

On the threat of substitutes, Porter (1981) stipulates that substitutes are not part of the market, but represent an alternative to offer. It may be of different products to meet the same need or product affecting demand. The substitutes are characterized by a cross-elasticity which is positive. The intensity of competition within the sector also manifests when competitors struggle within the industry to increase or simply maintain their position. The competition between firms can be more or less intense, depending on the strategic nature of the sector, the attractiveness of the market, development prospects, existence of barriers to entry and exit, the number, size and diversity of competitors, importance of fixed costs, possibility of achieving economies of scale, character banal and perishable goods.

Concerning the threat of potential entrants Porter (1981) states that the arrival of new competitors is influenced by barriers to entry, the initial investment required, tickets, patents already in place, standards, protectionist measures, the image of the industry and companies already established, cultural barriers and technical standards. All these facilities make entry more difficult for another firm. Industry rivalry among existing competitors makes it difficult for firms to expand market share.

2.7 Organizational Performance and Measurement

Organizational performance and survival result from competitive advantage that is sustainable for at least within a foreseeable future rather than a once off measured profitability level. According to Kaplan and Norton (2008),balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and non-profit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals. They argued that in addition to financial measures, other non financial perspectives assist in 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.

Resources are those assets owned or controlled by a firm. The key dimension of differences in strategies and performance levels among competitors within an industry is the existence of unique firm characteristics capable of producing core resources that are difficult to imitate (Wernerfelt, 1984; Barney, 1986; Peteraf, 1993).

According to Wernerfelt (1984), firms possessing valuable, rare resources and capabilities would attain competitive advantage, which would in turn improve their performance. Carmeli and Tishler (2004) examined 99 local government authorities in Israel for the relationships of a set of intangible resources (managerial capabilities, human capital, perceived organizational reputation, internal auditing, labour relations, and organizational culture) with a set of multi-performance measures (financial performance, municipal development, internal migration, and employment rate).

The results from the multiple regression analysis have shown that all intangible resources variables were positively and significantly related to organizational performance variables. Furthermore, the findings of their study have identified that organizational culture and perceived organizational reputation were the two most significant variables relating to organizational performance in the Israel government authorities.

The performance indicators of higher learning institutions reflect both quantitative and qualitative approaches. In their study of university education and economic sector collaborations in Paris, Chatterton and Goddard (2001) sampled 35 public universities and used proportion of graduates pursuing further studies, proportion of students sponsored by potential employers for skills training and university budgetary allocations for linkage activities as indicators of university performance. They generally established a proposition that the more the university strategies reflect economic sector linkage attributes, the higher the quality of its education hence the higher the linkage performance. After researching on 80% of universities in United Kingdom, Lynch and Baines (2004) showed that it is appropriate to use RBV and five forces model to guide strategy development for a university.

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They argued that the two approaches can be applied to the national system of competitive United Kingdom's higher education and further internationally. Their findings indicated that institutional performance is interrelated to the competitive advantage of linkages between higher institutions and economic sector. They concluded that performance of universities should be measured in line with their linkages to the economic sector which they serve and not in isolation.

There has been extensive argumentation regarding university accountability, the evaluation of their performance (in the educational and administrative operation) and the publication of results with a view to more objective decision making (Fuhrman, 2003; King, 2000; Goertz, 2001; Welsh, 2002; Metcalf, 2003, and Bolton, 2003). Decisions may be taken by students aiming at choosing a university for studies, by the state aiming at a rational base to allocate resources and an imprint of higher education competitiveness or by the institutions themselves aiming at introducing changes and improvement wherever necessary. Universities do not constitute individualised organizational units but they operate and affect the wider economic and social system in which they belong. They are therefore accountable to the academic staff they employ, the state, the students and the society at large. Consequently, the evaluation of their performance proves to be a highly significant process for university institutions with many receivers of its results. Universities are accountable to the state and all stakeholders.

Globalization encourages mobility of academic staff and students and hence stresses the need for international comparability of higher education systems. This calls for comparative measurement of a university performance and not in isolation.

Similar study programmes face serious global competition among higher education institutions hence the need to create attractive educational multi-cultural environments and the trend towards university collaboration. Universities must maximise every opportunity to improve and eliminate institutional weaknesses. They should have a suitable and reliable management system with processes and mechanisms of performance measurement that would allow comparisons and improvement (Diamond, 2002 and Metcalf, 2003).

The effective management of any higher education system presupposes evaluation of results in institutional, departmental and study programme level. So, many evaluation approaches have been developed and successfully implemented globally with similarities and differences. Evaluation of university performance is a basic priority of the state, which means designing the necessary legal framework for university evaluation, establishing independent actors to undertake the evaluation procedure and developing performance evaluation. Different approaches in university performance evaluation are caused by university type and profile, diverse external environment in which each university operates and the priorities of the higher education systems of each country. Moreover, the difficulties in the precise definition of certain elements in the discipline of higher education have also contributed in the development of many definitions, processes and systems of evaluation.

According to (Fuhrman, 2003), university performance evaluation is achieved through typical evaluation, focusing in the total quality management the study programme, the quality of an institution in every aspect of each operation and compliance with general expected standards with higher education sector.

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University performance can also be evaluated through accreditation, which is the procedure by which a private or a state-independent actor evaluates the quality of an institution or a study programme with the view to certify that it meets specific and pre-defined standards (Vlasceanu et al., 2004). The result of the accreditation procedure will provide the awarding of a status, recognition or a license for operation for a certain period of time. It may include an initial self study and external evaluation by experts. Its main objective is to maintain and improve quality in a higher education institution or study programme.

According to Vlasceanu et al. (2004), benchmarking is another paramount approach to evaluating higher education performance. It is a systematic method to collect and present information regarding the performance of organizational units and allow comparisons with the aim to establishing best practices, identifying performance weaknesses and strong points. It is a diagnostic, self assessment and learning tool and it constitutes a dynamic process of learning and performance comparison. Benchmarking may be internal, external competitive, external collaborative, external cross sectional or implicit. Its methodology can be based on an excellence model, be horizontal or vertical or even be based on specific performance indicators sets (Alstete, 1995). Its main idea is to supply the institutional administration with an external reference point or a standard to evaluate quality or the cost of internal activities, practices and procedures.

The other approach to evaluating university performance is through ranking Systems. This is an established technique used to present the ranking of a university in comparison with other universities in terms of their performance. They provide information to students, university administration and stakeholders regarding the quality of universities.

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Even though there are many problems regarding their methodology and scientific base and validity of the systems, they are still popular and a means of initiating improvements. Among the performance evaluation approaches, the most popular currently is global webomatric rankings of universities.

Balance score card is a measurement tool which considers both financial and non financial perspectives of organisational performance. Kaplan and Norton (2008) noted that accurate funding data will always be a priority, and managers will do whatever necessary to provide it and that quite often there is more than enough handling and processing of financial data. Financial indicators used include net surplus and scholarship/grants awarded to learners. Net profit, also referred to as the bottom line, net income, or net earnings is a measure of the profitability of a venture after accounting for all costs. It is the money left over after paying all the expenses of an endeavour. Net profit is an indicator of appropriate financial health of an organization and its ability to expand and achieve more growth and stability.

Grants and scholarships are the most desirable types of funding that learners can receive to pay for you're the cost of education, since they don't need to be repaid. Typically, most sponsors normally make payments directly to the institution where the learner is. This indicator reflects the stakeholder approval of a given university. Universities perceived to be of low quality would not benefit from such grants and scholarship awards for groups of students. According to Kaplan and Norton (2008), the business process perspective refers to internal business processes. Metrics based on this perspective allow the managers to know how well their business is running, and whether its products and services conform to customer requirements thus fulfilling organizational mission.

Collaborative activities, stakeholder conferences, industry visits and invited guest speakers were used as internal business process perspective. As performance indicators they reflect the coordination and impact a university makes at corporate level and with the economic sector. As part of learning process, these activities enable learners to get insight regarding the internal working environment of a company and how a company functions, as well as useful information related to the practical aspects of the educational course which cannot be visualized in a normal lecture in a classroom set up.

Collaborative activities are considered one of the most tactical methods of linking to the economic sector. They provide learners with an opportunity to learn practically through interaction, working methods and employment practices. Moreover, they give exposure to learners from an academic point of view. According to Karanja (2011), Collaborative activities bring together academicians and experts with varied skills and experiences to exchange knowledge and ideas. This then provides in-depth analysis of subjects and update of knowledge of the participants.

The balanced scorecard model suggests that learning and growth perspective should include employee training and corporate cultural attitudes related to both individual and corporate self-improvement. In a knowledge-worker organization, people are the only repository of knowledge and the main resource. In the current climate of rapid technological change, it is becoming necessary for knowledge workers to be in a continuous learning mode. Metrics can be put into place to guide managers in focusing training funds where they can help the most. Learning and growth constitute the essential foundation for success of any knowledge-worker organization.

Learning and growth perspective indicators used include teacher to student and supervisor to student ratios. Teacher to student ratio is the number of teachers divided by the number of learners in a given institution. Supervisor to student ratio is the number of research supervisors divided by the number of students undertaking research in a given institution. Smaller number of students per every teacher or research supervisor is widely believed to benefit all learners because of individual attention from teachers or research supervisor. Low-attaining learners are seen to benefit more where the content is complex. Learners in large groups drift off task because of too much instruction from the teacher or research supervisor to the whole group instead of individual attention, and low-attaining students are most affected. Reasonable ratios tend to reduce the learners achievement gap. As performance indicators, the ratios reflect the level of compliance to quality academic standards. According to Spyros and Vicki (2009), one teacher should ideally teach not more than forty students in a class and that every research supervisor should be assigned at most five research students.

According to Aguillo et al. (2006), the ranking web or webometrics is the largest academic ranking of higher education institutions. Since 2004 an independent, objective, free, open scientific exercise is performed by the Cyber metrics Lab (Spanish National Research Council, CSIC) for the providing reliable, multidimensional, updated and useful information about the performance of universities from all over the world based on their web presence and impact. The original aim of the ranking is to promote academic web presence, supporting the Open Access initiatives for increasing significantly the transfer of scientific and cultural knowledge generated by the universities to the whole Society.

In order to achieve this objective, the publication of rankings is one of the most powerful and successful tools for starting and consolidating the processes of change in the academia, increasing the scholars' commitment and setting up badly needed long term strategies. Aguillo et al. (2006) also noted that Web indicators are considered as proxies in the correct, comprehensive, deep evaluation of the university global performance, taking into account its activities and outputs and their relevance and impact.

The ranking was therefore used as an indicator of customer perspective to reflect the level of educational value and reputation that stakeholders attach to a given university. Thus, the universities consistently ranked at the top were considered to reflect greater stakeholder approval. The recent popularity of world university rankings amplifies the higher education reputation race. The global university webomatrics ranking provides extra stimuli for both policy-makers, and higher education institutions to try to conquer higher positions at the global ladders of institutional reputation. Because it largely tend to favour traditional academic performance, particularly in research, these ranking instruments lead to an increase of popularity of top ranked institutions. Rankings stimulate universities to maintain and even increase the diversity of higher education systems. The ranking has some correlation to institutional performance as it creates competition among players in the same industry.

2.8 Previous Studies and Knowledge Gaps

Previous studies undertaken by various researchers reveal conceptual, contextual and methodological research gaps. The methodological gaps include different sample sizes taken from varying sizes of population. While some studies have concentrated only on public universities, others have sampled both public and private universities.

Table 2.1 Research Gaps and Contributions to Knowledge

Researcher (s)	Studies	Methodology Used	Findings	Knowledge Gaps	Current Study Focus
Munyoki et al. (2011)	Extent to which university-industry linkage exists in Kenya: A study of medium and large manufacturing firms in selected industries in Kenya	Descriptive design approach of the cross sectional nature of medium and large multinational and indigenous manufacturing firms in Kenya	Local government research institutions are the main source of technology transfer for manufacturing firms in Kenya, although the firms still indicated local universities as their priority number one as a source of technology. Multinational firms rely more on imported technology than the indigenous firms, which supports the hypothesis that manufacturing firms rely more on imported technology than indigenous firms.	The study concentrated on public universities only. study focused only on technology transfer to investigate university-industry linkage	This study focused on both public and private universities incorporated in Kenya This study identified additional linkage strategies such as curriculum orientation and attachment focus plus moderating competitive forces
Karanja (2011)	Mending the Bridge between Higher Institutions of Learning and Industry	A Case Study of School of Engineering, University of Nairobi.	Improved university education and economic sector linkage can be realised through relevant and market driven curricula, enhancing industrial attachments, upgrading and increasing Teaching and learning facilities and fostering research between economic sector and higher learning institutions.	The investigations were not based on the main stream theories (RBV and IO) in explaining firm's performance. The study was also based on only school of engineering University of Nairobi	The study explored 44 universities in Kenya. RBV and Five forces model were used as analytical lens to investigate the relationship between linkage strategies and performance of universities.

Source: *Author, 2014*

Table 2.1 Cont…

Grant (2001)	The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation	A cross sectional survey of 20 companies among the U.S top 100 companies with the highest ratios of stock price to book value	Resources and capabilities of a firm are the central considerations in formulating its strategy. A firm's resources are the primary constants upon which a firm can establish its identity and frame its strategy A firm's resources are the primary sources of a firm's profitability	The study did not establish the moderating role of recourse conditions on the relationship between strategy and performance. The study sample was restricted to only 20 top 100 companies and therefore lacked diversity and heterogeneity	The study explored aspects of moderating effects of firm resource conditions. The study was also contextualised in Kenyan environment with a bigger sample of 44 universities
Mahdi et al. (2012)	A Survey Of Market Orientation and Performance Within Asian Countries	A literature review of relationship between industry forces and performance among 61 articles within Asian countries since 1995 to 2010.	Upward trend in studying industry forces and performance relationship among strategy researchers. Industry forces variables directly relate to and at the same time moderate performance within manufacturing and service industries. Competitive industry influence is prominent subject that has emerged as a significant predictor of performance.	The study did not compare the two competing forces (resource conditions and industry forces) in determining performance of firms	The study was contextualised in Kenyan environment with a bigger sample of 44 universities The study explored aspects of moderating effects of firm resource conditions.
Chatterton and Goddard (2001)	Use of the RBV and knowledge based view to improve the understanding of the process for the initiation and function of U-I Collaboration.	Cross-sectional survey of 35 universities in Britain	persistent lack of an integrative framework for the management of research collaborations	The model did not delineate clear lines of relationships among variables as a conceptual gap. Contextual gap is due to the fact that the generalisations were made based on the British Higher learning institutions only	The study explored aspects of cooperation among universities and established the relative roles of strategic resource conditions and industry forces. The study was contextualised in Kenya

Source: Author, 2014

Table 2.1 Cont…

Sven et al. (2007).	Market Orientation and Performance in the Service Industry: A Data Envelopment Analysis	A cross-sectional sample survey of 530 hotels within Norwegian hotel industry	Industry forces have only a modest effect on relative productivity and no effect on return on assets. The strongest effect of industry forces on performance was found when applying the subjective performance measures	The study lacked the comparative aspects of the two competitive forces. No moderating models were established to measure the level of influence	The study involved comparative aspects of the two competitive forces. Moderating models were established to measure the separate and joint effects of competitive forces on the relationship between strategy and performance.
Makhija (2003)	Comparing the Resource-Based and Market-Based Views Of the Firm: Empirical Evidence From Czech Privatization	Cross-sectional sample survey of 988 Czech firms undergoing privatization.	RBV-driven variables are remarkably better at explaining performance of Czech firms in the period of privatization than industry-driven variables.	The study did not establish regression models to demonstrate moderating or mediating effects on performance. The study did not consider the competitive forces as moderators of strategy-performance relationship	The study established regression models to demonstrate moderating effects on performance. The study also considered the competitive forces as moderators of strategy-performance relationship
Lui (2005)	Sources of superior performance: Industry vs. firm effects in the Taiwan IT Sectors	A cross-sectional survey on 28% of IT Sectoral level of Taiwan	Firm effects, which arise from various technological resources, and capabilities that are consistent with the resource-based view of the firm, have a large influence on performance, and industry effects, which are from structural characteristics, have a little impact on performance differentials among IT firms of Taiwan.	The study did not establish regression models to demonstrate moderating or mediating effects on performance. The study did not consider the competitive forces as moderators of strategy-performance relationship	The study established regression models to demonstrate moderating effects on performance. The study also considered the competitive forces as moderators of strategy-performance relationship

*Source: **Author, 2014***

Table 2.1 Cont…

Lynch and Baines (2004)	A Competitive Positioning Analysis of UK Universities	A cross-sectional survey of 80% of universities in United Kingdom	RBV and five forces model are essential models in guiding strategy development for university. Competitive approaches are applicable to competitive national system of United Kingdom's universities and further internationally.	The study did not cover the relative roles of five forces model and RBV in explaining performance of university. The findings were based on 80% of universities in United Kingdom	The study analysed the relative roles of resource conditions and industry forces in influencing the linkage between universities and economic sector.
Ozsoy (2011)	The Contribution of Higher Education to Economic Development	A cross-sectional survey of 179 universities across Europe, Latin America and Sub-Saharan Africa and established that	The attributes required for the universities to sustain and maintain their competitive advantage include Intellectual capital and that higher education contributes 10.3% and 19.0% economic benefits to social and private sector respectively.	The study did not cover the influence of competitive forces in determining the performance of a university. It overemphasised the importance of intellectual capital at the expense of other critical determinants of university performance	The study analysed contributions of linkage strategies and the influence of competitive forces on university performance in Kenyan context. More determinants were used in addition to human factor.
Ogawa (2002)	Challenging the Traditional Organization of Japanese Universities	Cross-sectional survey of 95 public and 597 private universities in Japan	The core Nordic university values are considered to be inspired teaching, unique talent and researcher's integrity.	The study did not explore other performance determinant theories such as five forces model. It was based in Japan specifically with 95 public and 597 private universities. No relationship functions were established.	Functional relationships between variables were established to bridge the methodological gaps. The study was contextualised in Kenya with 44 universities.

Source: Author, 2014

Contextual gaps arise from generalisations based on studies from different countries and learning institutions, most of which have been done from United Kingdom and just a few from Africa. Arising from the foregoing review, various knowledge gaps and how they

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were addressed in the study have been identified and a summarised in Table 2.1. It gives a summary of researchers, studies they undertook, methodologies used, findings, knowledge gaps identified in terms of context and methodology and the how the current study bridged the identified gaps.

2.9 Hypotheses of the Study

The following hypotheses are derived from the literature debate.

Hypothesis 1: There is a significant relationship between linkage strategies and organisational performance.

Hypothesis 1 was formulated to test if there is any significant direct relationship between linkage strategies and university performance. It is represented by H1 in the conceptual model (Fig. 2.1). It was used to test the assumption that universities with strong economic sector linkage components in their strategies would record superior performance while those with weak economic sector linkage components in their strategies would record poor performance. Thus it was used to test the first objective which was set to establish the relationship between linkage strategies and performance of universities in Kenya.

Hypothesis 2: There is a moderating effect of resource conditions on the relationship between linkage strategies and organisational performance.

Hypothesis 2 was formulated to test if there is any moderating effect of resource conditions on the relationship between linkage strategies and university performance. It is represented by H2 in the conceptual model (Fig.2.1). It was used to test the assumption that high university resource conditions such as high value would strengthen the relationship between linkage strategies and university performance while low university resource conditions would weaken the relationship.

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Thus it was used to test the first objective which was set to determine the moderating effect of resource conditions on the relationship between linkage strategies and performance of universities in Kenya.

Hypothesis 3: There is a moderating effect of industry forces on the relationship between linkage strategies and organisational performance.

Hypothesis 3 was formulated to test if there is any moderating effect of resource conditions on the relationship between linkage strategies and university performance. It is represented by H3 in the conceptual model (Fig.2.1). It was used to test the assumption that high industry forces such as high bargaining power of buyers would weaken the relationship between linkage strategies and university performance while low industry forces would strengthen the relationship between linkage strategies and university performance. Thus it was used to test the first objective which was set to determine the moderating effect of industry forces on the relationship between linkage strategies and performance of universities in Kenya.

Hypothesis 4: The joint moderating effect of resource conditions and industry forces on the relationship between linkage strategies and organisational performance is different from their separate effects.

Hypothesis 4 was formulated to test if the joint moderating effect of resource conditions and industry forces on the relationship between linkage strategies and organisational performance is different from their separate effects. It is represented by H4 in the conceptual model (Fig.2.1). Porter (1981) noted that it has been difficult to distinguish the relative roles of resources and industry forces in explaining firm performance and that most scholars attribute firm performance to both the competitive forces.

After testing the separate moderating effect of each of the competitive forces, they were then joined by interacting the terms to test for any joint effects and the results compared with independent separate effects. Thus it was used to test the first objective which was set to establish whether the joint moderating effect of resource conditions and industry forces on the relationship between linkage strategies and university performance is different from their separate effects.

2.10 Conceptual Framework

An integrated framework to respond to the knowledge gaps identified in the literature review in this study has been designed with four components. While linkage strategies constitute independent variables, competitive forces, consisting of resource conditions and industry forces constitute the moderating variables.

The dependent variable is the organisational performance. The study determined the direct relationship between linkage strategies and organisational performance (H1). Further, both separate and joint moderating effects of resource conditions and industry forces on the relationship between linkage strategies and organisational performance were established using H2, H3 and H4.

Figure 2.1: Conceptual Model

Linkage Strategies

Curriculum orientation

Industrial attachment focus

Teaching and learning focus

Collaborative Research

Resource Conditions
Dependence level
Value

Rareness

Inimitability

 Non-substitutability

Dynamic capability
Individual and group behaviour

Moderating Variables

Organisational Performance

Financial Measure-Net Surplus

Learning and Growth

Customer Perspective

 Internal Business Process

Independent Variables

Dependent Variable

Industry Forces
Stake holder norms and values
Threat of entry
Threat of substitution
Bargaining power of buyers
Bargaining power of suppliers,
Rivalry among current competitors

Moderating Variables

H1

H2

H3

H4

Source: Author, 2014

Using the contributions of several scholars in the multidisciplinary literature related to performance of higher learning institutions, university educational strategies must be built on the central pillar of the economic sector needs in order to confront the growing competitive future in the context of a turbulent environment. The competitive forces are critical in shaping up the relationship between the linkage strategies and university performance. University performance is based on the linkage nature of strategies which embrace contributions from stakeholders to ensure congruence between organisational systems and the economic sector demands. The whole process is moderated by university resource conditions and industry forces as the two competitive forces.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives a description of the methods and approaches that were adopted in conducting this study. These included the philosophical orientation, research design and the study population. Also elaborated are the type and sources of data, the methods of data collection that were used, reliability and validity tests and measurement of variables. The chapter ends with an explanation of data analysis procedures and techniques that were used.

3.2 Research Philosophy

Scholars in social sciences posit that empirical research is dominated with a number of philosophical orientations. However, on the extreme ends are positivism and phenomenology or interpretivism.

The positivistic philosophical approach is quantitative and dominated by the process of hypothesis testing. The approach is based on objectivity, neutrality, measurement and validity of results. It therefore allows for the operationalisation of various hypothetical concepts as well as generalisation of the results. Positivism maintains that knowledge should be based on real facts and not abstractions so that it is predicted on observations and experiment. As opposed to phenomenological approach, positivism refers to testing an existing theory guiding the study. Hypotheses are set and tested either to reject or accept depending on the results obtained (Comte and Bridges, 1865; Kuhn, 1996).

Phenomenological approach is qualitative in nature and focuses on the researcher's perception and relies on experience and avoids generalisation based on an existing theory (Irungu, 2007). This approach does not begin from an established theory, and then proceed to collect and analyse data to either accept or reject the hypotheses. The approach typically seeks to obtain data, analyse it and then make conclusions regarding the nature and strength of the relationships among the variables based on empirical evidence (Ongore, 2008). It focuses on theory building.

This study was thus guided by positivistic philosophy, which entailed collection of standard data and making comparisons with theories guiding this study. Resource base view and five forces model were the two main theories underpinning the study. They were tested through the four hypotheses for consistencies, inconsistencies or emerging archetypes.

3.3 Research Design

The research design constitutes a logical sequence that connects the empirical data to a study's initial research questions and ultimately to its conclusions (Balta, 2008). The study is a descriptive cross-sectional survey. According to Irungu (2007), descriptive cross-sectional survey is appropriate where the overall objective is to establish whether significant associations among variables exist at some point in time. This study adopted descriptive cross-sectional survey. The cross-sectional approach involved collecting and comparing data from the phenomena as at the time of study. The design employ either qualitative or quantitative data. The combination of qualitative and quantitative data enabled adequate explanation of the variables and predictions in their behaviour without resorting into inquiries of the temporal effect.

The chosen design was deemed appropriate for this study because it improved accuracy in generalising findings since it involved detailed study of a unit. The design enhanced uniform data collection and comparison across respondents. The design was used to identify patterns of convergence that had developed to corroborate the overall interpretation of the relationships and interdependences among the variables.

3.4 Population and Sample of the Study

Population stands for the entire collection of objects we want to study. If it is small enough, we can study it in its entirety. According to Herman and Renz (1998), all items in a population constitute population while sampling is a method of studying from a few selected and representative items, instead of the entire big number of units in order to infer and generalise the population characteristics.

As at the time of this study, there were a total of sixty five (65) universities operating in Kenya as illustrated in Appendix III (Commission for University Education, 2013). Thus, population of this study comprises 65 public and private universities incorporated in Kenya. From the 65, forty seven (47) universities which had undergone at least one (1) graduation cycle were sampled. Out of this, twenty two (22) were public and twenty five (25) were private universities (Appendix IV). This sample size of 47 constitutes 72% of the population and it is way above the required 10% as a representative sample for a homogenous population. According to Kothari (2004), a population sample constituting 10% and above is appropriate if the researcher is dealing with a homogenous population.

3.5 Data Collection

This section gives a description and elaboration of the type and sources of data, the respondents, the data collection instruments and methods that were used.

3.5.1 Type and Sources

Both primary and secondary data were collected and used in the study. Primary data refers to that which was originally collected for the first time. Primary data were obtained from responses to the questionnaire. The respondents completed the questionnaire by themselves over an agreed and specified period, after which the researcher picked the feedback. In other cases where appropriate, the respondents completed the questionnaires in the presence of the researcher.

Secondary data comprised data sets that were already available in universities and other places previously collected for other use other than the current study. Secondary data was mainly obtained from Global University webomatrics ranking's web-site. Some respondents also tabulated data on performance from existing records.

3.5.2 Structure and Study Instrument

A semi-structured questionnaire (Appendix I) was used to collect data. According to Bryman and Bell (2007), a likert scale is a psychometric scale commonly involved in research that employs questionnaires under different scales, and that as opposed to larger scales, five-point scales are better suited when rating against one attribute such as familiarity of issues being investigated among respondents. They also noted that more than five points are preferred when the measurement problem is bi-polar or having two anchor points whose decisions are like to attract several slim boundary considerations, and that most respondents prefer a smaller scale as opposed larger scale.

A five-point scale in non profit organisations was used in previous studies by Herman and Renz (1998). The items were developed from a wide review of literature from which ideas were moderated to suit the concepts and context of this study. The questionnaire for this study was thus designed on a five point likert-type scale. The responses were 1=strongly disagree, 2=disagree, 3=not sure, 4=agree and 5=strongly agree. The four (4) sections in the questionnaire include background of the university, linkage strategies, competitive forces and university performance.

The most critical data captured under section A was on university status as either public or private. Section B sought to interrogate the extent to which university strategies were linked to economic sector demands. Reference was heavily made from the tool previously developed and used by Karanja (2011) while researching on higher education and economic sector linkages. Section C majorly concentrated on organisational resource conditions, with reference to resource based view as highlighted by Barney (1991) and the five forces model by Porter (1979). The questions were designed with reference to the design Grant (2010).

The last section deals with university performance. The questions were developed to measure performance with reference to balanced score card. They therefore captured financial perspective, learning and growth perspective, customer perspective and internal business process perspective.

3.5.3 The Unit of Analysis and Respondents

The unit of analysis in this study is the university. Since the study is majorly based on academic strategies determining university performance, the target respondents were the officers in charge of academic affairs.

Apart from two financial aspects in section D, the rest of the questions concentrated on academic strategies. A total of forty seven (47) questionnaires were distributed, one in each of the forty seven (47) universities. While in some universities the deputy vice chancellor (DVC) academic affairs completed the questionnaire, most of the universities had the registrar academic affairs in charge of academic affairs and therefore completed the questionnaire. Respondents complemented section D of the questionnaires on net surplus and scholarship awards in consultation with their respective finance officers.

3.5.4 Validity Test of the Instrument

Validity is concerned with whether the research findings are really about what they appear to be about (Balta, 2008). There are different measures of validity including construct, content and discriminant validity. Construct validity is used to measure whether the operational definition of variables actually reflect the true theoretical meaning of a concept. Discriminant validity is the degree to which scores on a scale do not correlate with the scores on the other scales defined to measure different constructs. For this study, the focus was on content validity of the instrument. It was tested using expert judgement to confirm whether the theoretical dimensions emerged as conceptualised. The test relied on expert assessment of two (2) senior lecturers at School of Business, University of Nairobi and one (1) professor from Co-operative university college of Kenya, faculty of commerce. Views were also obtained from four (4) colleagues in the doctoral class, specialising in the field of strategic management. In earlier local studies, Awino (2007) used expert opinion on content validity.

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The researcher also benefited from the scrutiny and guidance of doctorial supervisors through their competent reviews of various drafts. The study espoused the views of Dess et al. (1993) that, "when a construct or a set of dimensions exhibits a strong content validity, there is a tendency among researchers to accept them without rigorous testing of other components of validity such as convergent, discriminant or nomological validity" (p. 785).

3.5.5 Reliability Test of the Instrument

Reliability of the instrument refers to the extent to which results are consistent over time. An accurate representation of the total population under study is referred to as reliability. If the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable (Balta, 2008). Reliability test for equivalence was undertaken through questionnaire pretesting by a pilot study of 20 randomly selected universities within the population. Dillman (2000) suggested that a pilot study is conducted to ensure clarity and proper interpretation of the questionnaire by the expected respondents. The feedback obtained helped to revise the scales, address the structure of the questions and the overall design of the questionnaire. As a result, some questions which were ambiguous were reconstructed and duplicated ones were deleted from the original questionnaire before administering the final one to all study respondents. Final version of the questionnaire administered for the field survey is attached in appendix I.

Reliability test for internal consistency of the instrument was measured through Cronbach's alpha coefficient. Kline (1999) noted that accepTable value for Cronbach's alpha is 0.7 or more. According to Nachmias and Nachmias (2004), Cronbach's alpha coefficient is used to measure the reliability of internal consistency of a research in which a Likert type scale with multiple answers is used to collect data.

Cronbach's alpha coefficient was computed from the composite indices of all the independent, moderating and dependent variables used in the study. Each index was computed as the arithmetic mean obtained from all the respondents answering each part of the questionnaire. The alpha scores for each variable are shown in Table 3.1.

Table 3.1: Reliability Test

Part of the Instrument	Variable	Number of items	Cronbach's Alpha Coefficient
Whole instrument	All variables	64	0.998
Section B	Linkage Strategies	27	0.992
Section C (A)	University Resource Conditions	14	0.981
Section C (B)	Industry Forces	12	0.998
Section D	University Performance	11	0.975

Source: Author, 2014

As indicated in Table 3.1 and Appendix IX, the scales of the variables attained cronbach's alpha coefficient above 0.7. This implies that all the measurement items for all the variables are internally consistent.

3.5.6 Multicollinearity Test of Research Variables

According to Levine et.al (2008), multicollinearity occurs when the association between independent variables is so high that their individual prediction of the variation in the dependent variable is affected. To test hypothesis using regression analysis, the study ensured that the basic conditions for the application and interpretation of the results are complied with. The use of regression analysis assumes that the data is normally distributed and that there is independence of errors. Accordingly, Variance Inflation Factor (VFI) and Tolerance statistic were computed to indicate whether a predictor has a strong linear relationship with other predictor (s) for every regression model in chapter five.

Multicollinearity problems are eliminated if VFI value is less than ten (10) and if the corresponding Tolerance value is significantly greater than zero (0). In this study, all the valid relationships and hypotheses tested through regression analysis had VFI less than ten (10) and Tolerance values significantly greater than zero (0).

3.6 Operationalisation of Research Variables

The variables in the study were operationalised to reflect the theoretical assumptions that underpin the conceptual framework for the study. As outlined in Table 3.2, independent, dependent and moderating variables have been operationalised into simple measurable components. According to Chatterton and Goddard (2001) and Kushner and Poole (1996), Likert type scale is useful in assigning quantitative values to qualitative attributes to allow mathematical analysis. However, the disadvantage of Likert type scale is that only a few options are offered, with which respondents may not fully agree or people may become influenced by the way they have answered previous questions with a given pattern. This patterning was broken up by asking reversal questions and to test consistency the responses.

Table 3.2 Operational Definition of the Study Variables

Variables	Operational indicators	Measure	Relevant Question(s)
Linkage Strategies			
Curriculum Orientation	Existence of and adherence to curriculum orientation development and review policy, the frequency of curriculum evaluation and review, Involvement of stakeholders and professional bodies.	5 point Likert type scale	10
Industrial attachment focus	Existence of and adherence to industrial attachment policy, the frequency of attachment policy evaluation and review, length of industrial attachments administered for students.	5 point Likert type scale	10
Teaching and learning focus	Student Centered learning approaches, use of industry benchmarked case studies, qualifications and experience of faculty, use of state of art technologies in teaching.	5 point Likert type scale	10
Collaborative Research	Number of departmental and individual collaborative research done and published, enrolment trends of postgraduate students	5 point Likert type scale	10
Resource Conditions			
Value	Continuous improvement, level of expertise, competence and qualifications, superior quality, prestige, premiership	5 point Likert type scale	11A
Rareness	Uniqueness, peculiarity, ways of differentiation of linkage strategies	5 point Likert type scale	
Non-substitutability	Existence of alternative substitutes to linkage strategies	5 point Likert type scale	
Inimitability	Prevention of duplication, differentiation strategies, inability to copy existing linkage strategies	5 point Likert type scale	
Resource Dependence	The extent of resource dependence on other universities	5 point Likert type scale	
Dynamic Capability	The level of capability to adapt to industry dynamics	5 point Likert type scale	
Individual and Group behaviour	Existence of team work, cooperation, responsibility and accountability	5 point Likert type scale	

Source: Author, 2014

Table 3.2: Cont...

Variables	Operational indicators	Measure	Relevant Question(s)
Industry Forces			
Threat of entry	Number of new competing programs in the industry, the regulations and policies of government on the operation of universities, the minimum number of students required for, the operation of university, the minimum requirements for establishing campuses	5 point Likert type scale	11B
Threat of substitution	Threat of alternative substitutes from public and private universities, threat from foreign institutions of university, threat from private business enterprises	5 point Likert type scale	
Bargaining power of buyers	The influence and power of students, parents, potential employers and sponsors in formulation and implementation of linkage strategies	5 point Likert type scale	
Bargaining power of suppliers	The influence and power of the Ministry of Education, university sponsors and donors, Share holders.	5 point Likert type scale	
Rivalry among current competitors	The increase in the number of universities, the decrease in the number of competing institutions of higher learning, the high intensity of competition between universities in formulation and implementation of linkage strategies	5 point Likert type scale	
Stakeholder Norms and values	Degree of organisational compliance to stakeholder norms and values	5 point Likert type scale	
University Performance			
Financial Measures	Trend on the net surplus/deficit over the last 5 years, Trends on the scholarship or sponsorship awards over the last 5 years	5 point Likert type scale and Direct	12
Learning and Growth Measures	Trend on teacher to student and supervisor to student ratios over the last 5 years	5 point Likert type scale Direct	
Customer Perspective Measures	Trend on global university webomatrics rankings over the last 5 years	5 point Likert type scale Direct	
Internal Business Process Measures	Trend on linkage activities undertaken: number of stake holder conferences held per year, number of collaborative activities with other institutions per year, number of industry visits per year, number of guest speakers invited per year.	5 point Likert type scale Direct	

Source: Author, 2014

Linkage strategies constituted the dependent variables. The determinants of linkage strategies were identified with reference to the work of Karanja (2011). The linkage strategies include curriculum orientation, industrial attachment focus, teaching and learning focus and collaborative research. Competitive forces (resource conditions and industry forces) constituted the moderating variables. Determinants of resource conditions were measured with reference to the work of Barney (1991), who noted that for a firm to attain competitive advantage its strategic resources must meet four resource advantage creating conditions. The four conditions include value, inimitability, non-substitutability and rareness. Individual and group behaviour, dynamic capability and resource dependence were included as additional indicators of favourable determinants of resource conditions.

The industry forces were measured with reference to five forces model of Porter (1979), who documented bargaining power of buyers, bargaining power of suppliers, threat of entry, threat of substitution and rivalry among current competitors as the industry forces that influence organisational performance. These variables were operationalised with reference to the work of Grant (2010). Finally, organisational performance, which constitute dependent variable was operationalised using balanced score card as documented by Kaplan and Norton (2008). The four perspectives involved include financial, learning and growth, customer perspective and internal business process measures.

3.7 Data Analysis

After the closure of the data collection exercise, the researcher embarked on cleaning, coding, editing, correction and sorting data. This included checking the returned questionnaires for completeness and accuracy, missing gaps and any possible error.

Data analysis was based on the forty four (44) questionnaires which were fairly completed and returned to the researcher. At the first level, background information was analyzed to ascertain emerging patterns on surveyed universities, namely university status, number of graduation ceremonies held, length of service, highest level of education attained and the number of academic programmes on offer. Secondly, the data on university performance (Section D) were converted to 5 point Likert type scale for purpose of regression analysis. This was done by calculating average percantege change in the scores over the period provided for each variable. The average proportional changes were computed using geometric mean.

Compared to arithmetic and harmonic means, Aiken and West (1991) noted that goemetric mean (GM) is a specialised measure preferred when calculating average proportional changes in variables over a some period.   The proportional changes were then multiplied by five (5) to convert the measurements to 5 point likert type scale such that 1=strongly disagree, 2=disagree, 3=not sure, 4=agree and 5=strongly agree.

Table 3.3 indicates the specific methods used to convert performance data to 5 point Lickert type scale. Geometric Mean $(GM) = \sqrt[n]{(1+p_1)(1+p_2)...(1+p_n)}$ where $p_1, p_2,...,p_n$ are the proportional changes between two successive years, aggregated over a given period and n is the total number of proportions.

Table 3.3: Conversion of Performance data to 5 point Likert Type Scale

Variable	Method of Conversion to 5 Point Lickert Type Scale
Net surplus and scholarship or grant award (Ksh)	Calculate average proportional change in the amount of net surplus and scholarship or grant awarded over the given period using geometric mean formula, compute GM/30 to compare with the average change then compute the product (GM/30)*5 to convert the result to 5 point Likert type scale.
Total number of lecturers (This variable was used to compute teacher to student ratio)	Calculate the changes in number of lecturers and the corresponding number of students between two successive years. Calculate the teacher to student ratio by dividing the number of teachers by the number of students for every two successive years. Obtain the average proportional change in the ratios over the given period using geometric mean formula, then compute the product (GM*40) to compare with the standard teacher to student ratio (1:40) and then convert to 5 point Likert type scale by computing the product (GM*40*5).
Total number of students	Calculate average proportional change in the number of students over the given period using geometric mean formula, then compute the product (GM*5) to convert the result to 5 point Likert type scale.
Total number of postgraduate students undertaking research (This variable was used to compute supervisor to student ratio)	Calculate the changes in number of supervisors and the corresponding number of post graduate students between two successive years. Calculate the supervisor to student ratio by dividing the number of supervisors by the number of students for every two successive years. Obtain the average proportional change in the ratios over the given period using geometric mean formula, then compute the product (GM*5) to compare with the standard supervisor to student ratio (1:5) and then convert to 5 point Likert type scale by computing the product (GM*5*5).
Universities webomatrics ranking in Kenya	Calculate the average webomatric ranks over the given period using arithmetic mean (AM), then convert to 5 pint Likert type scale by comparing the rank to the 65 universities in Kenya, that have been globally ranked, such that position1 to 10 inclusive =5, position 11 to 20 inclusive =4, position21 to 30 inclusive =3, position 31 to 40 inclusive =2 and position 41 to 65 inclusive =1.
Total number of stake holder conferences held, total number of collaborative activities with other institutions held and total number of guest speakers hosted	Calculate average proportional change in the number of stakeholder conferences held, number of collaborative activities with other institutions held and number of guest speakers invited over the given period using geometric mean formula, compute GM/10 to compare with the average change then compute the product (GM/10)*5 to convert the result to 5 point Likert type scale.
Total number of industry visits made	Calculate average proportional change in the number of industry visits held over the given period using geometric mean formula, compute GM/15 to compare with the average change then compute the product (GM/15)*5 to convert the result to 5 point Likert type scale

Source: Author, 2014

All reversed questions were altered to read in the positive direction such that 1=5, 2=4 and 4=2 and 5=1 for validation purposes. Since the study sought to establish the degree of association (relationship) between variables, and test hypothesized relationships, a combination of descriptive and inferential statistics was used. Descriptive statistics such as count, arithmetic mean, standard deviation and percentages were computed for each variable and composite index for groups of variables to obtain frequencies, compare means and check the dispersion of data.

The analytical models were used to test the hypotheses, test moderating effects and establish regression equations. The variables were represented as follows:

Dependent variable: **Y** = University performance.

Independent variable: X_1 = Linkage Strategies.

Moderating Variables: X_2 = Resource Conditions and X_3 = Industry Forces.

Model 1
$$Y_1 = \alpha_{01} + \beta_{11}X_1 + \varepsilon_1$$
University Performance = f (constant term + linkage strategies + error term).

Model 2
$Y_2 = \alpha_{20} + \beta_{21}X_1 + \beta_{22}X_2 + \varepsilon_{2 \text{ and }} Y_2 = \alpha_{02} + \beta_{12}X_1 + \beta_{22}X_2 + \beta_{32}(X_1{*}X_2) + \varepsilon_2$ (analytical model for testing moderating effect).

University Performance = f (constant term + linkage strategies + resource conditions + interaction term + error term).

Model 3
$Y_3 = \alpha_{30} + \beta_{31}X_1 + \beta_{33}X_3 + \varepsilon_{3 \text{ and }} Y_3 = \alpha_{03} + \beta_{13}X_1 + \beta_{33}X_3 + \beta_{43}(X_1{*}X_3) + \varepsilon_3$ (analytical model for testing moderating effect).

University Performance = f (constant term + linkage strategies + industry forces + interaction term + error term).

Model 4
$Y_4 = \alpha_{40} + \beta_{41}X_1 + \beta_{42}X_2 + \beta_{43}X_3 + \varepsilon_4$ and $Y4 = \alpha_{04} + \beta_{14}X_1 + \beta_{24}X_2 + \beta_{34}X_3 + \beta_{44}(X_1{*}X_2{*}X_3) + \varepsilon_4$ (analytical model for testing moderating effect).

University performance = f (constant term + linkage strategies + resource conditions + industry forces + interaction term + error term).

Generally, **α** is the model constant term which does not vary while **β** is beta coefficient that indicates the strength and direction of relationship between variables, $X_1{*}X_2$, $X1{*}X_3$ and $X_1{*}X_2{*}X_3$ are interaction terms for testing moderating effects, and **ϵ** is the error term or disturbance.

3.8 Hypotheses Testing

For each of the hypothesized relationships, the general forms of the resultant empirical models are presented in Table 3.4. Hypotheses was tested at 95% confidence level ($\alpha=0.05$) and was subjected to regression analysis to determine the influence of competitive forces on the relationship between linkage strategies and organisational performance.

Table 3.4 Summary of Research Objectives, Hypotheses and Empirical Models

Objective	Hypothesis	Type of Analysis	Interpretation of Results
Objective 1 To establish the relationship between linkage strategies and performance of universities in Kenya.	Hypothesis 1 There is a significant relationship between linkage strategies and organisational performance.	Simple stepwise Regression analysis $Y_1 = \alpha_{01}+\beta_{11}X_1+\varepsilon_1$	Coefficient of determination $R^2 =0.7$ or more indicates perfect fit of regression model. ANOVA. F-Test, showing a significant and valid model at $p<0.05$ High collinearity present if tolerance<0 and VIF>10 t-value > 2.5 shows statistical significance
		Pearson's product moment Correlation coefficient (r)	P-vale< 0.05 shows significant correlation between variables r=0.700 or more indicates a strong positive relationship and r=0.300 or less indicates a weak relationship.
Objective 2 To determine the moderating effect of resource conditions on the relationship between linkage strategies and performance of universities in Kenya	Hypothesis 2 There is a moderating effect of resource conditions on the relationship between linkage strategies and organisational performance.	Hierarchical multiple regression analysis $Y2 = \alpha20+\beta21X1 + \beta22X2 +\varepsilon2$	Squared multiple correlation coefficient, R2 =0.7 or more indicates perfect fit of regression model. ANOVA. F-Test, showing a significant and valid model at $p<0.05$ High collinearity present if tolerance<0 and VIF>10 t-value > 2.5 shows statistical significance
		Moderating effect $Y2 = \alpha02+\beta12X1+ \beta22X2+\beta32(X1*X 2) +\varepsilon2.$	Change in squared multiple correlation coefficient ($\Delta R2$) with F-Change (ΔF) of $p<0.05$shows a significant variation in the model fit.

Source: Author, 2014

Table 3.4 Cont...

Objective	Hypothesis	Type of Analysis	Interpretation of Results
Objective 3 To determine the moderating effect of industry forces on the relationship between linkage strategies and performance of universities in Kenya	Hypothesis 3 There is a moderating effect of industry forces on the relationship between linkage strategies and organisational performance.	Hierarchical multiple regression analysis $Y3 = \alpha30 + \beta31X1 + \beta33X3 + \varepsilon3$ Moderating effect $Y3 = \alpha03 + \beta13X1 + \beta33X3 + \beta43(X1*X3) + \varepsilon3$	Squared multiple correlation coefficient, R2 =0.7 or more indicates perfect fit of regression model. ANOVA. F-Test, showing a significant and valid model at $p<0.051$ High collinearity present if tolerance<0 and VIF>10 t-value > 2.5 shows statistical significance Change in squared multiple correlation coefficient ($\Delta R2$) with F-Change (ΔF) of $p<0.05$ shows a significant variation in the model fit.
Objective 4 To establish whether the joint moderating effect of resource conditions and industry forces on the relationship between linkage strategies and university performance is different from their separate effects.	Hypothesis 4 The joint effect of linkage strategies, resource conditions and industry forces on organisational performance is different from their separate effects.	Hierarchical multiple regression analysis $\mathbf{Y_4 = \alpha_{40} + \beta_{41}X_1 + \beta_{42}X_2 + \beta_{43}X_3 + \varepsilon_4}$ Moderating effect $\mathbf{Y_4 = \alpha_{04} + \beta_{14}X_1 + \beta_{24}X_2 + \beta_{34}X_3 + \beta_{44}(X_1*X_2*X_3) + \varepsilon_4}$	Squared multiple correlation coefficient, R^2 =0.7 or more indicates perfect fit of regression model. ANOVA. F-Test, showing a significant and valid model at $p<0.05$ High collinearity present if tolerance<0 and VIF>10 t-value > 2.5 shows statistical significance Change in squared multiple correlation coefficient (ΔR^2) with F-Change (ΔF) of $p<0.05$ shows a significant variation in the model fit.

Source: Author, 2014

Table 3.4 shows a summary of study objectives against each formulated hypothesis, type of analysis and interpretation of results. Hierarchical multiple regression analysis was undertaken to establish relationships for the models linking predictor and dependent variables. Coefficient of multiple regressions (R^2), which represents the amount of variance in the dependent variable that is explained by independent variables, was used. R^2 was expressed as a percentage of variation in the dependent variable that can be explained by the regression models.

The Pearson's product moment correlation coefficient (r) was computed to provide a numerical summary of the direction and strength of relationship (association) between variables. Gould (2003) and Delaney and Huselid (1996) used these statistical tools to establish validity and strength of relationships. The ANOVA was used to test whether the models' overall results show significantly good degree of prediction of the dependent variable. The t-test compares the magnitude of the standardized regression coefficient (Beta) with zero. The standardized regression coefficient (Beta) represents the strength of the association between the predictor and the criterion variable. If t-test is significant, then it means that the value of Beta is significantly different from zero and therefore the predictor variable is significantly associated with the criterion variable.

According to Aiken and West (1991), the two equivalent ways to evaluate whether a moderating effect is present in a regression model when an interaction term is introduced involve testing whether the standardized regression coefficient (Beta) differs significantly from zero and whether the increment in the squared multiple correlation (R^2), which is the explanatory power, is significantly greater than zero. The change statistics indicate whether adding the interaction term in the regression model significantly improves the model fit. A significant F Change (ΔF) value means that there is a significant improvement in model fit, implying that more variance in the dependent variable has been explained by introducing the interaction term in the model.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

In this chapter, the findings of the study are presented starting with general information about the universities and the respondents and ending with descriptive statistics on the study variables. The findings are given in frequency distribution Tables and in descriptive form. The findings are further analysed using correlation and regression techniques and hypotheses also tested. The results are then interpreted in view of the conceptual framework. The sections are arranged according to the objectives of the study.

4.2 Response Rate

Out of the targeted forty seven (47) universities in Kenya, responses were obtained from forty four (44) universities consisting of twenty one (21) public and twenty three (23) private universities. This gave a response rate of 94%. This response rate was way above the conventionally accepTable rate for surveys.

In earlier local doctoral studies, Awino (2007) cited earlier scholars and stated that the average response rate for empirical studies was 65% of the sample. The results can therefore be generalised and considered representative of the population. Table 4.1 shows a summary of response rate and frequency of responses.

Table 4.1: Response Rate

University status	Target frequency	Not Returned	Returned Frequency	Percentage
Public	22	1	21	45
Private	25	2	23	49
Total	47	3	44	94

Source: Primary data, 2014

4.3 Demographic Profile of Universities and Respondents

The university background information was captured in section A of the data collection instrument. The main aspects of the background information analysed include university status, number of graduation cycles, length of service of the respondent, highest level of education attained by the respondent and the number of academic programmes offered by the university.

4.3.1 University Status

The researcher sought the status of each university, whether private or public. As indicated in Table 4.1, twenty one (21) public and twenty three (23) private universities were studied. This implies that 45% of the responses were from public universities while 49% were from private universities.

The status of each university was necessary to compare performance across the divide. Public and private universities have some fundamental differences in their ownership and management. While private universities are privately owned, public ones are established through acts of parliament and therefore are state owned. These differences provide diverse environments and unique opportunities and threats. Thus the university status enabled adequate comparisons.

4.3.2 Graduation Cycles

The researcher targeted the universities which have had at least one graduation cycle. This duration was necessary in testing the curriculum review which is normally carried out after one (1) complete cycle of implementation with reference to a given cohort. Table 4.2 shows the findings on the range of graduation cycles for the universities under the study.

Table 4.2: Number of Graduation Cycles

Number	Frequency			Percentage
	Public	Private	Total	
1-10	15	12	27	61
11-20	1	4	5	11
21-30	3	4	7	16
31-40	1	3	4	9
41-50	1	0	1	2
TOTAL	21	23	44	100

Source: Primary data, 2014

Table 4.2 shows that all the universities studied had undergone at least one (1) graduation cycle, with majority (61%) of the universities having undergone between one (1) and ten (10) graduation cycles. One (1) public university had the highest number of graduation cycles totalling to fifty (50). The number of graduation cycles was necessary in order to investigate the frequency of curriculum review and performance trends over a period of five (5) years.

4.3.3 Designation of the Respondents

The target respondents in this study were the officers in charge of academic affairs. Table 4.3 illustrates the designation breakdown of the respondents.

Table 4.3: Designation of the Respondents

Designation	Frequency			Percentage
	Public	Private	Total	
Deputy Vice Chancellor, Academic and Students affairs(ASA)/Deputy Vice Chancellor, Academic Affairs (AA)	5	4	9	20
Registrar, Academic Affairs (AA)/Registrar, Academic and Students Affairs (ASA)/Registrar, Academic, Research and Students Affairs (ARSA)/Registrar/Deputy or Assistant registrars	16	19	35	80
TOTAL	21	23	44	100

Source: Primary data, 2014

Table 4.3 shows that majority (80%) of the respondents were the registrars and the minority (20%) of the respondents were deputy vice chancellors in charge of academics. The designation of respondents was necessary to ascertain that only those in charge of academic affairs completed the questionnaires. In all the universities, financial perspectives in section D of the questionnaire were completed in consultation with finance officers.

4.3.4 Length of Service of the Respondents

As part of the university background information, the researcher also sought to know the length of service for each respondent. Work experience is any experience that a person gains while working in a specific field or occupation.

Length of service was found necessary in capturing the respondent's level of experience and familiarity with the issues under investigation in a given institution. Table 4.4 shows the length of service as indicated by respondents.

Table 4.4: Length of Service of the Respondent

Number of Years of Service in current position	Frequency			Percentage
	Public	Private	Total	
1	2	4	6	13
2	7	5	12	27
3	5	3	8	18
4	2	5	7	16
5	1	2	3	7
6	0	2	2	5
8	1	0	1	2
10	1	0	1	2
12	1	0	1	2
Not indicated	1	2	3	7
TOTAL	21	23	44	100

Source: Primary data, 2014

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Table 4.4 shows that majority (27%) of the respondents had three (2) years working experience. Four (4) respondents (9%) had one (1) year experience. A total of five (3) respondents did not indicate their length of service, out of which two (2) were from private universities and one (1) was from a public university. Generally, fifty nine percent (59%) of the respondents had three (3) years and above of work experience at their current positions.

4.3.5 Highest Level of Education

The highest level of education formed part of the study as an indicator of the respondents' level of grasp familiarity with the strategic issues under investigation. Table 4.5 indicates the breakdown of the highest levels of education attained by the respondents.

Table 4.5: Highest Level of Education Attained by Respondents

Highest Level of Education	Frequency			Percentage
	Public	Private	Total	
Masters	8	14	22	50
Doctorate	13	9	22	50
TOTAL	21	23	44	100

Source: Primary data, 2014

Table 4.5 shows that the number of respondents holding master degrees (22) as their highest level of education was equal to those with doctorate degrees (22). However, out of the twenty two (22) respondents with doctoral degrees, public universities had the majority (59%). Out of the twenty two (22) respondents with master degrees, private universities had the majority (64%). This shows that all the respondents who completed the questionnaires had reasonable grasp of the strategic issues being investigated.

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4.3.6 Academic Programmes Offered

The researcher also sought to identify the academic programmes being offered at every university. Table 4.6 indicates the groups of the academic programmes offered by the universities in the study.

Table 4.6: Academic Programmes offered

Academic programmes	Frequency			Percentage
	Public	Private	Total	
All academic programmes indicated (Doctoral, Masters, Bachelors, Diplomas, Certificate)	16	10	26	59
All levels except Masters and Doctoral	1	0	1	2
All Levels except Doctoral	4	13	17	39
TOTAL	21	23	44	100

Source: Primary data, 2014

Table 4.6 shows that majority (59%) of the universities offer all levels of academic programmes. However, majority (16 out of 26) universities that offer doctoral programmes are public universities. Only one (1) public university did not have masters and doctoral programmes on offer.

4.4 Descriptive Statistics on Study Variables

Descriptive statistics were used to analyse preliminary findings on linkage strategies, university resource Conditions, industry forces and university performance variables. The enabled comparative analysis between private and public universities using independent sample t-test, standard deviation, arithmetic mean and coefficient of variation (CV). The findings are presented as per each objective.

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4.4.1 Descriptive Findings on Linkage Strategies

The mean scores for the variables of linkage strategies were compared by computing independent sample t statistic for equality of means at 95% level of confidence and 42 degrees of freedom to test the significance of the difference between sample means of private and public universities. Coefficient of variation (C.V) was also used to measure variability among the variable scores of different universities.

Table 4.7 shows that private universities have stronger linkage strategies with mean score of 3.7 out of 5 compared to public universities with mean score of 3.3 out of 5 (Appendix XIII and appendix XIV). Since the average value of independent sample t-test (-8.43) is less than 2.5 and the significance level (0.498) is greater than 0.05, there is significant difference between the linkage strategies' mean score of private universities compared to that of the public universities (Appendix V). The overall mean score of the linkage strategies for both public and private universities is 3.5 out of 5 with collaborative research being scored the highest (3.8) and teaching and learning facilities the lowest (3.4).

Table 4.7: Descriptive Statistics for Linkage Strategies

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Curriculum orientation	21	23	44	3.2	3.6	3.5	1.5	1.3	1.4	47	36	41
Industrial attachment focus	21	23	44	3.4	3.6	3.5	1.5	1.1	1.3	44	31	37
Teaching and Learning Focus	21	23	44	3.4	3.5	3.4	1.2	1.2	1.2	35	34	35
Collaborative Research	21	23	44	3.3	4.1	3.8	1.3	1.5	1.4	39	37	37
Average	21	23	44	**3.3**	**3.7**	**3.5**	**1.4**	**1.3**	1.3	41	34	38

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Coefficient of variation (CV) measures variability in the aspect being investigated. Low variability implies consistency and stability in an indicator or a predictor variable. The average coefficient of variation of linkage strategies are more consistent and stable with a lesser variability of 34% compared to a larger variability of 41% from public universities. Table 4.7 further shows that private universities have lesser variability in all indicators of linkage strategies compared to public universities. This indicates that the responses on linkage strategies from private universities were more consistent and stable.

Among public universities, teaching and learning focus was the most consistent and stable indicator of linkage strategies with the smallest variability of 35%. Curriculum orientation had the largest variability of 47%. Among private universities, industrial attachment focus was the most consistent and stable indicator of linkage strategies with the smallest variability of 31%. Collaborative research had the largest variability of 47%. When the universities are combined, teaching and learning focus was the most consistent and stable with the smallest variability of 35% while curriculum orientation remained with the least consistent indicator with the largest variability of 41%.

On curriculum orientation, four questions were formulated to investigate on effectiveness of curriculum development and review policy, frequency of curriculum review and the extent of participation of and involvement of stakeholders and professional bodies in curriculum development and review process. Table 4.8 shows the descriptive statistics for each item.

Table 4.8: Descriptive Statistics on Curriculum Orientation

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Existence of an effectiveness curriculum development and review policy	21	23	44	3.3	3.4	3.4	1.7	1.2	1.4	47	35	42
Stakeholder participation and involvement	21	23	44	3.0	3.4	3.3	1.4	1.2	1.3	44	36	40
Frequency of curriculum review	21	23	44	3.1	3.5	3.3	1.4	1.2	1.3	35	33	40
Involvement of professional bodies	21	23	44	3.4	4.2	3.8	1.4	1.4	1.5	39	34	38
Average	21	23	44	3.2	3.6	3.5	1.5	1.3	1.4	41	35	40

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Table 4.8 shows that there is no significant difference in effectiveness of curriculum development and review policy between public and private universities (mean score of 3.4 by private and 3.3 by public universities). However, private universities had greater consistency with a lesser variability of 35% compared to a very wide variability of 47% in public universities as far as the effectiveness of curriculum development and review policy is concerned.

Private universities scored higher in frequency of curriculum review (3.5 and lesser variability of 33%) compared to a mean score of 3.1 and wider variability of 33% by public universities. Private universities also obtained higher mean scores (3.4 and 4.2) in stakeholder and professional bodies' participation and involvement in curriculum development and review process respectively. In overall, private universities recorded stronger linkage strategies (mean score of 3.6 and variability of 35%) compared to public universities (mean score of 3.2 and variability of 41%) in the area of curriculum orientation. In general, the combined mean score on curriculum orientation for all private and public universities is 3.5 out of 5 which approximates to 70% on a percentage scale.

On industrial attachment focus, six questions were formulated to investigate on existence of an effective industrial attachment policy and adherence to it, participation and involvement of stakeholders in every aspect of industrial attachment process, relevance of industrial attachment to the students' field of study, monitoring and assessment of students on industrial attachment. Table 4.9 shows the descriptive statistics for each item.

Table 4.9: Descriptive Statistics on Industrial Attachment Focus

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Existence of an effectiveness industrial attachment policy	21	23	44	3.4	3.4	3.5	1.1	1.1	1.4	33	33	41
Adherence to the industrial attachment policy	21	23		3.4	3.4	3.3	1.0	1.0	1.2	29	29	36
Stakeholder participation and involvement	21	23	44	3.4	3.4	3.4	1.0	1.0	1.2	30	30	35
Relevance of industrial attachment to the students' field of study	21	23	44	3.5	3.5	3.5	1.0	1.0	1.2	27	27	34
relevance of industrial attachment to the students' field of study	21	23	44	4.2	4.2	3.8	1.3	1.3	1.4	32	32	37
monitoring and assessment of students on industrial attachment	21	23		3.5	3.5	3.5	1.1	1.0	1.2	26	26	34
Average	21	23	44	3.6	3.6	3.5	1.1	1.1	1.3	29	29	36

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Table 4.9 shows that there is no significant difference in the industrial attachment focus variable mean scores and CV values between private and public universities. However in overall, the universities recorded the highest mean score of 4.2 on relevance of industrial attachment to the students' field of study.

This implies that they ensure to a very large extent that any student on industrial attachment is placed in an industry relevant to his or her area of specialisation. In general, the combined mean score on industrial attachment focus for all private and public universities is 3.5 out of 5 which approximates to 70% on a percentage scale. As indicated in Table 4.10, nine questions were formulated to investigate on teaching and learning focus

Table 4.10: Descriptive Statistics on Teaching and Learning Focus

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
existence of student centred teaching and learning methods	21	23	44	3.5	3.5	3.4	1.0	1.0	1.1	30	30	34
frequency of evaluation, review and maintenance of teaching and learning facilities	21	23	44	3.5	3.5	3.3	1.0	1.0	1.1	30	30	33
access to library resources	21	23	44	3.3	3.3	3.3	1.0	1.0	1.0	31	31	30
computer to student ratio	21	23	44	3.3	3.3	3.3	1.1	1.1	1.0	33	33	32
access to laboratory equipment	21	23	44	3.5	3.5	3.4	1.0	1.0	1.0	30	30	29
access to the field equipment	21	23	44	3.4	3.4	3.4	1.0	1.0	1.0	29	29	29
qualification and experience of academic staff	21	23	44	3.4	3.4	3.5	1.0	1.0	1.1	29	29	33
relevance of teaching and learning technology	21	23	44	3.9	3.9	3.5	1.6	1.6	1.5	41	41	44
teaching of industry benchmarked content	21	23	44	3.5	3.5	3.6	1.8	1.8	1.5	50	50	43
Average	21	23	44	3.5	3.5	3.4	1.2	1.2	1.2	34	34	34

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

The questions included existence of student centred teaching and learning methods, frequency of evaluation, review and maintenance of teaching and learning facilities, access to library resources, computer to student ratio, access to laboratory equipment, access to the field equipment, qualification and experience of academic staff, relevance of teaching and learning technology and teaching of industry benchmarked content.

Table 4.10 shows that there is absolutely no difference in all the teaching and learning focus variable mean scores and CV values between private and public universities. However in overall, the universities recorded the highest mean score of 3.9 on relevance of teaching and learning technology. However, this variable had a higher variability of 41% compared to other items. This suggests higher level of inconsistency and stability in this variable. Access to the field equipment and qualification and experience of academic staff were the most consistent and stable indicators of teaching and learning focus with variability of 29%. In general, the combined mean score on teaching and learning focus for all private and public universities is 3.4 out of 5 which approximates to 68% on a percentage scale.

On Collaborative research, seven questions were formulated to investigate on existence an effective research policy, number of university- economic sector collaborative research, implementation of research findings, Link between postgraduate research and economic sector, presentation of research findings to the public, fusion of research findings in the curriculum and frequency of research publications. Table 4.11 shows the descriptive statistics for each item.

Table 4.11: Descriptive Statistics on Collaborative Research

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Existence an effective research policy	21	23	44	3.6	4.1	3.9	1.4	1.5	1.4	38	37	37
number of university-economic sector collaborative research	21	23	44	3.5	4.0	3.8	1.1	1.6	1.4	32	39	37
implementation of research findings	21	23	44	3.2	4.2	3.8	1.3	1.5	1.4	39	35	39
Link between postgraduate research and economic sector	21	23	44	3.4	4.1	3.8	1.2	1.4	1.3	34	34	36
presentation of research findings to the public	21	23	44	3.2	4.1	3.7	1.3	1.6	1.5	42	39	42
fusion of research findings in the curriculum	21	23	44	3.3	4.1	3.8	1.4	1.5	1.5	41	37	39
Frequency of research publications.	21	23	44	3.2	4.2	3.7	1.3	1.3	1.4	42	32	38
Average	21	23	44	3.3	4.1	3.8	1.3	1.5	1.4	38	36	38

Key: pu-public universities; pr-private universities; Co-combined (all universities)

***Source:** Primary data, 2014*

Table 4.11 shows that private universities recorded stronger linkage strategies in the area of collaborative research (mean score of 4.1 and variability of 36%) compared to public universities (mean score of 3.3 and variability of 38%). Private universities also recorded higher mean scores in all the seven determinants of collaborative research compared to public universities. Apart from the question on the number of university- economic sector collaborative research where public universities have a lower variability of 32% compared to 39% in public universities, the private universities recorded lower variability in all the other six determinants, indicating greater consistency and stability in the responses compared to public universities. In general, the combined mean score on curriculum orientation for all private and public universities is 3.8 out of 5 which approximates to 76% on a percentage scale.

4.4.2 Descriptive Findings on University Performance

The mean scores for the indicators of university performance were compared by computing independent sample t statistic for equality of means at 95% level of confidence and 42 degrees of freedom to test the significance of the difference between sample means of private and public universities.

Table 4.12: Descriptive Statistics for University Performance

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Net surplus	21	23	44	3.4	3.8	3.6	1.2	1.1	1.1	35.3	28.9	30.6
Total amount of scholarship awards or grants for students	21	23	44	3.6	3.6	3.6	1.3	1.2	1.2	36.1	33.3	33.3
Total number of Students	21	23	44	3.3	3.5	3.4	1.4	1.3	1.3	42.4	37.1	38.2
Teacher to Student ratio	21	23	44	3.5	3.7	3.6	1.4	1.2	1.3	40.0	32.4	36.1
Supervisor to Student ratio	21	23	44	3.1	3.8	3.5	1.3	1.4	1.4	41.9	36.8	40.0
University webomatrics ranking in Kenya	21	23	44	2.7	3.3	3.0	1.1	1.2	1.2	40.7	36.4	37.1
Total number of stakeholder conferences held	21	23	44	3.4	3.6	3.5	1.3	1.3	1.3	38.2	36.1	37.1
Total number of collaborative activities with other institutions held	21	23	44	3.4	3.6	3.5	1.4	1.2	1.3	41.2	33.3	37.1
Total number of industry visits made	21	23	44	3.4	3.8	3.6	1.3	1.4	1.3	38.2	36.8	36.1
Total number of guest speakers hosted	21	23	44	3.5	3.8	3.7	1.4	1.4	1.4	40.0	36.8	37.8
Performance of our university has greatly increased over the past five years	21	23	44	3.4	3.9	3.7	1.2	1.1	1.2	35.3	28.2	32.4
Average	21	23	44	3.3	3.7	3.5	1.3	1.2	1.3	39.0	34.2	36.3

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Table 4.12 shows that private universities performed better (mean score of 3.7 out of 5) compared to public universities (mean score of 3.3 out of 5). Since the average value of the sample t-test (-8.23) is less than 2.5 and significance level (0.472) is greater than 0.05, there is significant difference between the private universities' performance mean score and that of the public universities (Appendix VIII). The overall mean score of university performance for both public and private universities is 3.5 out of 5 with the lowest score of 3.0 for webomatrics ranking.

Table 4.12 further indicates that private universities have lesser variability in all performance indicators compared to those of public universities. This demonstrates that the responses on performance from private universities were more consistent and better than public universities. Among public universities, responses on net surplus were the most consistent with smallest variability of 35.3% and largest variability of 42.4% in total number of students. Among private universities, responses on net surplus were also the most consistent with smallest variability of 28.9% and largest variability of 37.1% in total number of students. When the universities are combined, responses on net surplus remained the most consistent with the smallest variability of 30.6% and largest variability tied at 40% in supervisor to student ratio. The findings imply that net surplus is the most stable indicator of university performance (Appendix XVIII and appendix XVII).

4.4.3 Descriptive Findings on University Resource Conditions

The variable mean scores for university resource conditions were compared by undertaking independent sample t-test for equality of means at 95% level of confidence and 42 degrees of freedom. This was necessary to test the significance of the difference between sample means of private and public universities.

Table 4.13 shows that Private Universities have stronger resource conditions (average mean score of 4.1 out of 5) compared to public universities (average mean score of 3.3 out of 5). Since the average value of the sample t-test (-1.83) is less than 2.5 and significance level (0.124) is greater than 0.05, there is significant difference between the private universities' average mean score of resource conditions and that of the public universities (Appendix VI). The overall mean score of the resource conditions for both public and private universities is 3.7 out of 5 with all other variables having more or less the same scores (between 3.7 and 3.8).

Table 4.13: Descriptive Statistics on University Resource Conditions

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Value	21	23	44	3.4	4.1	3.8	1.4	1.4	1.42	44	34.3	37
Rareness	21	23	44	3.5	4.1	3.8	1.4	1.5	1.53	40	37	39.4
Inimitability	21	23	44	3.4	4.1	3.8	1.2	1.4	1.3	35	34	34
Non-substitutability	21	23	44	3.1	4	3.6	1.1	1.5	1.4	35.2	38	39
Resource dependence level	21	23	44	3.3	4.2	3.8	1.4	1.4	1.4	38	36	37
Dynamic Capabilities	21	23	44	3.3	4.2	3.7	1.2	1.4	1.4	37	36	37
Individual and Group Behaviour	21	23	44	3.3	4.1	3.7	1.5	1.6	1.6	36	36	37
Average	21	23	44	3.3	4.1	3.7	1.3	1.5	1.4	38	36	37

Key: pu-public universities; pr-private universities; Co-combined (all universities)

***Source:** Primary data, 2014*

Table 4.13 further indicates that private universities have lesser variability in all indicators of resource conditions compared to public universities, except for non-substitutability which has lesser variability of 35% in public universities compared to a variability of 38% in private universities. This indicates that the responses on resource conditions from private universities were more consistent and stable.

Among public universities, inimitability was the most consistent and stable resource condition with smallest variability of 35%. Value had the largest variability of 44% .Among private universities, inimitability was also the most consistent and stable indicator with smallest variability of 34%. Rareness had the largest variability of 39%. When the universities are combined, inimitability remained the most consistent and stable indicator with the smallest variability of 34% while rareness remained the indicator with the largest variability of 39.4%.

On value, three questions were formulated to investigate continuous improvement in the value of resources, resource compliance to industry standards and level of perceived comparative value of resources. Table 4.14 shows the descriptive statistics for each item.

Table 4.14: Descriptive Statistics on Value

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Continuous improvement in the value of resources	21	23	44	3.3	4.1	3.8	1.4	1.4	1.4	41	34	38
Resource compliance to industry standards	21	23	44	3.3	4.2	3.8	1.4	1.3	1.4	43	32	38
Level of perceived comparative value of resources.	21	23	44	3.6	4.1	3.9	1.4	1.4	1.4	40	34	36
Average	21	23	44	3.4	4.1	3.8	1.4	1.4	1.4	41	33	37

Key: pu-public universities; pr-private universities; Co-combined (all universities)
***Source:** Primary data, 2014*

Table 4.14 shows that private universities recorded stronger resource conditions in value component (mean score of 4.1 and a lower variability of 33%) compared to public universities (mean score of 3.4 and a higher variability of 41%).

Private universities also recorded higher mean scores in all the three determinants of resource value compared to public universities. In general, the combined mean score on recourse value for all private and public universities is 3.8 out of 5 which approximates to 76% on a percentage scale.

On rareness, two questions were formulated to investigate on unique/rareness of the resources and the comparative difference between resources within the industry. Table 4.15 shows the descriptive statistics for each item.

Table 4.15: Descriptive Statistics on Rareness

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Rareness/uniqueness	21	23	44	3.6	4.1	4.0	1.4	1.4	1.4	42	34	35
comparative difference between resources within the industry	21	23	44	3.3	4.1	3.7	1.5	1.3	1.4	42	37	41
Average	21	23	44	3.5	4.1	3.9	1.5	1.4	1.4	41	35	38

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: Primary data, 2014

Table 4.15 shows that private universities recorded stronger resource conditions in rareness component (mean score of 4.1 and a lower variability of 35%) compared to public universities (mean score of 3.5 and a higher variability of 41%). Private universities also recorded higher mean scores in all the two determinants of resource rareness compared to public universities. All the universities combined recorded higher mean score of 4.0 and a lower variability of 35% on rareness/uniqueness component. The low variability indicates more consistency and stability in the responses recorded on the question.

The second question on comparative difference between resources within the industry scored a lower mean score of 3.7 and a higher variability of 41% (less consistency and stability in responses). In general, the combined mean score on recourse rareness for all private and public universities is 3.9 out of 5 which approximates to 78% on a percentage scale (Appendix XVI and Appendix XV).

On inimitability, three questions were formulated to investigate on peculiarity that eliminates duplication of resources and extent of copying by competitors, the third question was reversed to validate the first two. Table 4.16 shows the descriptive statistics for each item.

Table 4.16: Descriptive Statistics on Inimitability

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
peculiarity that eliminates duplication of resources	21	23	44	3.6	4.1	4.0	1.4	1.5	1.4	38	36	35
and extent of copying by competitors	21	23	44	3.4	4.2	3.8	1.4	1.3	1.4	41	33	37
Average	21	23	44	3.5	4.2	3.9	1.4	1.4	1.4	40	35	36

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Table 4.16 shows that private universities recorded stronger resource conditions in inimitability component (mean score of 4.2 and a lower variability of 35%) compared to public universities (mean score of 3.5 and a higher variability of 40%). Private universities also recorded higher mean scores in all the two determinants of resource inimitability compared to public universities. All the universities combined recorded higher mean score of 4.0 and a lower variability of 35% on peculiarity component.

The low variability indicates more consistency and stability in the responses recorded on the question. The second question on copying scored a lower mean score of 3.8 and a higher variability of 37% (less consistency and stability in responses). In general, the combined mean score on recourse inimitability for all private and public universities is 3.9 out of 5 which approximates to 78% on a percentage scale.

On non-substitutability, three questions were formulated to investigate existence of alternative choices within the industry, comparative resource prestige and extent of resource substitutability within the industry. Table 4.17 shows the descriptive statistics for each item.

Table 4.17: Descriptive Statistics on Non-Substitutability

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Existence of alternative choices within the industry	21	23	44	3.2	4.1	3.7	1.2	1.5	1.4	38	35	38
Comparative resource prestige	21	23		3.0	4.0	3.6	1.0	1.6	1.5	32	40	40
Extent of resource substitutability within the industry	21	23	44	3.1	3.8	3.4	1.1	1.5	1.3	35	38	40
Average	21	23	44	3.1	4.0	3.5	1.1	1.5	1.4	35	38	40

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Table 4.17 shows that private universities recorded stronger resource conditions in non-substitutability component (mean score of 4.2) compared to public universities (mean score of 3.1). Private universities also recorded higher mean scores in all the three determinants of resource non-substitutability compared to public universities.

However, apart from the question on existence of alternative choices within the industry where private universities recorded a lower variability of 35% against 38% from public universities, the public universities recorded more consistency and stability with comparative lower variability in the other two determinants of non-substitutability. In general, the combined mean score on recourse non-substitutability for all private and public universities is 3.5 out of 5 which approximates to 70% on a percentage scale.

One question was formulated to obtain data on resource dependence level as additional determinant of resource conditions. The question was based on the extent to which a particular university does not depend on other institutional resources to develop and implement its linkage strategies. Results show that private universities recorded stronger resource non-dependence level (mean score of 4.2 and a lower variability of 32%) compared to public universities (mean score of 3.3 and a higher variability of 40%). In general, the combined mean score on recourse non-dependence level for all private and public universities was 3.7 out of 5 which approximates to 74% on a percentage scale.

To obtain data on dynamic capability component, one question was formulated to investigate level of capability necessary to adapt to industry dynamics to determine and implement linkage strategies for a particular university. Results indicate that private universities recorded stronger dynamic capability level (mean score of 4.2 and a lower variability of 34%) compared to public universities (mean score of 3.3 and a higher variability of 37%). In general, the combined mean score on dynamic capability level for all private and public universities was 3.8 out of 5 which approximates to 76% on a percentage scale.

The last determinant of resource condition was individual and group behaviour. To obtain data on this component, a question on existence of team work, cooperation, responsibility and accountability in developing and implementing linkage strategies was formulated. Results indicate that private universities recorded stronger on individual and group behaviour (mean score of 4.1 and a lower variability of 40%) compared to public universities (mean score of 3.3 and a higher variability of 44%). In general, the combined mean score on individual and group behaviour for all private and public universities was 3.7 out of 5 which approximates to 74% on a percentage scale.

4.4.4 Descriptive Findings on Industry Forces

The mean scores for industry forces were compared by computing independent sample t statistic for equality of means at 95% level of confidence and 42 degrees of freedom to test the significance of the difference between sample means of private and public universities. Table 4.18 shows that private universities have managed to reduce industry forces (average mean score of 2.0 out of 5) compared to public universities (average mean score of 2.7 out of 5).

Since the average value of the t-test (1.79) is less than 2.5 and significance level (0.091) is slightly greater than 0.05, there is slight difference between the private universities' average mean score of industry forces and that of the public universities (Appendix VII). The overall mean score of the resource conditions for both public and private universities is 2.0 out of 5 with all other variables having constant score of 2.3. In public universities industry forces have lesser variability compared to those of private universities. This indicates that the responses on industry forces from public universities were more consistent thus implying more stability in moderating effect.

Among public universities, threat of entry was the most consistent indicator of industry forces with smallest variability of 39%. Both threat of substitution and bargaining power of buyers had the largest variability of 52%. Among private universities, bargaining power of suppliers was the most consistent indicator of industry forces with smallest variability of 75%. Threat of entry had the largest variability of 84%.

When the universities are combined, threat of entry remained the most consistent and stable indicator of industry forces with the smallest variability of 61%. The indicators with the largest variability of 65% were bargaining power of buyers, bargaining power of suppliers and threat of substitution.

Table 4.18: Descriptive Statistics for Industry Forces

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Bargaining power of buyers	21	23	44	2.7	2.0	2.3	1.4	1.6	1.5	52	80	65
Bargaining power of Suppliers	21	23	44	2.7	2.0	2.3	1.2	1.5	1.5	44	75	65
Threat of entry	21	23	44	2.8	1.9	2.3	1.1	1.6	1.4	39	84	61
Threat of substitution	21	23	44	2.7	2.0	2.3	1.4	1.6	1.5	52	80	65
Rivalry among current competitors	21	23	44	2.8	1.9	2.3	1.3	1.5	1.5	47	80	64
stakeholder norms and values	21	23	44	2.7	2.0	2.3	1.4	1.6	1.5	46	80	64
Average	21	23	44	2.7	2.0	2.3	1.3	1.6	1.5	47	80	64

Key: pu-public universities; pr-private universities; Co-combined (all universities)

***Source:** Primary data, 2014*

Three questions based were formulated on existence of bargaining power of clients and university strategy influence within education sector as industry, power of stakeholder influence on programme offering and general decision making process.

Employers' influence and impact on university strategies and processes to capture data on bargaining power of buyers were also considered. Table 4.19 shows the descriptive statistics for each item.

Table 4.19: Descriptive Statistics on Bargaining Power of Buyers

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Exists of bargaining power of clients and university strategy influence within education sector as industry	21	23	44	3.0	2.0	2.4	1.4	1.6	1.5	51	81	63
Power of stakeholder influence on programme offering and general decision making process	21	23	44	3.0	2.0	2.4	1.4	1.6	1.5	51	81	63
Employers' influence and impact on university strategies and processes	21	23	44	3.0	2.0	2.4	1.4	1.6	1.5	51	81	63
Average	21	23	44	3.0	2.0	2.4	1.4	1.6	1.5	51	81	63

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Table 4.19 shows that private universities recorded a lower mean score in bargaining power of buyers (mean score of 2.0) compared to public universities (higher mean score of 3.0). However, public universities recorded more consistency and stability in bargaining power of buyers responses (lower variability of 51%) compared to private universities (higher variability of 81%). In general, the combined mean score for all universities was 2.4 out of 5 which approximates to 48% on a percentage scale.

On bargaining power of suppliers, two questions were formulated to capture data concerning the power of suppliers and its influence on their loyalty and the power of sponsors and donors and its influence on their loyalty and university strategies. Table 4.20 shows the descriptive statistics for each item.

Table 4.20: Descriptive Statistics on Bargaining Power of Suppliers

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
power of suppliers and its influence on their loyalty	21	23	44	2.7	2.0	2.3	1.4	1.6	1.5	52	80	65
power of sponsors and donors and its influence on their loyalty and university strategies	21	23	44	2.8	2.0	2.3	1.4	1.5	1.4	50	75	61
Average	21	23	44	2.8	2.0	2.3	1.4	1.6	1.4	51	78	63

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Table 4.20 shows that private universities recorded a lower mean score in bargaining power of suppliers (mean score of 2.0) compared to public universities (higher mean score of 2.8). However, public universities recorded more consistency and stability in bargaining power of suppliers responses (lower variability of 51%) compared to private universities (higher variability of 78%). In general, the combined mean score for all universities was 2.3 out of 5 which approximates to 46% on a percentage scale.

To capture data on threat of entry, two questions were formulated on ability of competitors and the cost of entering market by acquiring and implementing similar strategies for a given university. Table 4.21 shows the descriptive statistics for each item.

Table 4.21: Descriptive Statistics on Threat of Entry

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Ability of entering and competing in the same market	21	23	44	2.8	2.0	2.3	1.1	1.5	1.4	41	75	61
The cost of entering competing in same market	21	23	44	2.8	1.8	2.3	1.1	1.4	1.4	41	78	61
Average	21	23	44	2.8	1.9	2.3	1.1	1.5	1.4	41	77	61

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Table 4.21 shows that private universities recorded a lower mean score in threat of entry (mean score of 1.9) compared to public universities (higher mean score of 2.8). However, public universities recorded more consistency and stability in threat of entry responses (lower variability of 41%) compared to private universities (higher variability of 77%). In general, the combined mean score for all universities was 2.3 out of 5 which approximates to 46% on a percentage scale.

The questions formulated to capture data on threat of substitution included threat from domestic academic institutions possessing alternative substitution and threat of first entrance into the industry. Table 4.22 shows the descriptive statistics for each item.

Table 4.22: Descriptive Statistics on Threat of Substitution

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Threat from domestic academic institutions possessing alternative substitution	21	23	44	2.7	2.0	2.3	1.4	1.6	1.5	52	80	65
threat of first entrance into the industry	21	23		2.7	2.0	2.3	1.4	1.6	1.5	52	80	65
Average	21	23	44	2.7	2.0	2.3	1.4	1.5	1.5	52	80	65

Key: pu-public universities; pr-private universities; Co-combined (all universities)

***Source:** Primary data, 2014*

Table 4.22 shows that private universities recorded a lower mean score in threat of substitution (mean score of 2.0) compared to public universities (higher mean score of 2.7). However, public universities recorded more consistency and stability in threat of substitution responses (lower variability of 52%) compared to private universities (higher variability of 80%).   In general, the combined mean score for all universities was 2.3 out of 5 which approximates to 46% on a percentage scale.

The questions formulated to capture data on rivalry among current competitors included level of rivalry over similar programmes and strategies in the education industry and information about strategies developed by competitors in the industry. Table 4.23 shows the descriptive statistics for each item.

Table 4.23: Descriptive Statistics on Rivalry among Current Competitors

Variable	Frequency			Mean Score			Standard Deviation			Coefficient of Variation (CV)		
	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co	Pu	Pr	Co
Threat from domestic institutions possessing alternative substitution	21	23	44	2.7	2.0	2.8	1.3	1.6	46	52	80	
threat of first entrance into the industry	21	23		2.9	2.0	2.3	1.5	1.5	65	41	75	
Average	21	23	44	2.8	2.0	2.6	1.4	1.6	56	46	77	

Key: pu-public universities; pr-private universities; Co-combined (all universities)

Source: *Primary data, 2014*

Table 4.23 shows that private universities recorded lower mean score in rivalry among current (mean score of 2.0) compared to public universities (higher mean score of 2.8). However, public universities recorded more consistency and stability in rivalry among current competitors responses (lower variability of 46%) compared to private universities (higher variability of 77%). In general, the combined mean score for all universities was 2.6 out of 5 which approximates to 52% on a percentage scale.

One question was formulated on the level of compliance with standards of norms and values demanded by stakeholders in order to obtain data on stakeholder norms and values. Results show that private universities recorded lower mean score in compliance with stakeholder norms and values (mean score of 2.0) compared to public universities (higher mean score of 2.7).

However, public universities recorded more consistency and stability (lower variability of 48%) compared to private universities (higher variability of 80%). In general, the combined mean score for all universities was 2.4 out of 5 which approximates to 48% on a percentage scale.

4.5 Inferential Statistics on Study Variables

In order to establish the nature, direction and the appropriate model defining relationships between study variables, correlation and regression techniques were used. Hypotheses were also tested and appropriate decision made whether to reject and accept them.

4.5.1 Correlation and Regression Analysis between Linkage Strategies and University Performance

Correlation analysis was done after aggregating the variables as composite indices. When Pearson's product moment correlation coefficient (r) was computed, it was established that there exists high positive correlation between linkage strategies and university performance since r= 0.979, which is greater than 0.7. The correlation is significant at p value (0.000) < 0.05 as shown in Table 4.24.

Correlation analysis between the indicators of linkage strategies and university performance shows that collaborative research has the highest positive correlation with university performance with Pearson's product moment correlation coefficient (r) = 0.919, which is greater than 0.7. This was followed by curriculum orientation, Industrial attachment focus and teaching and learning focus with r=0.895, 0.868 and 0.864 respectively. The correlation is significant at p value (0.000) < 0.05.

Table 4.24: Correlations between Linkage Strategy Indicators and Performance

		University Performance
University Performance	Pearson Correlation	1
	Sig. (2-tailed)	
	N	44
Curriculum Orientation	Pearson Correlation	.895[**]
	Sig. (2-tailed)	.000
	N	44
Industrial Attachment Focus	Pearson Correlation	.868[**]
	Sig. (2-tailed)	.000
	N	44
Teaching and Learning Focus	Pearson Correlation	.864[**]
	Sig. (2-tailed)	.000
	N	44
Collaborative Research	Pearson Correlation	.919[**]
	Sig. (2-tailed)	.000
	N	44

**. Correlation is significant at the 0.05 level (2-tailed).
   Source: Primary data, 2014

Regression analysis was carried out to establish the equations for the models. To fix collinearity the stepwise method of model selection was used in order to include only the most useful variables in the models. Collinearity is indicated by tolerance close to zero (0) and variance inflation factor (VFI) greater than ten (10). Tolerance is the percentage of the variance in a given predictor that cannot be explained by the other predictors. A variance inflation factor greater than 10 is usually considered problematic. Regression model 1 ($Y_1 = \alpha_{01} + \beta_{11}X_1 + \varepsilon_1$) was meant to establish the relationship between linkage strategies (X_1) and university performance (Y_1), hence test hypothesis 1 stated that there is a significant relationship between linkage strategies and organisational performance.

When X_1 and Y_1 were regressed as composite indices, the results show that X_1 is a high significant predictor of Y_1. The model is given as $Y_1= 0.408+0.908X_1$. The model implies that a unit percentage increase in linkage strategies would cause 0.908% change in performance. Linkage strategies (X_1) explains 82.4% of the variation in performance (Y_1) since the coefficient of determinant, $R^2=0.824$. This means that only 17.6% variation in university performance is explained by other factors. Table 4.25 shows that $F_{(1, 42)} = 197.214$ and p value (0.000) < 0.05, tolerance>0 and VIF<10 indicating no collinearity problem and t value (14.043) is significantly greater than zero, indicating that the value of standardised coefficient, Beta (0.908) is significantly different from zero. Thus the regression model is a valid relationship between linkage strategies and university performance. Consequently, the findings confirm Hypothesis 1, that there is a significant relationship between linkage strategies and organisational performance.

Table 4.25: Regression Summary and ANOVA for Model 1

Model 1	Unstandardised Coefficients		Standardised Coefficients		Sig.	R	R Square	F (ANOVA)	df	Sig.	Tolerance	VIF
	B	Std. Error	Beta	t								
Regression						.908[a]	.824	197.214	1	.000[a]	1.000	1.000
Constant	.408	.113		1.790	.081			Residual	42			
Linkage Strategies	.894	.030	.908	14.043	.000							

 Regression model is significant at the 0.05 level (2-tailed).

Source: *Primary data, 2014*

When each of the indicators of linkage strategies was regressed with university performance, collaborative research (R) was found the most significant predictor of university performance (Y_5) with p value (0.004)< 0.05 followed by industrial attachment focus (I) with p value (0.086) slightly greater than 0.05.

Both curriculum orientation (C) and teaching and learning focus (T) were found insignificant predictors of university performance (p values = 0.855 and 0.270 respectively). From Table 4.26, the regression model relating each linkage strategy and university performance can be expressed as $Y_5=0.49 +0.04C +0.12I + 0.13T + 0.45R$. The model implies that a unit percentage increase in curriculum orientation would cause 0.04% increase in university performance (Y_5), a unit percentage increase in industrial attachment focus would cause 0.12% increase in university performance (Y_5), a unit percentage increase in teaching and learning focus would cause 0.13% increase in university performance (Y_5) and that a unit percentage increase in collaborative research would cause 0.45% increase in university performance (Y_5). Table 4.15 shows that $F_{(4, 39)}$ = 73.531 and p value (0.000) < 0.05, tolerance values>0 and most VIF values < 10, thus the regression model is a valid relationship between linkage strategies and university performance. Consequently, *Hypothesis 1 was accepted that there is a significant relationship between linkage strategies and organisational performance.*

Table 4.26: Regression Summary and ANOVA on Linkage Strategies-Performance

	Standardised Coefficients		Sig.	R	R Square	F	df	Sig.	Collinearity Statistics	
Regression	B	Std. Error		.940[a]	.883	73.531	4	.000[a]	Tolerance	VIF
Constant	.493	.220	.031			Residual	39			
Curriculum Orientation	.041	.177	.855						0.078	10.12
Industrial Attachment Focus	.121	.132	.086						0.144	6.92
Teaching and Learning Focus	.125	.138	.270						0.181	5.51
Collaborative Research	.451	.135	.004						0.091	10.9

Regression model is significant at the 0.05 level (2-tailed).

Source: Primary data, 2014

To investigate the significance of each linkage strategy in relation to each university performance indicator, a panel data OLS was used. In the model, the four linkage strategy variables were estimated against ten performance variables one after another. The results of the models were significant at 5 percent levels.

Table 4.27 shows that net surplus and student population are the most significant indicators of performance when regressed with each of the four linkage strategy (p values < 0.05). They both have positive correlation with each of the linkage strategy. The weakest university performance indicator is webomatrics ranking with all p values greater than 0.05 and two coefficients (that of industrial attachment and the one for teach and learning focus) depicting negative relationship (-0.249 and -0.33 respectively).

Table 4.27 Coefficient Estimates between Linkage Strategies and Performance

	Curriculum Orientation		Industrial Attachment Focus		Teaching and Learning Focus		Collaborative Research	
Explanatory variables	β	P	β	P	β	P	β	P
Net Surplus	.251	**.029**	.153	**.029**	.330	**.022**	.224	**.041**
Scholarship awards	-.005	.985	.428	**.032**	.370	.073	.155	**.035**
Total No. Of Students	.510	**.019**	0.05	**.094**	.378	**.024**	.188	**.040**
Teacher to student ratio	.107	.658	.338	.065	.366	**.055**	.203	.070
Supervisor to Student ratio	-.039	.891	.142	**.050**	.289	.192	.563	**.012**
Webomatrics ranking	.152	.741	-.249	.470	-.033	.927	.465	.089
Stakeholder Conferences	-.261	.413	.262	.272	.378	.131	.516	**.038**
Collaborative activities	.324	.173	.473	**.010**	.253	.170	.034	**.049**
Industry visits	.092	.660	.252	**.011**	.312	.060	.392	**.017**
Guest Speakers	.104	.659	.237	.081	.431	**.023**	.331	.070

Source: Primary data, 2014

The most significant predictor of performance is collaborative research with all p values less than 5 percent, apart from its correlation with webomatrics ranking (8 %) and teacher to student ratio (7 percent).The second most significant predictor of performance is industrial attachment and the list significant predictor of performance is curriculum orientation with only two p values less than 5 percent (net surplus being 2.9 student population being 1.9 percent).

4.5.2 Correlation and Regression Analyses on Resource Conditions and Study Variables

Table 4.28 shows high positive correlation between university resource conditions (X_2) and university performance (Y) with r=0.95>0.7 and correlation being significant at p value (0.000) < 0.05.

Table 4.28: Correlations between Study Variables

		Y	X1	X2	X3
Y	Pearson Correlation	1	.979**	.950**	-.947**
	Sig. (2-tailed)		.000	.000	.000
	N	44	44	44	44
X_1	Pearson Correlation	.979**	1	.960**	-.958**
	Sig. (2-tailed)	.000		.000	.000
	N	44	44	44	44
X_2	Pearson Correlation	.950**	.960**	1	-.968**
	Sig. (2-tailed)	.000	.000		.000
	N	44	44	44	44
X_3	Pearson Correlation	-.947**	-.958**	-.968**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	44	44	44	44

**. Correlation is significant at 0.05 level (2-tailed).
***Source:** Primary data, 2014*

The findings also reveal high positive correlation between university resource conditions (X_2) and linkage strategies (X_1). This was indicated by r=0.96>0.7 and correlation being significant at p value (0.000) < 0.05.

When each of the indicators of university resource conditions were treated as independent variables and regressed with university performance, value (V) and dynamic capability (DC) were found the most significant predictors of university performance (Y_6) with both having p values (0.01) < 0.05. Both rareness (R) and individual and group behaviour (IGB) were found insignificant predictors of university performance since they both had p values less than 0.05 (0.081 and 0.061 respectively). Inimitability (IM), Non-substitutability (NS) and Resource Dependence Level (RDL) all had p values less than 0.05 thus are significant predictors of university performance.

From Table 4.29, the regression model relating each resource condition indicator and university performance can be expressed as $Y_6=0.55+0.41V+0.07R+0.31IM+0.16NS+0.32RDL+0.42DC+0.08GB$. The model implies that a unit percentage increase in value would cause 0.41% increase in university performance (Y_6), a unit percentage increase in rareness would cause 0.07% increase in university performance (Y_6), a unit percentage increase in inimitability would cause 0.31% increase in university performance (Y_6), a unit percentage increase in non-substitutability would cause 0.16% increase in university performance (Y_6), a unit percentage increase in resource dependence level would cause 0.32% increase in university performance (Y_6), a unit percentage increase in dynamic capability would cause 0.42% increase in university performance (Y_6) and finally a unit percentage increase in individual and group behaviour would cause 0.08% increase in university performance (Y_6).

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Table 4.29: Regression and ANOVA on Resource Conditions-Performance

	Standardised Coefficients		Sig.	R	R Square	F	df	Sig.	Collinearity Statistics	
Regression	B	Std. Error		.949[a]	.901	46.905	7	.000[a]	Tolerance	VIF
Constant	.55	.209	.000			Residual	36			
Value	.41	.225	.010						.341	2.981
Rareness	.07	.356	.081						.112	9.185
Inimitability	.31	.291	.020						.813	5.798
Non-substitutability	.16	.136	.042						.021	11.86
Resource Dependence Level	.32	.276	.022						.341	4.974
Dynamic Capability	.42	.292	.010						.213	5.383
Individual and Group Behaviour	.08	.208	.061						.191	3.361

Regression model is significant at the 0.05 level (2-tailed).

***Source:** Primary data, 2014*

Appendix X and Table 4.29 shows that $F_{(7, 36)} = 46.905$, p value (0.000) < 0.05, tolerance values>0 and all VIF values < 10 (apart from non-substitutability with VIF (11.86)>10). Thus the regression model relating university resource conditions and university performance is a valid relationship. The square of multiple correlations (R^2) =0.901 shows that resource conditions explain 90.1% of variation when other variables in the conceptual model (Fig. 2.1) are constant.

To test hypothesis 2, that there is a moderating effect of resource conditions on the relationship between linkage strategies and organizational performance, a hierarchical multiple regression analysis was conducted. In the first step, two variables were included: linkage strategies (X_1) and university resource conditions (X_2). An interaction term (X_1*X_2) was also Created and two regression models were run.

Model a without the interaction term and model b with the interaction term to find out if the models are significant and if the amount of variance accounted for in Model b (with the interaction term) is significantly more than Model a (without the interaction term). Moderating effects were tested by observing if the change in the squared multiple correlation coefficient (ΔR^2) and F ratio given by the interaction is significantly greater than zero.

Table 4.30 ANOVA Test on Uncentered Model 2 Terms

Model		Sum of Squares	df	Mean Square	F	Sig.
a	Regression	45.786	2	22.893	131.760	.000[a]
	Residual	7.124	41	.174		
	Total	52.909	43			
b	Regression	47.858	3	15.953	126.325	.000[b]
	Residual	5.051	40	.126		
	Total	52.909	43			

Regression model is significant at the 0.05 level (2-tailed).
***Source:** Primary data, 2014*

As shown in Table 4.30, model (a) is significant with ANOVA test showing that $F_{(2, 41)}$ = 131.760, p <0.05. Model b is also significant with ANOVA test showing that $F_{(3, 40)}$ = 126.325, p <0.05.

Table 4.31 shows that Model (b) with the interaction between linkage strategies and university resource conditions accounted for significantly more variance than just linkage strategies (X_1) and university resource conditions (X_2) by themselves. The change in squared multiple correlation coefficient (ΔR^2) = 0 .039, which is significantly greater than zero, p <0.05, implying that resource conditions explain additional 3.9% variation in university performance.

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F-Change, F (1, 40) =16.410 shows a significant variation in the model fit with p<0.05. This indicates that there is potentially significant moderating effect of university resource conditions on the relationship between linkage strategies and university performance.

Table 4.31: Model Summary on Uncentered Model 2 Terms

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
a	.930[a]	.865	.859	.41683	.865	131.760	2	41	.000
b	.951[b]	.905	.897	.35536	.039	16.410	1	40	.000

Regression model is significant at the 0.05 level (2-tailed).
Source: *Primary data, 2014*

To avoid potentially problematic high multicollinearity with the interaction term, the independent and moderating variables have to be Centered (Aiken and West, 1991). Linkage strategies and university resource conditions were therefore Centered and a new interaction term between them created and then added to the regression model. This accounted for a significant proportion of the variance in university performance caused by moderating effect of university resource conditions.

As shown in Table 4.32, the change in squared multiple correlation coefficient (ΔR^2) = 0 .039 and it is significantly greater than zero with p <0.05. This shows that university resource conditions explain additional 3.9% variation in university performance. Further, $\Delta F (1, 40) = 16.410$, p < 0.05 shows significant variation in the model fit. Since t values (5.688 and 4.051) are significantly greater than zero, the values of standardised coefficient, Beta (1.320 and 0.245) of model 2 are significantly different from zero showing that resource conditions is significantly associated with university performance.

Thus, the strength of the relationship between Linkage strategies and university performance depends upon university resource conditions such that linkage strategies are strongest when university resource conditions are high and weakest when university resource conditions are low. ***Hypothesis 2 is therefore accepted that there is significant moderating effect of university resource conditions on the relationship between linkage strategies and university performance.***

Table 4.32: Model Summary on Centered Model 2 Terms

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.930[a]	.865	.859	.41683	.865	131.760	2	41	.000
2	.951[b]	.905	.897	.35536	.039	16.410	1	40	.000

Regression model is significant at the 0.05 level (2-tailed).
Source: *Primary data, 2014*

As shown in Table 4.33, model 1 (without moderation term) is $Y_2 = 3.126 + 0.131X_1 + 0.802X_2$ and is a significant and valid relationship with $F_{(2, 41)} = 131.760$, $p < 0.05$. The model shows that a unit percentage increase in linkage strategies would cause 0.131% increase in university performance (Y_2) and that a unit percentage increase in resource conditions would cause 0.802% increase in university performance (Y_2).

Table 4.33: Regression Coefficients and ANOVA for Centered Model 2 Terms

Model	Unstandardized Coefficients		Standardized Coefficients			ANOVA				Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.		df	F	Sig.	Tolerance	VIF
1 (Constant)	3.126	.068		46.131	.000	Regression	2	131.760	.000ᵃ		
CX$_1$	.129	.224	.131	.578	.566	Residual	41			.341	2.935
CX$_2$	.865	.245	.802	3.531	0.05	Total	43			.279	3.580
2 (Constant)	2.635	.134		19.594	.000	Regression	3	126.325	.000ᵇ		
CX$_1$	.304	.219	.309	1.392	.172	Residual	40			.093	10.752
CX$_2$	1.423	.250	1.320	5.688	.000	Total	43			.172	5.816
CX$_1$ and CX$_2$	.401	.099	.245	4.051	.000					.341	2.935

Key: CX$_1$: Centred Linkage strategies; CX$_2$: Centred Resource Conditions

Regression model is significant at the 0.05 level (2-tailed).

***Source:** Primary data, 2014*

Model 2 (with moderating effect) is $Y_2 = 2.635 + 0.309X_1 + 1.32X_2 + 0.245(X_1*X_2)$ and is also a significant and valid relationship since the ANOVA test shows that $F_{(3, 40)} = 126.325$, $p < 0.05$. Collinearity statistics show tolerance>0 and VIF< 10. From the findings, it can be concluded that apart from significant moderating effect observed, university resource conditions (X_2) is also strong predictor of university performance.

4.5.3 Correlations and Regression Analyses between Industry Forces and Study Variables

Table 4.28 shows that industry forces (X_3) has high negative correlation with university performance (Y) with r=-0.95>0.7 and correlation being significant at p value (0.000) < 0.05. High negative correlation was also established between industry forces (X_3) and linkage strategies (X_1) with r=-0.958>0.7 and correlation being significant at p value (0.000) < 0.05.

When each of the indicators of industry forces were treated as independent variables and regressed with university performance, only threat of substitution (TS) and rivalry among current competitors (RCC) were found insignificant predictors of university performance (Y_7) with p values (0.653 and .879 respectively)> 0.05. Bargaining power of buyers (BPB), bargaining power of suppliers (BPS), threat of entry (TE) and stakeholder norms and values (TNV) were all found significant predictors of university performance with p values less than 0.05.

From Table 4.34, the regression model relating each industry force indicator and university performance can be expressed as $Y_7 = 6.096 - 1.01BPB - 2.52BPS - 1.08TE - 0.029TS - 0.057RCC - .875TNV$. The model implies that a unit percentage increase in bargaining power of buyers would cause 1.01% decrease in university performance (Y_7), a unit percentage increase in bargaining power of suppliers would cause 2.52% decrease in university performance (Y_7), a unit percentage increase in threat of entry would cause 1.08% decrease in university performance (Y_7), a unit percentage increase in threat of substitution would cause 0.029% decrease in university performance (Y_7), a unit percentage increase in rivalry among current competitors would cause 0.057% decrease in university performance (Y_7), and finally a unit percentage increase in Stakeholder Norms and Values would cause 0.875% decrease in university performance (Y_7).

Table 4.34: Regression and ANOVA on Industry Forces and Performance

	Standardised Coefficients		Sig.	R	R Square	F	df	Sig.	Collinearity Statistics	
Regression	B	Std. Error		.991a	.982	337.804	6	.000ᵃ	Tolerance	VIF
Constant	6.096	.082	.000			Residual	37			
Bargaining Power of Buyers	-1.012	.080	.000						.690	9.587
Bargaining Power of Suppliers	-2.52	.443	.000						.211	6.813
Threat of entry	-1.08	.140	.000						.172	5.460
Threat of Substitution	-.029	.083	.653						.003	16.371
Rivalry among Current Competitors	-.057	.399	.879						.002	56.987
Stakeholder Norms and Values	-.875	.261	.001						.405	7.590

Regression model is significant at the 0.05 level (2-tailed).

Source: *Primary data, 2014*

Further, Table 4.34 and Appendix XI shows that $F_{(6, 37)} = 337.804$, p value (0.000) < 0.05, tolerance values>0 and all VIF values < 10 (apart from threat of substitution and rivalry among current competitors having VIF 16.371 and 56.987 respectively>10 and tolerance values 0.003 and 0.002 respectively close to zero). Thus the regression model relating industry forces and university performance is a valid relationship. The square of multiple correlations (R^2) =0.982 shows that industry forces explain 98.2% of variation when other variables in the conceptual model (Fig. 2.1) are constant.

To test hypothesis 3, that there is a moderating effect of industry forces on the relationship between linkage strategies and organizational performance, a hierarchical multiple regression analysis was conducted. Linkage strategies and industry forces were Centered and an interaction term (X_1*X_3) between them created and then added to the regression model. This accounted for an insignificant proportion of the variance in university performance caused by moderating effect of industry forces.

As shown in Table 4.35, the change in squared multiple correlation coefficient (ΔR^2) = 0 .002 which is not significantly greater than zero since p value (0.426) >0.05. This shows that industry forces explain additional 0.2% variation in university performance. Further, $\Delta F (1, 40) = 0.648$, p value (0.426) > 0.05 shows insignificant variation in the model fit. Since t values (-2.657 and 0.805) for model 3 are not significantly greater than zero, the values of standardised coefficient, Beta (-0.426 and 0.08) are not significantly different from zero. From the findings, strength of the relationship between Linkage strategies and university performance does not significantly depend upon industry forces.

Table 4.35: Model Summary on Centered Model 3 Terms

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
					R Square Change	F Change	df1	df2	Sig. F Change
1	.924[a]	.855	.847	.43325	.855	120.436	2	41	.000
3	.926[b]	.857	.846	.43512	.002	.648	1	40	.426

R*egression significant at 0.05 level (2-tailed)*

***Source:** Primary data, 2014*

Although insignificant, there is still some moderating effect of industry forces on the relationship between linkage strategies and university performance. ***Hypothesis 3 was therefore accepted that there is a moderating effect of industry forces on the relationship between linkage strategies and organizational performance.***

As shown in Table 4.36, first model (without moderation term) is $Y_3=3.44+0.489X_1-0.454X_3$ and it is a significant and valid relationship with $F (2, 41) = 120.436$, $p < 0.05$. Model 3 (with moderating effect) is $Y_2=3.539+0.451X_1-0.426X_3+0.08(X_1*X_3)$.

The model is significant and valid relationship as well, given that ANOVA test indicates that $F(3, 40) = 79.817$, $p < 0.05$. VIF values are all < 10 and tolerance > 0, indicating no collinearity problem. From the finding it can be concluded that industry forces is a strong predictor of university performance although it does not have significant moderating effect on the relationship between linkage strategies and university performance.

Table 4.36: Regression Coefficients and ANOVA for Centered Model 3 Terms

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	ANOVA	df	F	Sig.	Collinearity statistics Tolerance	VIF
1	(Constant)	3.449	.065		52.795	.000	Regression	2	120.436	.000a		
	CX_1	.481	.153	.489	3.139	.003	Residual	41			.146	6.835
	CX_3	-.335	.115	-.454	-2.914	.006	Total	43			.146	6.835
3	(Constant)	3.539	.130		27.229	.000	Regression	3	79.817	.000b		
	CX_1	.444	.161	.451	2.767	.009	Residual	40			.134	7.436
	CX_3	-.314	.118	-.426	-2.657	.011	Total	43			.139	7.174
	CX_1andCX_3	.059	.073	.080	.805	.426					.360	2.776

Key: CX_1: Centred Linkage strategies; CX_3: Centred Industry Forces

Regression model is significant at the 0.05 level (2-tailed).

Source: Primary data, 2014

The model $Y_3 = 3.44 + 0.489X_1 - 0.454X_3$ indicates that a unit percentage increase in linkage strategies would cause 0.489% increase in university performance (Y_3) and that a unit percentage increase in industry forces would cause 0.454% decrease in university performance (Y_3).

4.5.4 Joint Moderating Effect of Competitive Forces

To test hypothesis 4, that the joint moderating effect of resource conditions and industry forces on the relationship between linkage strategies and organisational performance is different from their separate effects, a hierarchical multiple regression analysis was conducted.

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Linkage strategies, university resource conditions and industry forces were centred and an interaction term $(X_1*X_2*X_3)$ between them created and then added to the regression model. This accounted for a significant proportion of the variance in university performance caused by the joint moderating effect of competitive forces.

Table 4.37 shows that the change in squared multiple correlation coefficient $(\Delta R^2) = 0$ .020 and p value <0.05. This shows that joint moderating effect of competitive forces and resource conditions explain additional 2% variation in university performance. Further, $\Delta F (1, 39) = 6.951$, p <0.05 shows significant variation in the model fit. Since t values for model 4 are significantly greater than zero, the values of standardised coefficient, Beta are significantly different from zero showing that resource conditions and industry forces show joint significant association with university performance. Thus, the strength of the relationship between Linkage strategies and university performance depends upon the competitive forces.

Table 4.37: Model Summary on Centered Model 4 Terms

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.933[a]	.870	.860	.41444	.870	89.347	3	40	.000
4	.943[b]	.890	.878	.38667	.020	6.951	1	39	.012

Regression model is significant at the 0.05 level (2-tailed).

Source: *Primary data, 2014*

From the findings, it can be stated that resource conditions have stronger separate moderating effect on the relationship between linkage strategies and university performance than when jointly considered with industry forces (a decrease in ΔR^2 from 3.9% of separate effect to 2% of joint effect).

However, the separate moderating effect of industry forces is weaker than its joint effect on the relationship between linkage strategies and university performance when considered with resource conditions (an increase in ΔR^2 from 0.2% of separate effect to 2% of joint effect). Consequently, *hypothesis 4 is accepted that the joint moderating effect of resource conditions and industry forces on the relationship between linkage strategies and organisational performance is different from their separate effects.*

Table 4.38 shows that model 1 (without moderation term) is $Y_4 = 3.44 + 0.357X_1 + 0.216X_2 - 0.407X_3$ and is a significant and valid relationship with $F_{(3, 40)} = 89.347$, $p < 0.05$ (Appendix XII).

Table 4.38: Regression Coefficients and ANOVA for Centered Model 3 Terms

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	ANOVA	df	F	Sig.	Collinearity statistics Tolerance	VIF
1	(Constant)	3.443	.063		55.053	.000	Regression	3	89.347	.000[a]		
	CX_1	.351	.158	.357	2.221	.032	Residual	40			.126	7.951
	CX_3	-.300	.111	-.407	-2.701	.010	Total	43			.143	6.977
	CX_2	.154	.070	.216	2.192	.034					.334	2.997
4	(Constant)	3.306	.078		42.255	.000	Regression	4	78.717	.000[b]		
	CX_1	.402	.149	.409	2.702	.010	Residual	39			.124	8.088
	CX_3	-.305	.104	-.413	-2.940	.005	Total	43			.143	6.979
	CX_2	.339	.096	.475	3.530	0.05					.156	6.414
	CX_1 and CX_2 and CX_3	.089	.034	.338	2.636	.012					.172	5.825

Key: CX_1: Centred Linkage strategies; CX_2: Centred Resource Conditions CX_3: Centred Industry Forces
Regression model is significant at the 0.05 level (2-tailed).

Source: *Primary data*

The model indicates that a unit percentage increase in linkage strategies would cause 0.357% increase in university performance (Y_4) and a unit percentage increase in

resource conditions would cause 0.216% increase in university performance (Y_4). Further, a unit percentage increase in industry forces would cause 0.407% decrease in university performance (Y_4). Model 4 (with moderating effect) is $Y_4 = 3.306 + 0.409X_1 + 0.413X_2 + 0.475X_3 + 0.338(X_1*X_2*X_3)$ and it is also a significant and valid relationship since the ANOVA test shows that $F(4, 39) = 79.717$, $p < 0.05$. VIF values are all < 10 and tolerance > 0, indicating no collinearity problem thus it can be concluded that competitive forces are jointly significant predictors of university performance.

4.6 Discussion

In this section, results of the study are discussed in comparison with theory and with other empirical results from previous studies. Confirmatory patterns with theory and previous empirical results, inconsistencies or emerging archetypes from the findings are also discussed.

4.6.1 Comparison with Theory

Resource based view (RBV) and five forces model are the main theories anchoring the study. Other relevant theories reviewed include dynamic capability, resource dependence and institutional theory.

Resource based view suggests that the resources possessed by a firm are the primary determinants of its performance, and these may contribute to a sustainable competitive advantage of the firm. The first objective of this study was to establish the relationship between linkage strategies and university performance.

Correlation analysis indicates that there exists high positive correlation between linkage strategies and university performance. This demonstrates strategic choices with strong linkage orientation yield superior organizational performance while strategic choices with weak linkage orientation lead to poor organizational performance.

Regression analysis further indicates that Linkage strategies explain 82.4% of the variation in university performance. This means that only 17.6% variation in university performance is explained by other factors. These results are consistent with resource based view as far as the relationship between strategy and performance is concerned. RBV model emphasizes the firm's resources as the fundamental determinant of appropriate strategic choices that would lead to competitive edge necessary for a firm to sustain superior performance. Wernerfelt (1995), Barney (1991) and Wernerfelt (1984) indicated that resource-based view (RBV) has become one of the dominant contemporary approaches to the analysis of a firm's performance. The issue of firm performance has been central in strategy research for decades and encompasses how firms choose strategies how they manage and implement in order to realize superior performance.

According to Wernerfelt (1984), the resource-based view (RBV) as a basis for the competitive advantage of a firm lies primarily in the application of a bundle of valuable tangible or intangible resources at the firm's disposal. The concept of resources includes all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness (Barney, 1991).

The second objective of the study was to determine the moderating effect of resource conditions on the relationship between linkage strategies and performance of universities in Kenya. Correlation analysis reveals high positive correlation between university resource conditions and university performance. The results also reveal high positive correlation between university resource conditions and linkage strategies. Regression analysis further indicates that there exists significant moderating effect of resource conditions on the relationship between linkage strategies and university performance.

A central premise of the resource-based view is that firms compete on the basis of their resources and capabilities. Such resources should be relatively rare and neither perfectly imitable nor substitutable without great effort (Barney, 1991). If these conditions hold, the bundle of resources can sustain the firm's superior performance. RBV has considered strategy to be under the control of managers since they have strategic choices to make, but has viewed resource conditions as constraints that in certain situations managers can proactively change. Thus, much of the strategic management literature has focused on the relationship between strategy and performance and considered resource conditions as moderators between the relationship.

The results of this study show that the strength of the relationship between Linkage strategies and university performance depends upon university resource conditions such that linkage strategies are strongest when university resource conditions are high and weakest when university resource conditions are low. To this extent, the results are consistent with resource based view since there is significant moderating effect of resource conditions on the relationship between linkage strategies and university performance.

Regression analysis showed that university resource conditions strengthened the relationship between linkage strategies and performance by explaining additional 3.9% variation in university performance. According to RBV model, the resource conditions are individually necessary, but not sufficient conditions for superior performance. The joint effect of resources that possess these conditions can greatly improve organizational performance. Resource needs to display each of the four conditions to be a possible source of superior performance. The main concern of the model is to identify the characteristics of resources that are not subject to imitation by competitors because if the resources possessed by a firm can easily be replicated by competitors, even though the resources are the source of competitive advantage of the firm, then the advantage will not last long. However, this perspective of the theory was tested by regressing resource conditions as independent variables with university performance as dependent variable.

Regression equation relating each resource condition and university performance was established and its shows that each resource condition explains variation in performance at a different magnitude. Value had the highest explanatory power such that a unit percentage increase in value would cause 0.38% increase in university performance, followed by inimitability at 0.26%, non-substitutability at 0.14% rareness and finally rareness at 0.08%. When coefficient of variation (CV) was computed, the results indicated that among public universities, inimitability was the most consistent and stable resource condition with smallest variability of 35%. Value had the largest variability of 44% .Among private universities, inimitability was also the most consistent and stable indicator with smallest variability of 34%. Rareness had the largest variability of 39%. To this extent, the results are inconsistent with the view that the resource conditions must be joined as a bundle in order to explain superior performance.

Both firm strategy and industry forces within which a firm operates have been hypothesized and empirically demonstrated to have a significant effect on performance. Porter (1980) advanced a five forces model to determine the forces influencing the inherent profit potential of an industry or sub-segment of it. He referred to the forces as bargaining power of buyer, bargaining power of supplier, entry barriers, threat of substitution, and rivalry among industry incumbents. The model views the industry forces as key contingency variables for moderating the strength of relationship between strategy and performance. Correlation analysis shows that industry forces have high and significant negative correlation with university performance. High and significant positive correlation was also established between industry forces and linkage strategies.

When each of the indicators of industry forces were treated as independent variables and regressed with university performance, only threat of substitution and rivalry among current competitors were found insignificant predictors of university performance with bargaining power of buyers, bargaining power of suppliers and threat of entry were all found significant predictors of university performance. Regression equation relating each industry force indicator and university performance was established. The model revealed that bargaining power of suppliers are the most sensitive in influencing performance such that a unit percentage increase in bargaining power of suppliers would cause 2.043% decrease in university performance, followed by bargaining power of buyers at 1.03%, threat of entry at 1.007%, and finally threat of substitution at 0.038%.

Although Porter (1980) explained the direct relationship between the five forces to performance, there have been attempts to examine the relationships among industry forces, strategy, and performance variables.

Research examining that threefold relationship has not adequately addressed the issue of whether industry forces are independently related to performance, moderators of the relationship between strategy and performance or a combination of the two (Hofer and Schendel, 1978). Regression analysis showed that industry forces explain additional 0.2% variation in university performance. This had insignificant variation in the model fit. This indicates that strength of the relationship between linkage strategies and university performance does not significantly depend upon industry forces. Sensitivity analysis demonstrates that a unit percentage increase in industry forces would however cause 0.335% decrease in university performance. The results imply that although there is high negative correlation between industry forces and performance, the forces are not significant moderators of performance.

Dynamic capability theory emphasises the need for an organisation to utilize available resources and its capability to adapt to industry dynamics in order to improve firm performance. Grant (1991) suggests a key difference between resources and dynamic capabilities; on their own resources like capital equipment, skills of individual employees, patents, brand names, finance and so on are not productive and it is the firm's ability to assemble, integrate and manage this bundle of resources which become crucial in understanding how competitive advantage and superior performance is conferred upon firms. Results of this study indicate that private universities recorded stronger dynamic capability level (mean score of 4.2 out of 5) compared to public universities (mean score of 3.3).

When each of the indicators of university resource conditions were treated as independent variables and regressed with university performance, value (V) and dynamic capability (DC) were found the most significant predictors of university performance. Sensitivity analysis showed that a unit percentage increase in dynamic capability would cause 0.4% increase in university performance. This implies that capability to adapt to industry dynamics constitutes a resource condition that would influence the relationship between linkage strategies and organisational performance. Dynamic capability theory emphasises the need for an organisation to utilize available resources and its capability to adapt to industry dynamics in order to improve firm performance. From the findings, it is clear that private universities in Kenya are more sensitive to industry dynamics compared to public universities. The results are consistent with the dynamic capability theory since dynamic capability level is positively correlated to performance.

According to resource dependency theory (RDT), organizations must develop ways to exploit resources, which are also being sought by other firms, in order to ensure their own survival. Davis and Cobb (2009) argued that RDT rests on assumptions that organizations are comprised of internal and external coalitions which emerge from social exchanges that are formed to influence and control behaviour.

Regression model relating each resource condition indicator and university performance indicates that resource dependence level is a significant predictor of university performance. Sensitivity analysis also indicates that a unit percentage increase in resource dependence level would cause 0.33% increase in university performance. Correlation analysis shows high positive correlation between RDL and university performance.

These results are consistent with resource dependency theory since universities which minimized their dependence on other organizations and maximized the dependence of other organizations on themselves recorded higher performance. RDT perspective indicates the level of resource dependence of a given university on others. This implies that the strength of a university is influenced by the number of other universities depending on it.

Organisational behaviour theory gives analysis on the impact that individuals, groups and structures have on behaviour within an organization for the purpose of applying such knowledge towards improving organization effectiveness. The view postulates that organizations undergo revolutionary change (Grewal and Tansuhaj, 2001). According to Gosselin (2005), individuals behave differently when acting in their organizational role compared to when acting separately from the organization. To obtain data on organisational behaviour theory, a question on existence of team work, cooperation, responsibility and accountability in developing and implementing linkage strategies was formulated. In overall, the combined mean score on individual and group behaviour for all private and public universities was 3.7 out of 5 which approximates to 74% on a percentage scale.

When each of the indicators of university resource conditions were treated as independent variables and regressed with university performance, individual and group behaviour was found insignificant predictor of university performance. Sensitivity analysis shows that a unit percentage increase in individual and group behaviour would cause only 0.09% increase in university performance compared to other resource conditions.

The findings did not heavily support organizational behaviour. The organizational behaviour seeks to determine the combined effects of organization resources, seen as relevant linkage strategies on organization performance.

Institutional theory describes how organizations survive and succeed through congruence between an organization and the expectations from its environment. This environment is composed of norms and values from stakeholders. Institutional perspective is that companies perform well when they are perceived by the larger environment to have a legitimate right to exist. According Andriof et al. (2002), the success of higher education institutions is dependent upon external actors and that university autonomy and academic freedom are threatened by a stakeholder influence. The findings of this study are consistent with this perspective in the sense that among public universities, there is more stakeholder influence. Public university stakeholders have actually been highly involved in the internal governance of university for a long time.

According to Eshiwani (1999), the emergence of intense investment in private universities in the late 1970s implies stakeholders are gaining formal roles in the decision-making process than was the case in the universities at the beginning of the 20th century. When the theory is applied to higher education institutions, this implies that the term itself expands to take other important external actors and networks into account. Stake holder norms and values were therefore treated as industry forces that would moderate the relationship between linkage strategies and organisational performance.

Results indicate that private universities recorded lower mean score in compliance with stakeholder norms and values (mean score of 2.0) compared to public universities (higher mean score of 2.7). Regression model relating each industry force and university performance shows that a unit percentage increase in stakeholder norms and values would cause 0.929% decrease in university performance. The implication is that most private universities have managed to brand their products in such a way that lowers the influence and power of stakeholders. They instead, influence stakeholders' loyalty to their product offering. Public universities on the other hand seem to be more compliant   and under greater influence by the stakeholder demands. This explains why correlation analysis shows inverse relationship between industry forces and university performance.

4.6.2 Comparison with other Empirical Studies

The first specific objective of the study was to establish the relationship between linkage strategies and university performance. Correlation analysis indicates that there exists high positive correlation between linkage strategies and university performance. This demonstrates that strong linkage strategies yield superior organisational performance while weak linkage strategies lead to low organisational performance. The findings confirm the theories by Scholes (2006) and Mintzberg (1987). They both established positive relationship between competitive strategy and organisational performance.

Among the linkage strategies, collaborative research had the highest positive correlation with university performance. This implies that universities need to concentrate more on collaborative research in order to realise superior performance.

Chatterton and Goddard (2001) Studied 35 universities in Britain to investigate the use of the resource based view and knowledge based view to improve the understanding of the process for the initiation and function of university and industry collaboration. Findings confirmed the persistent lack of an integrative framework for the management of research collaborations and proposed a model for university and industry collaborative research. These findings agree on the fact that collaborative research is paramount in determining university performance.

Regression analysis indicates that Linkage strategies explain 82.4% of the variation in performance. This means that only 17.6% variation in university performance is explained by other factors. The results confirm the proposition by Karanja (2011) that performance of a firm can only be accurately measured in terms of its linkages with the economic sector that it serves and not in isolation. The implication here is that an organisation may be stable financially or otherwise but strategically week. Higher learning institutions, like any other organisation can only remain competitive and hence sustain superior performance by focusing their strategies in addressing the gaps between higher education and economic sector.

Martin (2001) presented a general framework for fostering collaboration and knowledge transfer between university and economic sector in Thailand. The study did not distinguish which particular strategies have more weight in explaining firm performance compared to others. 80 universities were used in the study in Thailand. This study was contextualised in Kenya by researching on forty seven (47) universities in order to identify which linkage strategies are stronger in influencing university performance.

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The findings of this study bridged the highlighted gap by indicating that among the linkage strategies, the most significant predictor of university performance is collaborative research while the second most significant predictor of university performance is industrial attachment and the list predictor is curriculum orientation. Coefficient of variation indicates that curriculum orientation had the largest variability of 47%, confirming inconsistency and instability in power of predicting university performance.

Public universities recorded the largest variability and inconsistency in curriculum review. This implies most public universities do not regularly review their curriculum. This explains further why public universities recorded lower performance compared to private universities. These findings imply that there is need for both the economic sector and universities to come up with ways of strengthening their linkage in order to enhance research relevant to industry requirements. These finding are consistent with those of Munyoki et al. (2011) when they noted that research institutions and particularly universities need to become more practical oriented by exposing students to the industry through practical industry attachment in the relevant disciplines. It is apparent that so long as universities continue doing research and coming up with findings that do not find application in the industry, the gap between universities and the industry will continue to widen and become weaker. Young companies can use names of reputable universities with which they may have collaboration to market themselves should be used by both the young as well as the relatively older manufacturing firms to enhance their image. Likewise, universities and other research institutions should try to enhance their image as being centres of excellence so that manufacturing firms can be attracted to them.

Martin (2000) used 12 countries in Africa and Europe to study collaborations between universities and economic sector. He found that institutional factors affect university education and economic sector collaborations. However he did not account for the impact of institutional factors on university and economic sector linkages. Methodology lacked statistical rigor and did not show the relationship between university-economic sector linkages and performance. This study bridged this gap by establishing high positive relationship between linkage strategies and university performance using regression and correlation analysis with 44 specific universities in Kenya.

Ogawa (2002) studied 95 public and 597 private universities in Japan and established that the core Nordic university values are considered to be inspired teaching, unique talent and researcher's integrity. His study did not explore other performance determinants. It was based in Japan specifically with 95 public and 597 private universities. No relationship functions were established. Functional relationships between variables were established to bridge the methodological gaps highlighted. This study also explored additional university performance determinants such as curriculum orientation, industrial attachment focus, teaching and learning focus and collaborative research.

The second specific objective was to determine the moderating effect of university resource conditions on the relationship between linkage strategies and university performance. Correlation analysis reveals high positive correlation between university resource conditions and university performance. This finding supports the resource based view by Wernerfelt (1984) and Grant (2010) by linking firm resource conditions and organisational performance. The point here is that favourable resource conditions enable organisations to acquire a competitive edge hence generating superior performance.

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Findings further reveal high positive correlation between university resource conditions and linkage strategies. Regression analysis also indicates that there exists significant moderating effect of resource conditions on the relationship between linkage strategies and university performance. This confirms the proposition by Barney (1991), Collis and Montgomery (1995) that competitive strategy must meet the four resource advantage-creating conditions, namely; value, rareness, inimitability and non-substitutability. This can then make it possible for firms to sustain competitive advantage necessary for superior performance. Ozsoy (2011) researched on 179 universities across Europe, Latin America and Sub-Saharan Africa and established that the attributes required for the universities to sustain and maintain their competitive advantage include intellectual capital and that higher education contributes 10.3% and 19.0% economic benefits to social and private sector respectively. The study did not cover the influence of firm conditions in determining the performance of a university. It overemphasised the importance of intellectual capital at the expense of other critical determinants of university performance. This study bridged this gap by analysing contributions of linkage strategies and the influence of firm conditions on university performance in the Kenyan context.

When the universities are combined, inimitability was found the most consistent and stable indicator of university performance with the smallest variability of 34% while rareness was the least consistent with the largest variability of 39.4%. These findings are consistent with the views of Carter and Ruefli (2006) who concluded in their study that inimitability is the most important predictor of organizational performance as a firm can obtain superior returns only when other firms are unable to imitate its resources and capabilities.

If not, these resources and capabilities would be less rare or valuable, and substitutability would become irrelevant. Regression model relating each resource condition indicator and university performance shows that dynamic conditions is the most sensitive in influencing university performance such that a unit percentage increase in dynamic capability would cause 0.38% increase in university performance. The least sensitive was group and individual behaviour at 0.08%.

The third specific objective was to determine the moderating effect of industry forces on the relationship between linkage strategies and university performance Correlation analysis on findings indicates high negative correlation between industry forces and university performance. According to Porter (1980), firms that manage to lower the industry forces would consequently realize superior performance. This shows that for a firm to realise superior performance, it has to lower the industry forces hence exhibit monopoly-like characteristics. High positive correlation was also established between industry forces and linkage strategies. This further confirms the link between strategy and competitive forces.

Porter (1980) noted that strategy is about the firm creating a market position whereby it can defend itself from competitive forces and that a firm can then influence the forces in a way that places it at an advantage position compared to its competitors. Regression analysis shows that university performance is a strongly predicted by industry forces although there is no significant moderating effect of industry forces on the relationship between linkage strategies and university performance. This finding is inconsistent with the findings of Porter (1980) who strongly linked strategy and organisational performance to five competitive forces.

The findings are also consistent with the views of Eshiwani (1999) in his study of higher learning institutions when he concluded that the universities can only remain relevant if they respond promptly to the changing technology and new economic sector demands, by formulating proper linkage strategies to counter competition challenges and strive to attain a competitive edge over the rivals in all areas of operation. However, the study did not cover the influence of competitive forces in determining the performance of a university. This study bridged this gap by analysing the influence of competitive forces on university performance. Sensitivity analysis on the regression model relating each industry force and university performance shows that bargaining power of suppliers is the most sensitive in influencing university performance such that a unit percentage increase in bargaining power of suppliers would cause 2.043% decrease in university performance.

Bargaining power of suppliers was followed by bargaining power of buyers at 1.03%, threat of entry at 1.007%, stakeholder norms and values at 0.929%, rivalry among current competitors at 0.061% and finally threat of substitution at 0.038%. In terms of variability threat of entry was found the most consistent and stable indicator of industry forces with the smallest variability of 61%. The indicators with the largest variability of 65% were bargaining power of buyers, bargaining power of suppliers and threat of substitution.

From the finding it was concluded that industry forces is a strong predictor of performance although it does significantly moderate the relationship between linkage strategies and university performance.

The fourth specific objective was to determine the joint moderating effect of competitive forces on the relationship between linkage strategies and university performance. Lynch and Baines (2004) researched on 80% of universities in United Kingdom.

They established that it is appropriate to use RBV and five forces model to guide strategy development for university. They argued that the two approaches can be applied to the competitive national system of United Kingdom's universities and further internationally. Five forces model was used with reference to the effects of industry structure. However, the study did not cover the relative roles of five forces model and RBV in explaining university performance. The findings were based on 80% of universities in United Kingdom. This study analysed the relative roles of resource conditions and industry forces in influencing the relationship between university-economic sector linkage strategies and performance.

The relationship between competitive forces, linkage strategy, and performance of an institution is a central concern of strategic management. This study used moderated regression and interaction variable in additive models to explore the joint moderating influence of competitive forces on the relationship between linkage strategies and university performance. In the results, joint moderating effect of industry forces and resource conditions accounted for 2 percent variation in university performance. Thus, the strength of the relationship between Linkage strategies and university performance depends upon the competitive forces. However, resource conditions had stronger separate moderating effect on the relationship between linkage strategies and university performance than when jointly considered with industry forces. These results do not suggest that industry forces are not important to high performance, but rather that resource conditions were more dominant in a rather turbulent environment. The findings confirm the assertion by Grant (1991) that firms' resources and capabilities take on greater importance when the external environment is in a state of flux.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter, results are summarised, conclusion drawn and recommendations given in view of the research objectives. There are also the implications of the findings on policy, practice, theory and research. Recommendations to university authorities and directions for future research are given. The chapter ends with the challenges and limitations that were encountered during the study.

5.2 Summary of the Findings

In this section, a summary is provided findings and results from analysis according to the objectives and hypotheses that guided the study. The summary given highlights the key relationships that were ascertained.

5.2.1 Linkage Strategies and Organisational Performance

The first objective of the study was to establish the relationship between linkage strategies and performance of universities in Kenya. This study established that there exists high positive correlation between linkage strategies and university performance. This was confirmed by using Pearson's product moment correlation coefficient (r), which was found to be greater than 0.7. The correlation was also found significant at p value less than 0.05.

The regression model 1 connecting linkage strategies and university performance was established and found to depict a valid relationship. The relationship shows that Linkage strategies explain 82.4% of the variation in university performance. ANOVA test shows that $F (1, 42) = 197.214$ and p value less than 0.05.

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Collinearity test indicates tolerance greater than zero and VIF less than 10. The t value is significantly greater than zero and so the value of standardised coefficient, Beta is significantly different from zero. Thus model 1 depicts a significant and valid relationship between linkage strategies and university performance. Consequently Hypothesis 1 was accepted that there exists a significant relationship between linkage strategies and organisational performance.

When each of the four linkage strategies was regressed with university performance, collaborative research was found the most significant predictor of university performance with p value less than 0.05, followed by industrial attachment focus with p value slightly greater than 0.05. Both curriculum orientation and teaching and learning focus were found insignificant predictors of university performance with p values greater than 0.05.

The regression model relating each linkage strategy and university performance was established also established. Among the indicators of the university performance, net surplus and student population were found the most significant with p value less than 0.05 when regressed with each of the four linkage strategies. They both correlate positively with each of the linkage strategies. The weakest university performance indicator was found to be webomatrics ranking with all p values greater than 0.05 and two coefficients (that of industrial attachment and the one for teach and learning focus) depicting negative relationship with linkage strategies. The results obtained on the association of variables were reflective of both theory and practice. Net surplus was found the most consistent and stable indicator of university performance with the smallest variability of 30.6%.

The average coefficient of variation of linkage strategies are also more consistent and stable with a lesser variability of 34% compared to a larger variability of 41% from public universities. When the universities were combined, teaching and learning focus was the most consistent and stable with the smallest variability of 35% while curriculum orientation remained with the least consistent indicator with the largest variability of 41%.

Each of the linkage strategy indicators was analysed to investigate their relative contributions as variables. The results show that there is no significant difference in effectiveness of curriculum development and review policy between public and private universities. However the responses from private universities had greater consistency and stability with a lesser variability of 35% compared 47% variability from public universities as far as the effectiveness of curriculum development and review policy is concerned. Private universities scored higher in frequency of curriculum review compared public universities. Private universities also obtained higher mean scores in stakeholder and professional bodies' participation and involvement in curriculum development and review process respectively.

The results also indicate that there is a no significant difference in all the industrial attachment focus variable mean scores and coefficient variation values between private and public universities. All the universities combined, recorded the highest mean score of 4.2 on relevance of industrial attachment to the students' field of study compared to other industrial attachment focus indicators. This implies that they ensure to a very large extent that any student on industrial attachment is placed in an industry relevant to his or her area of specialisation.

The results on teaching and learning focus indicators also indicate that there is no significant difference in variable mean scores and coefficient variation values between private and public universities. All the universities combined recorded the highest mean score of 3.9 on relevance of teaching and learning technology compared to other variables. However, this variable had a higher variability of 41% compared to other items, suggesting higher level of inconsistency and instability in responses. Access to the field equipment and qualification and experience of academic staff were the most consistent and stable indicators of teaching and learning focus with the lowest variability of 29% compared to other indicators.

On collaborative research, private universities recorded higher mean scores in all the seven determinants compared to public universities. Apart from the question on the number of university- economic sector collaborative research where public universities had a lower variability of 32% compared to 39% in public universities, the private universities recorded lower variability in all the other six determinants, indicating greater consistency and stability in the responses.

In summary the findings show that there exists high positive correlation between linkage strategies and university performance. The relationship shows that Linkage strategies explain 82.4% of the variation in university performance. Consequently, hypothesis 1 was accepted. Among the linkage strategies, collaborative research was found the most significant predictor of university performance. These results are consistent with resource based view as far as the relationship between strategy and performance is concerned.

RBV model emphasizes the firm's resources as the fundamental determinant of appropriate strategic choices that would lead to competitive edge necessary for a firm to sustain superior performance (Wernerfelt, 1984; Wernerfelt, 1995; and Barney, 1991).

5.2.2 Moderating Effect of Resource Conditions

The second objective aimed at determining the moderating effect of resource conditions on the relationship between linkage strategies and performance of universities in Kenya. A hierarchical multiple regression analysis indicated that the change in squared multiple correlation coefficient was significantly greater than zero with p value less than 0.05. The change statistics also showed that university resource conditions explain additional 3.9% variation in university performance.

The F-change showed significant variation in the model fit, t values were significantly greater than zero and the values of standardised coefficient, Beta of the model with interaction term were significantly different from zero. Thus, the strength of the relationship between Linkage strategies and university performance depends upon university resource conditions such that linkage strategies are strongest when university resource conditions are high and weakest when university resource conditions are low. Consequently, hypothesis 2 was accepted that there is significant moderating effect of university resource conditions on the relationship between linkage strategies and university performance.

Model 1 (without moderation term) was established and it was found significant and depicting a valid relationship with p value less 0.05. Model 2 (with moderation term) was also established and it was found significant and depicting valid relationship.

ANOVA test showed that $F_{(3, 40)} = 126.325$ and p value less than 0.05. Collinearity statistics show tolerance greater than zero and VIF less than 10. From the findings, it can be concluded that apart from significant moderating effect observed, university resource conditions is also a strong predictor of university performance.

Although value and dynamic capability were found the most significant predictors of performance, Inimitability was the most consistent and stable indicator of resource conditions with the smallest variability of 34% while rareness remained the indicator with the largest variability of 39.4%. However Value and dynamic capability were found the most significant predictors of performance.

Analysis on individual university resource conditions shows that private universities exhibit stronger value conditions compared to public universities. Private universities also recorded lower coefficient of variation values in all the three determinants. This indicates higher consistency and stability of value as an advantage creating condition in private universities as compared to public universities.

On rareness component, private universities also recorded stronger conditions with a mean score of 4.1 compared to 3.5 mean score of public universities. Private universities also recorded higher mean scores in all the two determinants of resource rareness compared to public universities. All the universities combined recorded higher mean score of 4.0 and a lower variability of 35% on the uniqueness component of rareness as a variable. The low variability indicates more consistency and stability in the responses recorded on the question.

Compared to public, private universities recorded stronger resource conditions in inimitability component. Private universities also recorded higher mean scores in all the two determinants of resource inimitability compared to public universities. All the universities combined recorded higher mean score of 4.0 and a lower variability of 35% on peculiarity component of inimitability as a variable.

The low variability indicates more consistency and stability in the responses recorded on the question. The second question on copying scored a lower mean score of 3.8 and a higher variability of 37%. Private universities recorded a higher mean score in Non-substitutability compared to public universities. They also recorded higher mean scores in all the three determinants of resource non-substitutability. Apart from the question on existence of alternative choices within the industry the public universities recorded more consistency and stability in non-substitutability responses in the other determinants. Results also show that private universities recorded higher mean scores in resource non-dependence level, dynamic capability and individual and group behaviour as compared to public universities.

In summary, the findings show that resource conditions explain additional 3.9% variation in university performance. Thus, the strength of the relationship between Linkage strategies and university performance depends upon university resource conditions such that linkage strategies are strongest when university resource conditions are high and weakest when university resource conditions are low. Consequently, hypothesis 2 was accepted.

Among the resource conditions, value and dynamic capability were found the most consistent and stable. Private universities also recorded higher mean scores in all the two determinants of resource inimitability compared to public universities. These findings are also consistent with the findings resource based view (Wernerfelt, 1984; Wernerfelt, 1995; and Barney, 1991).

5.2.3 Moderating Effect of Industry Forces

The third objective of the study was to determine the moderating effect of industry forces on the relationship between linkage strategies and performance of universities in Kenya. A hierarchical multiple regression analysis indicates that the change in squared multiple correlation coefficient is not significantly greater than zero with p value less than 0.05. This implies that introduction of industry forces in the model as a moderating factor, only explained additional 0.2% variation in university performance. Change in F ratio with p value greater than 0.05 and t values for model 3 not significantly greater than zero, further indicates insignificant variation in the model fit.

The values of standardised coefficient are not significantly different from zero. Thus, the strength of the relationship between Linkage strategies and university performance does not significantly depend upon industry forces. Although insignificant, there is still some moderating effect of industry forces on the relationship between linkage strategies and university performance. Consequently, hypothesis 3 was accepted.

Threat of entry was found the most consistent and stable indicator of industry forces with the smallest variability of 61%. The indicators with the largest variability of 65% were bargaining power of buyers, bargaining power of suppliers and threat of substitution.

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The first model (without moderation term) was established and it depicts a significant and valid relationship with F ratio test showing p value less 0.05. Model 3 (with moderating effect) was also established and it also depicts a significant and valid relationship. ANOVA test had p value less than 0.05, VIF values were all less than 10 and tolerance greater than zero, indicating no collinearity problems.

From these findings it was concluded that industry forces is a strong predictor of performance although it does significantly moderate the relationship between linkage strategies and university performance. Further analysis on individual industry conditions shows that private universities recorded a lower mean score in bargaining power of buyers, bargaining power of suppliers, threat of entry, threat of substitution and compliance with stakeholder norms and values compared to public universities. However, public universities recorded more consistency and stability with a lower variability in industry forces.

In summary, the findings show that introduction of industry forces in the model as a moderating factor, only explained additional 0.2% variation in university performance. Thus, the strength of the relationship between Linkage strategies and university performance does not significantly depend upon industry forces. Consequently, hypothesis 3 was accepted. The findings contribute new knowledge on moderating effect to the previous scholars who linked industry forces to university performance (Porter, 1980; and Prescott, 1986).

5.2.4 Joint Moderating Effect of Resource Conditions and Industry Forces

The fourth objective of the study was to establish whether the joint moderating effect of resource conditions and industry forces on the relationship between linkage strategies and university performance is different from their separate effects. A hierarchical multiple regression analysis showed that the change in squared multiple correlation coefficient equals to 0 .020 and with p value less than 0.05. This shows that joint effect of competitive forces explain additional 2% variation in university performance. F ratio test also shows significant variation in the model fit. The t values for model 4 are significantly greater than zero and the values of standardised coefficient, Beta are significantly different from zero. Thus, the strength of relationship between Linkage strategies and university performance depends upon the competitive forces.

From the findings, it was concluded that resource conditions have stronger separate moderating effect on the relationship between linkage strategies and university performance than when jointly considered with industry forces (a decrease in ΔR^2 from 3.9% of separate effect to 2% of joint effect). However, the separate moderating effect of industry forces is weaker than its joint effect on the relationship between linkage strategies and university performance when considered with resource conditions (an increase in ΔR^2 from 0.2% of separate effect to 2% of joint effect). Consequently, hypothesis 4 was accepted that the joint moderating effect of resource conditions and industry forces on the relationship between linkage strategies and organisational performance is different from their separate effects.

The first model (without moderation term) was established and it was found as a significant and valid relationship. Model 4 (with moderating effect) was also established and it was also found as a significant and valid relationship. VIF values are all less than 10 and tolerance values greater zero, indicating no collinearity problems. It was therefore concluded that competitive forces jointly predict performance and they have significant joint moderating effect on the relationship between linkage strategies and university performance. Resource conditions have stronger separate moderating effect than industry forces.

In summary, findings show that the joint effect of competitive forces explains additional 2% variation in university performance. It was concluded that resource conditions have stronger separate moderating effect on the relationship between linkage strategies and university performance than when jointly considered with industry forces.

However, the separate moderating effect of industry forces is weaker than its joint effect on the relationship between linkage strategies and university performance when considered with resource conditions. Consequently, hypothesis 4 was accepted. The findings contribute new knowledge to the continuing debate on the relative role of competitive forces on the relationship between linkage strategies and university performance (Hofer and Schendel, 1978; Porter, 1980).

Generally, private universities recorded stronger scores in most variables compared to public universities as analysed in descriptive statistics. The coefficients of variation values are favourably lower among private universities thus indicating more consistency and stability in variable scores.

It is clear from the findings that universities can only remain relevant if they respond promptly to the changing technology and new economic sector demands, by formulating proper linkage strategies to counter competition challenges and strive to attain and maintain a competitive edge over the rivals in all areas of operation. Embracing healthy competition would lead to improved resource conditions, involvement of stakeholders in decision making process and reduction of destructive competitive forces within education sector as an industry. These findings agree to a large extent with other scholars such as Eshiwani (1999), Karanja (2011), and Martin (2000) who concluded that performance of a firm can only be accurately measured in terms of its linkage with the economic sector that it serves and not in isolation.

5.3 Conclusion

The study draws conclusions on theory and context strands. Past studies and theoretical perspectives linking competitive forces to organisational performance have been inconclusive. Most scholars attribute firm performance to both firm and industry forces. Therefore, it has been difficult to distinguish the relative roles of internal resource conditions and industry forces in explaining firm performance. The most significant contribution of this study is in establishing regression models for predicting organisational performance, specifically in the context of education sector as an industry in Kenya. The models have been able to clearly distinguish the relative effects of the competitive forces on university performance. The results confirmed that Linkage strategies are positively and significantly related to university performance. The premise of this study was that performance of higher learning institutions has been studied in isolation without paying attention to the linkages they have with the economic sector.

The stream of literature on this approach shows that higher learning institutions have many times operated in isolation without considering the demands of economic sector, which is the consumer of their products. The findings of this study reaffirms that strategies fused with linkage components enhance organisational performance. Therefore, when organisational strategies do not reflect linkage aspects in reference to the economic sector it serves, performance becomes weak. The study shaded more light on the relative roles of competitive forces that influence organisational performance. The correlation between linkage strategies and organisational performance is moderated by the resource conditions and industry forces under different contexts. When an organisation is in a state of influx, the condition of its internal resources poses a greater influence in the level of its performance than when it were in a state of stability.

The world is changing day by day, becoming smaller and more closely linked in many different ways. The role of education is to transform society and technological trends by redefining values and norms to influence stakeholders. Education is becoming more informal through modern technologies of the internet and various social networks while formal education system takes new forms and structures using and applying models from business sector. Ability to influence stakeholders in a positive direction is the most valuable resource in an organization. The key part of every management process applied to high education is investing in people and providing successful linkage with stakeholders. Managing stakeholders demands for sensitivity to environmental changes in order to influence outcomes. Higher education institutions are being dramatically transformed. They need to understand the power of change and the aspiration toward concept of stakeholder management.

Stakeholder analysis assists in mapping complexity of problems in managing higher educational organizations in context of dynamics and its relation to the environment. The modality of stakeholders indicates the diversity and multidimensional environment that defines and determines a modern organization. By organizing the model of lifelong learning and influencing stakeholders positively, universities can be able to sustain relevance in this highly competitive era.

The higher education sector in Kenya has been undergoing a lot of structural changes with changing consumer preferences and emerging competition caused by increasing number of public and private universities alike. Universities' market positioning has therefore become extremely volatile. The findings of this study show that their unique resources have more influence in positing them rather than the industry forces. The setting of this study was therefore consistent with many current perspectives and at the same time shading more light on inconclusive theoretical propositions.

The unprecedented quantitative growth in Kenya's higher education sub-sector coupled with inadequate funding for universities have resulted in these institutions facing demand-related challenges, especially in terms of access, equity, relevance and quality of higher education. This raises a major concern regarding the capacity of these institutions to produce skilled manpower to meet the country's current and future development needs. Through teacher to student and supervisor to student ratios, this study found that universities operating in Kenya were experiencing excess demand for courses suggesting that these institutions were responding to economic sector signals. At the same time, some universities had excess capacity to offer certain academic programmes.

The universities need to develop a framework for manpower planning in such as a way that they offer strategic programmes in line with the country's development needs. Otherwise, without coherent linkage strategies for developing skilled manpower, it remains unclear how Kenya is to realize her stated development goals and vision 2030. The study recommends that the government should develop a framework for coordinating human resource development programmes in universities and ensure that these institutions respond to economic sector needs as well s future manpower requirements.

5.4 Implications of the Study

The research findings have theoretical, practical and policy implications for future researchers, university authorities and all stakeholders.

5.4.1 Theoretical Implications

Resource-based view (RBV) provides a favourable model for analysing the resource conditions. The study findings are majorly anchored on RBV. The regression model linking resource conditions and university performance demonstrates that managers in higher learning institutions can apply the model in predicting performance. RBV provides the frame work within which the advantage creating conditions and linkage strategies can be identified from the internal firm resources. The study contributes to understanding of the influence of linkage activities to the performance of universities. It is clear from the findings that economic-sector linkage components must be fussed in the strategies in order to realise superior organisational performance. As was observed by Eshiwani (1999), theories and practices in business strategy development, as used in the for-profit business domain provide a basis for innovative approaches to strategy development but they do not address the comprehensive planning needs of the universities.

Secondly, the study findings clearly define the relative influence of resource conditions and industry forces in explaining firm performance. Porter (1981) observed that most scholars attribute firm performance to competitive forces within and without the firm and therefore, it has been difficult to distinguish their relative roles. This study bridges this gap by establishing mathematical models to explain separate and joint relationships between resource conditions and industry forces. This is the first study to examine the relative roles of competitive forces on university performance in Kenyan context.

Apart from the two main theories highlighted, dynamic capability theory emphasises the need for an organisation to utilize available resources and its capability to adapt to industry dynamics in order to improve firm performance. Findings indicate that dynamic capability is a critical and influential resource that strengthens the relationship between strategy and performance. As additional variable in the conceptual model, the researcher demonstrates that for organisations to achieve superior performance, dynamic capability must remain a key resource that defines strategy formulation and implementation.

Resource dependency theory (RDT) was also established to be critical in defining the level of interdependence between firms. The implication is that organizations that over depend on others may lose their autonomy and competitiveness in an industry. They must develop ways to exploit resources, which are also being sought by other firms, in order to ensure their own survival. Regression model relating each resource condition indicator and university performance indicates that resource dependence level is a significant predictor of university performance.

Organisational behaviour theory gives analysis on the impact that individuals, groups and structures have on behaviour within an organization for the purpose of applying such knowledge towards improving organization effectiveness. The study established that group and individual behaviour dynamics are critical in determining university performance. The theoretical implication is that organisations exhibiting positive team work spirit would achieve superior performance. The relationship between institutional perspective and university performance is that the success of higher education institutions is dependent upon external actors and that university autonomy and academic freedom are threatened by a stakeholder influence. The findings of this study are consistent with this perspective in the sense that among public universities, there is more stakeholder influence. Public university stakeholders have actually been highly involved in the internal governance of university for a long time. The implication is that an organisation should strive to influence its stakeholders in such a way that it wins their loyalty to its product offering hence adopt monopoly-like characteristics. This reduces the stakeholder power that would conversely influence and dictate the behaviour of the organisation.

5.4.2 Implications on Practice

The study highlights the most significant components of strategy that impacts on university performance. Curriculum orientation, industrial attachment, teaching and learning focus and collaborative research have been established as significant predictors of university performance. The university authorities must therefore strategically link these indicators to the economic sector by involving stakeholders in decision making process in order to realise superior performance.

Further, the findings reveal that collaborative research is the most significant predictor of university performance. The universities should therefore reinforce collaborative research in order to realise superior performance.

Secondly, findings show that the university authorities can improve their performance by identifying and improving the condition of institutional resources in order to realise superior performance. Inimitability was found the most significant indicator of resource conditions while value and dynamic capability were the most significant predictors of performance. The implication is that universities should focus on strategies that make their resources inimitable in order to realize superior performance.

Similarly, for universities to attain and maintain competitive advantage, they have to reduce industry competitive forces and threats so that they exhibit monopoly-like characteristics. Findings indicate that threat of new entry is the most significant indicator of industry forces. In the recent past, universities in Kenya have been undergoing quite substantial transformation with a number of constituent university colleges converting to autonomous and fully fledged universities. The number of private universities has also been on the increase. This has caused unavoidable competition and changing market positioning in the education sector as an industry. This could be possibly different when an organisation is in a state of stability. This partly explains why university resource conditions were found more significant moderators of the relationship between linkage strategies and university performance in this study, compared to industry forces.

Grant (1991) noted that when an organisation is in a state of influx, or undergoing environmental turbulence, the condition of its internal resources poses a greater influence in the degree of its performance compared to the industry forces.

Consequently, university authorities should be sensitive to dynamisms within the institutions and the external environmental turbulence while designing strategies. These environmental changes should moderate the focus between industry forces and resource conditions.

There is a need to build institutions that are truly oriented toward the development agenda and the emerging needs within the economic sector. This requires greater efforts at producing the kinds of graduates who will not only be adaptable to the rapidly changing needs but also contribute to innovation and development. Rapid increases in enrolments have occurred without proper consideration of quality issues such as teacher to student ratio and supervisor to student ratio and the extent to which current patterns will satisfy economic sector manpower needs.

Results indicate a number of universities with quality challenges bordering on the size of classes, availability of up-to-date teaching and learning materials and equipment, the relevance of the curriculum to current conditions, and the integration of higher education with the world of work. Higher education institutions should begin to provide pedagogical training to their teachers as well as to their graduate students seeking to be absorbed into the economic sector. Students should have opportunities to experience the world of work through such experiences as industrial attachments, internships, cooperative placements with employers in their field of study, and off-term jobs.

Specific plans should also be developed for the acquisition of state of art technology to cope with emerging challenges and market demands. Institutions need to intensify information exchange and make deliberate efforts to establish sustainable linkages with the economic sector. Public universities are more inclined toward over dependent on government funding. They should join forces to develop centres of excellence, innovative ideas and seek to improve the state of their resources as this would facilitate competitiveness.

A programme of research should be developed around the issues and concerns that appear consistently in deliberations about the current status and future prospects of higher education. Research should keep abreast with teaching and should help to raise the quality of higher education, in particular, and of social life, in general. The contributions of research, however, are hindered by the lack of adequate resources and limited applicability to societal needs. Attention must be paid to improving both basic and applied research, furthering work on advanced technologies of critical social and economic needs, improving the preparation of researchers, setting up adequate structures for the coordination, dissemination and publication of research results, working to make research activities an integral part of institutions' public service functions, and reducing duplication through inter-institutional cooperation involving both researchers and facilities. It has been suggested that the quality of research produced in African universities is rather poor, not only due to the lack of adequate funds and facilities, but also because teachers are not well prepared to do research (Thiam, 1992).

Consideration should be given to the strategies that might be used to improve research training, including the advantages and disadvantages of sending people abroad for study as opposed to organizing local training programs and the consequences of each for brain drain. There is a need to investigate the effectiveness of these activities for both academic staff and students. Academic staff must also remain up-to-date in their knowledge of the fields in which they are by being able to obtain access to books, current journals, and other materials. There should also be resources to support academic staff travel for participation in professional conferences and training programmes.

Government budgets for public universities and fees paid by students in private universities have been inadequate to fund the actual needs of institutions. Higher education institutions must come up with innovative ways of financial sustenance to avoid overdependence, because of their significance for social and economic development. In addition, they should seek to diversify their funding base through a variety of cost-recovery measures such as rental of facilities, charging fees for services to non-university constituencies, and contracting for professional consultation. Institutions need to be financially autonomous, as well as able to control and monitor their own. More research is needed on different patterns of higher education financing. Cost recovery is not a substitute for effective government funding policy which provides funds for investment especially in public universities, but institutions must not over depend on such funding. In addition, greater attention needs to be paid to the study of implementation of reform and innovation. Research should be conducted on the social, political, and economic processes of implementation. There should also be careful evaluation of the outcomes, both intended and unintended.

Results from such evaluations should be used both to monitor the progress of reform and to make modifications necessary for effective implementation of initiatives and curricula. It is important that there be serious consideration of investment in research that will enhance the capacity of universities in the region to further national development.

There is a serious need to provide teachers at the university level with adequate pedagogical skills. This could be supplemented by establishing an information and documentation system on pedagogy to enable timely access to materials. With respect to instructional technology, there is a need to investigate new ways of delivering instruction, including the use of both audio and video materials, as well as other techniques of distance education. Distance education is one way to improve enrolment management that might be used to alleviate the types of problems created by double intakes (admitting two different groups of students at the same time) in Kenya where students have been forced to sit as long as a year at a time between beginning and subsequent years of instruction because campus capacity has been exceeded.

It is important that consideration be given to establishing readily accessible communications links with scientists around the world via international computer networks. This would improve greatly researchers' access to current information about ongoing studies. Most universities have very limited access to modern computing and communications technology, so it is increasingly becoming difficult for teachers and students to keep abreast with current developments in their academic areas. As financial constraints and the complexity of managing financial resources increase, having access to relevant computer soft- and hardware could greatly improve financial management in higher education.

Universities should be in the forefront of helping to plan and develop national and international communication systems in order to facilitate rapid dissemination of information as well as to keep up-to-date with current literature in the academic disciplines. Given the budget constraints of most universities, it is important to investigate technological needs from both an intra- and an inter-institutional perspective so that strategies for equipment acquisition and seeking donor funding can maximize their impact across the entire range of instructional engagements such as in library, research and public service activities. Of course, advanced communications technology requires access to a reliable, efficient, and affordably priced telephone system. Improving outmoded telecommunications systems should be a major government priority. There is a need to collect more systematic data about student progress in universities. This would include developing profiles of admitted students, follow-up studies to determine rates of dropout and time to completion of degrees, and research on student socialization.

Another area of concern has to do with evaluating the quality of instruction, including establishing a systematic way of obtaining both student and peer assessments of teaching. Follow up studies of graduates need to be done to provide information about the success with which students in higher education are being prepared to enter the world of work and their employability.

Careers of academic staff, particularly mobility and brain drain, present urgent problems for higher education. The conditions of work for academic staff need to be examined in order to develop strategies for retaining highly qualified teachers who find more lucrative opportunities outside of higher education and often outside their native countries.

Studies are also needed to determine the status of continuing professional development for academic staff. Mechanisms need to be established to provide opportunities for research training, both of experienced teachers and of postgraduate students. Because of limited student access to textbooks and other instructional materials, academic staff in many fields must deliver the primary content of courses through classroom instruction. Consequently, it is very important that teachers be skilled in the pedagogy of higher education.

Because little is known about the effectiveness of different types of pedagogical approaches in higher education, it would be useful to investigate the pedagogical issues that are unique to higher education in Kenyan context with an aim of building models and programs for improving teaching by academic staff. At the level of economic sector, there is a need to recognize the unique contributions that higher education institutions have made to the adoption of innovation in a variety of fields. Greater efforts should be made to strengthen the contribution of higher education to innovation, especially in the promotion of endogenous technologies and cultural heritage.

International organizations such as UNESCO, FAO and WHO have extensive funding ability, data and expertise that can highly benefit the universities. Such benefits can only be realized if the universities are well informed about what these institutions can offer and how funds as well as other resources can be accessed. In addition to United Nations bodies, the universities would also need to form strong links and partnerships with other international organizations like the International Social Sciences Council and the International Council for Science.

It is important that universities be well-informed on the protocols and conventions that govern these bodies, their status with Kenya and membership requirements. There is need, therefore, to carry out an assessment of the potential benefits of these bodies with a view to maximizing universities' exposure and building relevant partnerships.

There is currently great interest in indigenous knowledge and plant and animal materials in other parts of the world which could be of benefit to universities in Kenya. There is also a large pool of local researchers that could support joint research projects at relatively low costs. Kenyan universities need to market their capability to the rest of the world. Kenya is considered a hub for financial services and tourism in Africa. The country also hosts the headquarters of the United Nations Environmental Programme (UNEP) and this increases opportunities for joint research. Many companies are also attracted to Kenya as a gateway to Africa. For example, Nokia is establishing its Africa operation in Kenya and is willing to work with Kenyan universities in developing new products. Currently, Google has entered into collaboration the university-wide research network to provide e-mail and search engine and local content services to Kenyan universities. Thus, Kenyan universities could scale up their collaboration locally and internationally with universities and industry.

5.4.3 Policy Implications

Findings show that university resource conditions have the most significant moderating effect on the relationship between linkage strategies and university performance. Universities need to set policies that advantage-creating resource conditions. It is also clear that industry forces significantly determine university performance. University policies should therefore focus on activities that neutralize and significantly reduce the influence of industry forces in order to realize superior performance.

When there is increasing threat of new entrants in the market, organisations need to review their market positioning and enhance the value of their unique competitive resources in order to attain and maintain competitive advantage. The results show that the condition of organisational resources is more critical in defining its level of performance compared to industry forces when the industry is in a state of influx.

Organisational policies should take into consideration, the needs and demands of the economic sector that it serves rather than focus on performance in isolation. Curriculum development and review policies, industrial attachment policies all other linkage strategies and procedures must provide space for contributions from stakeholders.

It is clear from the findings that some universities do not regularly review their curricula after every complete cycle. This has a definite impact on the quality of graduates as reflected in the performance of such universities. Robust policies and implementation strategies that address curriculum development and review focus are necessary to improve the quality of graduates from such curricula.

Research policies should be build around finance and management, teaching and curriculum and faculty development to address issues such as excessively rapid growth of enrolments, inadequate facilities and equipment, the need for human resource development (including improving qualifications and pedagogical skills of teachers), improving the conditions of work in universities, and improving the fit between higher education and the world of work and making institutions more cost-effective. Reform and innovation need to be based on a firm foundation of planning and policy analysis at both institutional and national levels.

A wide variety of statistical data are collected routinely by the government and researchers, but they tend not to be used for systematic analysis. There needs to be better use of the many knowledgeable and highly skilled academics in Kenyan universities for providing expert advice on policy options.

Research institutions in Kenya are area-specific and as such, they have excellent equipment and qualified manpower that can be utilized to enrich teaching and research at the universities. The institutes can carry out joint research and training with the universities and their facilities can also be used by both faculty and students thus exposing them to the requisite infrastructure for research. Some research institutions have strong partnerships with development partners through whom they get substantive funding and expertise. Universities can similarly benefit through collaboration and also benefit from such funds.

There are many international research organizations which operate in Kenya. These research institutes are often disconnected from the local research environment and experts. There is therefore, need to review the legal framework, protocol and conventions that set up these institutions to allow for more collaboration with the universities and local researchers.

There is need to establish a national policy on university-economic sector collaborative research and promotion of innovative knowledge transfer mechanisms. This would involve development of policies for creating spin-off companies to utilize university patents and licenses and establishment of IPR management offices in each university and support the establishment of joint university-economic sector incubation centres. This would involve development of guidelines and template agreements for establishing jointly owned incubation centres.

Faculty internships in local economic sectors are, at present, limited. An increase in faculty internships and short-term consulting opportunities would greatly improve the quality of teaching. Student internships in public universities are required for technical degree programmes. Internships for most of the students would increase the quality of graduates.

There is need for university managers to develop policies that promote collaborative curricula development in universities. The outcome would be curriculum that is relevant to economic sectors operating in Kenya and other African countries. Further, policies that promote joint research and contract research with local small and medium enterprises as well as multinational corporations operating in Kenya would increase the research capacity of local universities, increase in number of publications and patents, and increase in research funding by economic sector

There is need for clear policies that promote linkages between universities and middle level colleges. Kenya has established several research institutes and middle level colleges whose activities are not synchronized with the universities research and teaching programmes. Often, some research institutes have very well equipped research laboratories. In some instances, some universities have better equipped research facilities. Sharing of these resources would benefit both and improve national innovation activities.

Universities need to review curricula in order to incorporate community service in all degree programmes. The outcome of such policies would produce graduates who are sensitive to community needs and who understand how their degree programmes could support social development.

Only a small fraction of the students enrolled in Kenyan universities are participating in community based co-curricular activities. Such policies would increase the level of participation by all students, and especially graduate students with a strong volunteer spirit and readiness to help their communities develop.

Having recognized that university education is critical in providing skilled manpower for to respond to the changing demands of the economic sector, the government needs to spearhead the expansion and improvement of public universities, which should play a key role in realizing the country's ambitious industrialization goal. Without coherent linkage strategies for developing high-level technical manpower, it may not be clear how Kenya is to realize the envisaged economic development, technological transition and sustained growth. Characterized by excess capacity and excess demand, the pattern of academic programmes offered in universities operating in Kenya reveals a sense of competition among these institutions, which may imply inefficient use of scarce resources.

Results of this study show that curriculum revision is not consistent in most universities. This implies inadequate government effort in coordinating the development of academic programmes offered in these institutions to make them respond to the country's development challenges. Universities need to adopt robust policy framework to monitor economic sector signals and determine appropriate value weightings on some academic programmes so as meet the economic sector shortages. This study recommends continuous beneficiary assessments by stakeholders to inform and guide students concerning career choices to enhance student placement. This will minimize the excess capacity existing in some universities as revealed by teacher to student ratios, to offer certain academic programmes.

In order to minimize duplication of efforts and excess capacity for offering some courses that are key to national development but less relevance to the economic sector, which can lead to inefficient use of resources, there should be a framework for creating higher education institutions of excellence including universities to offer academic programmes for national strategic purposes.

5.5 Limitations of the study

The study findings notwithstanding, data collection was restricted only among university authorities. Primary data was collected from only one respondent per university. Inclusion of views from stakeholders such as students would have probably revealed other dimensions in the findings. However, common methods bias was mitigated through the use of additional secondary data to validate primary data. The questions involved strategic issues which could only be well addressed by the decision makers on university academic issues.

The second limitation of the study is that it was not possible to include all the determinants of institutional performance. Although balanced score card was appropriately used to represent all aspects of organisational performance, more aspects of financial performance such as return on investment (ROI) could have possibly revealed other dimensions in the findings.

Thirdly, it is possible for the observed performance of universities to be highly affected by other external forces such as government policies, cultural trends and attitudes towards education, and other unforeseen variables rather than linkage strategies and competitive forces only. However, the results have a caveat on this ground in the sense that the indicators of industry forces used in the study included the influence from most of the stakeholders in the education sector as an industry.

5.6 Suggestions for Future Research

Future research should address the limitations of this study. First, the study only focused on forty seven (47) universities in Kenya which have had more than one graduation cycle. It is possible to extend the study in future as more universities graduate and to other institutions of higher learning as well.

Secondly, future researchers on university performance could change the study context and explore antecedents of the observed relationships internationally. The unique environmental and industry dynamics in other countries could change the patterns of relationships as observed in this study.

The third recommendation is that future researchers could expand the respondents to include students and other stakeholders within the education sector as an industry to diversify the opinions and views. This could probably alter the strengths and significance of relationships between variables.

Fourth, future researchers could enlarge the bracket of variable indicators. For instance, additional determinants such as exchange programmes and intellectual capital could be included as part of linkage strategies. Other financial performance indicators such return on assets, return on equity, dividend yield and price-earnings could be included.

Fifth, future research could focus on studying organisations under a relatively stable environment. This study and empirical findings from other studies indicate that resource conditions are the most critical determinant of organisational performance in a state of influx. It would be interesting to test these convergent findings in a relatively stable environment. Future studies should be undertaken in Kenya and the East African region using relevant data from a variety of media sources and for longer periods of time. Particularly, it is recommended that regular surveys should be conducted by stakeholders including relevant government departments and universities to specifically seek opinions of prospective employers on what academic programmes and specific skills they consider critical for various jobs. Regular surveys need to be undertaken to obtain perceptions of university students on various jobs and industry. Such studies shall produce information that would inform curriculum development process among universities so as to make higher education in Kenya more relevant to the country's current and future development needs.

In conclusion, it is expected that the theoretical frame work and the findings of this study will encourage scholars in strategy, organisational behaviour and governance as well as all stakeholders in higher education to further examine the determinants of the value of university education from multi-theoretical perspectives.

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APPENDICES

APPENDIX I: RESEARCH QUESTIONNAIRE

SECTION A: UNIVERSITY BACKGROUND

1. Name of university **(optional)** …………………………………
2. Please tick √) the Status of the university as appropriate
   a) Public University   ( )
   b) Private University   ( )

3. Please indicate how many graduations the university has held since its establishment...
4. Please Indicate your designation/position…………………………………..........

5. For how long have you served in your current position?
6. What is your highest level of education attained? Please tick (√) as appropriate).
   a) Ordinary level..... …………………………………………   ( )
   b) A-Level..... …………………………………..............   ( )
   c) Diploma …..............…………………………………   ( )
   d) Higher Diploma...   ( )
   e) Bachelor's Degree …………………………………………   ( )
   f) Master's Degree …………………………………………   ( )
   g) Doctorate Degree ………………………………………….   ( )
   h) Others (specify) …………………………………………   ( )
7. Please list the main areas of your job description **(optional)**
   ....
   ....
   ....
   ....
8. Please indicate your personal address **(optional)**
   ...
   ...
   ....

9. Please tick (√)as appropriate the academic programme (s) you offer
   a) Certificate ( )
   b) Diploma   ( )
   c) Bachelors ( )
   d) Masters   ( )
   e) PhD   ( )
   f) Others (Specify)…………………………………………………
      ……………………………………………………………..
      ……………………………………………………………..

SECTION B: LINKAGE STRATEGIES

10. To what extent do you agree with the following statements? Please tick (√) appropriately in the spaces provided.

	CURRICULUM ORIENTATION	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
a	We have a very effective curriculum development and review policy					
b	We always involve the stakeholders in every aspect of curriculum development and review process					
c	Each curriculum in the university is regularly reviewed after every full curriculum cycle					
d	We rarely involve other professional bodies during curriculum development and review process					
	INDUSTRIAL ATTACHMENT FOCUS					
a	We have a very effective industrial attachment policy					
b	We fully adhere to industrial attachment policy					
c	We always involve the stakeholders in every aspect of industrial attachment					
d	We always ensure that every student undertakes industrial attachment in an industry relevant to his or her area of specialisation.					
e	Students rarely adhere to the required duration of industrial attachment					
f	Every student on industrial attachment is very effectively monitored and appropriately assessed.					
	TEACHING AND LEARNING FOCUS					
a	We fully practice student centred teaching and learning methods.					
b	The teaching and learning facilities are frequently evaluated, reviewed and maintenance done.					
c	Every student has adequate access to electronic books and journal articles for library reference					
d	The computer to student ratio is sufficient					
e	Every student has adequate access to Lab equipment					
f	Every student has adequate access to the field equipment					
g	We have highly qualified and experienced academic staff					
h	The university has no state of the art technologically relevant teaching and learning facilities					
i	Not all lecturers are sufficiently qualified with adequate content mastery in their fields					
j	Every lecturer adequately prepares sufficient and relevant curriculum content by benchmarking the emerging issues in the economic sector					

	COLLABORATIVE RESEARCH					
a	We have a very effective and continuously reviewed research policy					
b	There is increasing number of university- economic sector collaborative research undertaken					
c	The collaborative research findings are appropriately and regularly implemented					
d	Post graduate students rarely undertake research relating to economic sector challenges in order to recommend possible solutions					
e	The researchers in the university continuously present research findings to the public sector and encourage implementation of recommendations					
f	university and economic sector collaborative research findings are always considered during curriculum review and content development					
g	There is decreasing number of research publications by our academic staff					

SECTION C: COMPETITIVE FORCES

10. To what extent do you agree with the following statements? Please tick
(√)appropriately in the spaces provided.

(A) University Resource Conditions

	VALUE	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
a	We seek to continuously improve state of resources in the university					
b	Our resources do not adequately meet the expected standards in the Industry					
c	Our strategic resources are of the highest value compared to those of other universities in Kenya					
	RARENESS					
a	Our recourses are very unique and rare compared to those of other universities in Kenya					
b	There is no much difference between our resources and those of other universities in Kenya					
	INIMITABILITY					
a	Our resources are completely peculiar and therefore eliminates duplication by other universities					
b	Some universities have managed to copy and imitate our strategies					
c	Our strategies and processes are extremely difficult to be imitated by other universities					
	NON-SUBSTITUTABILITY					
a	There are no other alternative choices in the industry that our clients often opt to go for.					
b	Our resources are very prestigious compared to those of other universities in Kenya					
c	Some clients have managed to substitute our resources with other alternatives in other universities in Kenya					
	RESOURCE DEPENDANCY LEVEL					
	Our university does not depend on other institutional resources to develop and implement linkage strategies					
	DYNAMIC CAPABILITIES					
	We have full capability necessary to adapt to industry dynamics to determine and implement linkage strategies					
	INDIVIDUAL AND GROUP BEHAVIOUR					
	There exists maximum team work, cooperation, responsibility and accountability in developing and implementing linkage strategies					

(B) Industry Forces

	BARGAINING POWER OF BUYERS	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
a	There exists high bargaining power of clients within education industry in Kenya and this greatly influences our strategies					
b	The bargaining power of stakeholders highly influence the kind of academic programmes offered and general decision making process					
c	The bargaining power of employers in the industry has a lot of influence and impact on our strategies and processes					
	BARGAINING POWER OF SUPPLIERS					
a	The bargaining power of our suppliers is very high and this influences their loyalty towards our university					
b	The bargaining power of sponsors and donors has high influence on our strategies and this influences their loyalty to our university					
	THREAT OF ENTRY					
a	Many universities have ability to enter our market by acquiring and implementing similar strategies as ours					
b	It costs little time and money to enter our market by acquiring and implementing similar linkage strategies as ours.					
	THREAT OF SUBSTITUTION					
a	There is increasing threat from domestic academic institutions possessing alternative substitutes to our linkage strategies					
b	There exists the threat of first entrance into the industry thus making us less competitive					
	RIVALRY AMONG CURRENT COMPETITORS					
a	There exists high level of rivalry over similar programmes and strategies in the education industry					
b	We have every information about strategies developed by our competitors in the industry					
	STAKEHOLDER NORMS AND VALUES					
	The high standards of norms and values demanded by stakeholders is difficult to comply with hence increasing competition					

SECTION D: UNIVERSITY PERFORMANCE.

12. Please indicate appropriate value or number under each year against each item provided

	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013
Net surplus (Ksh)					
Total amount of scholarship awards or grants for students apart from treasury grants to JAB students (Ksh)					
Total number of lecturers					
Total number of students					
Total number of postgraduate students undertaking research					
Total number of research supervisors allocated					
Universities webomatrics ranking in Kenya					
Total number of stake holder conferences held					
Total number of collaborative activities with other institutions held					
total number of industry visits made					
Total number of guest speakers hosted					

13. To what extent do you agree with the following statement? Please tick ($\sqrt{}$) appropriately in the spaces provided.

		Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
	The performance of our university has greatly increased over the last five years					

Thank you very much for your cooperation.

APPENDIX II: LETTER OF AUTHORIZATION BY UNIVERSITY OF NAIROBI

APPENDIX III: STATUS OF UNIVERSITIES IN KENYA

Public Chartered Universities in Kenya

1. University of Nairobi
2. Moi University
3. Kenyatta University
4. Egerton University
5. Jomo Kenyatta University of Agriculture and Technology
6. Maseno University
7. Masinde Muliro University of Science and Technology
8. Technical University of Kenya
9. Dedan Kimathi University of Technology
10. Chuka University
11. Technical University of Mombasa
12. Pwani University
13. Kisii University
14. University of Eldoret
15. Maasai Mara University
16. Jaramogi Oginga Odinga University of Science and Technology
17. South Eastern Kenya University
18. Meru University of Science and Technology
19. Multi-Media University of Kenya
20. Kabianga University
21. Laikipia University
22. Karatina University

Public Chartered University Constituent Colleges in Kenya

1. Murang'a University College
2. Machakos University College
3. Cooperative University College of Kenya
4. Embu University College
5. Kirinyaga University College
6. Rongo University College
7. Kibabii Universtity College
8. Garissa University College
9. Taita Taveta University College

Private Chartered Universities in Kenya

1. University of Eastern Africa, Baraton
2. Catholic University of Eastern Africa
3. Scott Theological College
4. Daystar University
5. United States International University
6. Africa Nazarene University
7. Kenya Methodist University
8. St. Paul's University
9. Pan Africa Christian University
10. Strathmore University
11. Kabarak University
12. Mount Kenya University
13. Africa International University
14. Kenya Highlands Evangelical University

15. Great Lakes University of Kisumu

Private Chartered University Constituent Colleges in Kenya

1. Hekima University College
2. Tangaza University College
3. Marist International University College
4. Regina Pacis University College
5. Uzima University College

Universities Operating with Letter of Interim Authority (LIA) in Kenya

1. Kiriri Women's University of Science and Technology
2. Aga Khan University
3. Gretsa University
4. KCA University of East Africa
5. Presbyterian University of East Africa
6. Adventist University
7. Inoorero University
8. The East African University
9. GENCO University
10. Management University of Africa
11. Riara University
12. Pioneer International University

Registered Private Universities in Kenya

1. Nairobi International School of Theology
2. East Africa School of Theology

Source: Commission for university Education website, 2013.

APPENDIX IV: UNIVERSITIES WITH AT LEAST ONE GRADUATION CYCLE

Public Universities

1. University of Nairobi
2. Moi University
3. Kenyatta University
4. Egerton University
5. Jomo Kenyatta University of Agriculture and Technology
6. Maseno University
7. Masinde Muliro University of Science and Technology
8. Technical University of Kenya
9. Dedan Kimathi University of Technology
10. Chuka University
11. Technical University of Mombasa
12. Pwani University
13. Kisii University
14. University of Eldoret
15. Maasai Mara University
16. Jaramogi Oginga Odinga University of Science and Technology
17. South Eastern Kenya University
18. Meru University of Science and Technology
19. Multi-Media University of Kenya
20. Kabianga University
21. Laikipia University
22. Karatina University

Private Universities

1. University of Eastern Africa, Baraton
2. Catholic University of Eastern Africa
3. Scott Theological College
4. Daystar University
5. United States International University
6. Africa Nazarene University
7. Kenya Methodist University
8. St. Paul's University
9. Pan Africa Christian University
10. Strathmore University
11. Kabarak University
12. Mount Kenya University
13. Africa International University
14. Kenya Highlands Evangelical University
15. Great Lakes University of Kisumu
16. Kiriri Women's University of Science and Technology
17. Aga Khan University
18. Gretsa University
19. KCA University of East Africa
20. Presbyterian University of East Africa
21. Adventist University
22. Inoorero University
23. The East African University
24. Nairobi International School of Theology
25. East Africa School of Theology

APPENDIX V: INDEPENDENT SAMPLES TEST FOR LINKAGE STRATEGIES

Variable	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Very effective curriculum development and review policy	-.13411	42	.89395	-.05797	.43226	-.93030	.81436
We involve stakeholders in curriculum development and review policy	-.97563	42	.33483	-.38716	.39684	-1.18801	.41368
Curriculum is regularly reviewed	-.97229	42	.33647	-.38302	.39394	-1.17802	.41198
We involve other professional bodies	-1.94958	42	.05792	-.83644	.42904	-1.70227	.02939
Very effective industrial attachment policy	.20507	42	.83851	.08903	.43412	-.78707	.96512
We fully adhere to industrial attachment policy	-.53870	42	.59294	-.19669	.36512	-.93352	.54015
We involve stakeholders in industrial attachment	.05347	41	.95761	.01948	.36430	-.71623	.75519
Every student undertakes industrial attachment	.00569	42	.99548	.00207	.36367	-.73185	.73599
Students adhere to the required duration of industrial attachment	-1.78432	42	.08160	-.74534	.41772	-1.58833	.09765
Every student is effectively monitored and appropriately assessed	-.00569	42	.99548	-.00207	.36367	-.73599	.73185
We practice student centred teaching and learning methods	-.69190	42	.49280	-.24017	.34711	-.94066	.46033

Source: primary data

APPENDIX V Cont...

Facilities are frequently evaluated, reviewed and maintained	-1.01534	42	.31576	-.33540	.33034	-1.00205	.33124
Every student has adequate access to electronic books and journal articles	.23700	42	.81381	.07246	.30576	-.54458	.68950
Computer to student ratio is sufficient	-.05826	42	.95381	-.01863	.31981	-.66404	.62677
Every student has adequate access to lab equipment	-.31978	42	.75072	-.09731	.30430	-.71141	.51679
Every student has adequate access to field equipment	-.03496	42	.97228	-.01035	.29613	-.60797	.58726
We have highly qualified and experienced staff	.12001	42	.90505	.04141	.34505	-.65492	.73774
University has state of art technologically relevant teaching and learning facilities	-.78323	42	.43789	-.34576	.44145	-1.23663	.54512
all lecturers are sufficiently qualified	-1.32674	42	.19176	-.56315	.42446	-1.41974	.29344
Every lecturer prepares sufficient and relevant curriculum content	.20822	42	.83606	.09731	.46733	-.84580	1.04042
Very effective and continuously reviewed research policy	-1.07852	42	.28696	-.46791	.43384	-1.34344	.40762
Increasing number of university economic sector collaborative research	-1.36020	42	.18102	-.56729	.41706	-1.40895	.27438

Source: Primary data

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APPENDIX V Cont...

Collaborative research findings are regularly implemented	-2.35502	42	.02327	-.97930	.41583	-1.81848	-.14011
Post graduate students often undertake research relating to economic sector	-1.90237	42	.06399	-.74948	.39397	-1.54455	.04559
Researchers present research findings to the public sector	-2.01715	42	.05010	-.89648	.44443	-1.79337	.00041
University and economic sector collaborative research findings are always considered	-1.83206	42	.07404	-.79710	.43508	-1.67514	.08094
There is increasing number of research publications by our academic staff	-2.44578	42	.01873	-.98344	.40210	-1.79490	-.17197
AVERAGE	-0.8426	41.962	0.498253	-0.34588	0.388323	-1.12956	0.43780

Source: Primary data

APPENDIX VI: INDEPENDENT SAMPLES TEST FOR UNIVERSITY RESOURCE CONDITIONS

variable	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Seek to continuously improve state of resources	-1.898	42	.065	-.79710	.41986	-1.6444	.05022
Resources meet expected standards of in the industry	-2.138	42	.038	-.88820	.41549	-1.7266	-.04971
Our strategic resources are of the highest value compared to other universities	-1.296	42	.202	-.55901	.43127	-1.4293	.31133
Our resources are very unique and rare compared to those of other universities	-1.043	42	.303	-.46791	.44859	-1.3732	.43739
Significant difference between our resources and those of other universities	-1.740	42	.089	-.75362	.43313	-1.6277	.12047
Our resources are completely peculiar	-2.042	42	.047	-.84472	.41367	-1.6795	-.00991
No university has managed to copy and imitate our strategies	-2.963	42	.005	-1.07867	.36408	-1.8134	-.34393
Our strategies and processes are extremely difficult to imitate	-.465	42	.644	-.19048	.40930	-1.0164	.63553
No other alternative choices in the industry that our clients can opt to go for	-2.238	41	.031	-.93043	.41574	-1.7700	-.09083
Our resources are very prestigious compared to those of other universities	-1.883	42	.067	-.80952	.42998	-1.6772	.05820
No client has managed to substitute our resources with other alternatives	-2.054	42	.046	-.77847	.37909	-1.5435	-.01343

Source: Primary data

APPENDIX VI Cont...

Our university does not depend on other institutional resources	-2.141	42	.038	-.88406	.41284	-1.7172	-.05091
We have full capacity to adapt to industry dynamics	-2.071	42	.045	-.84058	.40593	-1.6597	-.02138
There exists maximum team work, cooperation, responsibility and accountability	-1.631	42	.110	-.75362	.46220	-1.6863	.17913
Average	-1.8287	42	0.123571	-0.75546	0.41722	-1.597	0.086584

Source: Primary data

APPENDIX VII: INDEPENDENT SAMPLES TEST FOR INDUSTRY FORCES

Variable	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
There exists high bargaining power of clients within education industry in Kenya and this greatly influences our strategies	1.593	42	.119	.71014	.44579	-.18950	1.60979
The bargaining power of stakeholders highly influence the fees charged against each programme and decision making process	1.593	42	.119	.71014	.44579	-.18950	1.60979
The bargaining power of employers in the industry has a lot of influence and impact on our strategies and processes	1.593	42	.119	.71014	.44579	-.18950	1.60979
The bargaining power of our suppliers is very high and this influences their loyalty towards our university	1.593	42	.119	.71014	.44579	-.18950	1.60979
The bargaining power of sponsors and donors has high influence on our strategies and this influences their loyalty to our university	2.096	42	.042	.84886	.40503	.03147	1.66625

Note: the table header "t-test for Equality of Means" spans the t, df, Sig. (2-tailed), Mean Difference, Std. Error Difference, and 95% Confidence Interval columns.

Source: *Primary data*

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APPENDIX VII Cont...

Many universities have ability to enter our market by acquiring and implementing similar strategies as ours	2.096	42	.042	.84886	.40503	.03147	1.66625
It costs little time and money to enter our market by acquiring and implementing similar linkage strategies as ours.	2.383	42	.022	.93582	.39274	.14324	1.72840
There is increasing threat from domestic academic institutions possessing alternative substitutes to our linkage strategies	1.593	42	.119	.71014	.44579	-.18950	1.60979
There exists the threat of first entrance into the industry thus making us less competitive	1.593	42	.119	.71014	.44579	-.18950	1.60979
There exists high level of rivalry over similar programmes and strategies in the education industry	1.593	42	.119	.71014	.44579	-.18950	1.60979
We have every information about strategies developed by our competitors in the industry	2.216	42	.032	.93696	.42272	.08325	1.79066
The high standards of norms and values demanded by stakeholders is difficult to comply with hence increasing competition	1.593	42	.119	.71014	.44579	-.18950	1.60979
	1.79458	42	0.09083	0.770968	0.43265	-0.10221	1.64415

Source: Primary data

APPENDIX VIII: INDEPENDENT SAMPLES TEST FOR UNIVERSITY PERFORMANCE

Variable	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
						t-test for Equality of Means	
Net surplus	-1.025	42	.311	-.35404	.34557	-1.05142	.34334
Total amount of scholarship awards or grants for students	-.101	42	.920	-.03727	.36854	-.78102	.70648
Total number of Students	-.469	42	.642	-.18841	.40173	-.99912	.62231
Teacher to Student ratio	-.457	42	.650	-.17598	.38533	-.95361	.60164
Supervisor to Student ratio	-1.592	42	.119	-.63975	.40194	-1.45090	.17140
University webomatrics ranking in Kenya	-1.751	42	.087	-.59420	.33938	-1.27909	.09069
Total number of stakeholder conferences held	-.464	42	.645	-.18427	.39684	-.98511	.61658
Total number of collaborative activities with other institutions held	-.339	42	.736	-.13665	.40278	-.94948	.67619
Total number of industry visits made	-.997	42	.325	-.40166	.40297	-1.21488	.41156
Total number of guest speakers hosted	-.617	42	.541	-.25880	.41954	-1.10547	.58787
Average	-0.82345	42	0.472364	-0.31018	0.3835	-1.08412	0.463755

Source: Primary data

APPENDIX IX: RELIABILITY TESTS ON STUDY VARIABLES

Reliability Statistics on All Variables

Cronbach's Alpha	N of Items
.980	64

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	44	97.8
	Excluded[a]	1	2.2
	Total	45	100.0
a. List wise deletion based on all variables in the procedure.			

Reliability Statistics on University Performance

Cronbach's Alpha	N of Items
.975	11

Item-Total Statistics on University Performance

Variable	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Net surplus	34.9318	131.693	.909	.972
Total amount of scholarship awards or grants for students	34.9545	130.091	.921	.972
Total number of Students	35.1136	126.801	.955	.970
Teacher to Student ratio	34.9773	127.930	.957	.970
Supervisor to Student ratio	35.0682	128.205	.875	.973
University webomatrics ranking in Kenya	35.5682	143.739	.429	.984
Total number of stakeholder conferences held	35.0682	129.600	.863	.973
Total number of collaborative activities with other institutions held	35.0455	128.230	.900	.972
Total number of industry visits made	34.9545	126.882	.939	.971
Total number of guest speakers hosted	34.8864	125.824	.942	.971
Performance of our university has greatly increased over the past five years	34.8864	130.940	.910	.972

Source: *Primary data*

APPENDIX IX Cont...

Reliability Statistics on Linkage Strategies

Cronbach's Alpha	N of Items
.992	27

Item-Total Statistics on Linkage Strategies

variable	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Very effective curriculum development and review policy	91.4651	956.255	.944	.991
Involves stakeholders in curriculum development and review policy	91.6047	961.769	.970	.991
Curriculum is regularly reviewed	91.5814	963.725	.927	.991
We often involve other professional bodies	91.1395	953.790	.891	.991
Very effective industrial attachment policy	91.3721	959.049	.918	.991
We fully adhere to industrial attachment policy	91.4884	968.589	.952	.991
Involves stakeholders in industrial attachment	91.3953	971.292	.939	.991
Every student undertakes industrial attachment	91.3256	971.558	.933	.991
Students adhere to the required duration of industrial attachment	91.0233	955.071	.962	.991
Every student is effectively monitored and appropriately assessed	91.3488	971.328	.920	.991
We practice student centred teaching and learning methods	91.4884	973.922	.945	.991
Facilities are frequently evaluated, reviewed and maintained	91.5349	974.874	.977	.991
Every student has adequate access to electronic books and journal articles	91.5116	983.970	.893	.992
Computer to student ratio is sufficient	91.5116	982.684	.873	.992

Source: Primary data

APPENDIX IX Cont...

Every student has adequate access to lab equipment	91.3721	994.001	.736	.992
Every student has adequate access to field equipment	91.4186	990.392	.817	.992
We have highly qualified and experienced staff	91.3488	980.185	.843	.992
University has state of art technologically relevant teaching and learning facilities	91.3256	964.082	.791	.992
All lecturers are sufficiently qualified	91.0698	953.400	.964	.991
Every lecturer prepares sufficient and relevant curriculum content	91.2558	965.623	.766	.992
Very effective and continuously reviewed research policy	90.9535	953.141	.961	.991
Increasing number of university economic sector collaborative research	91.0465	958.188	.933	.991
Collaborative research findings are regularly implemented	91.0930	957.324	.915	.991
Post graduate students mostly undertake research relating to economic sector	91.0698	963.590	.913	.991
Researchers present research findings to the public sector	91.1860	949.679	.953	.991
University and economic sector collaborative research findings are always considered	91.0930	955.182	.919	.991
There is increasing number of research publications by our academic staff	91.1395	957.409	.944	.991

Source: Primary data

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APPENDIX IX Cont...

Reliability Statistics on Resource Conditions

Cronbach's Alpha	N of Items
.981	14

Item-Total Statistics on Resource Conditions

variable	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Seek to continuously improve state of resources	48.6047	274.721	.931	.979
Resources meet expected standards of in the industry	48.6047	273.959	.948	.978
Our strategic resources are of the highest value compared to other universities	48.4419	277.586	.881	.980
Our resources are very unique and rare compared to those of other universities	48.4186	275.916	.912	.979
Significant difference between our resources and those of other universities	48.6744	272.844	.932	.979
Our resources are completely peculiar	48.6279	273.715	.962	.978
No university has managed to copy and imitate our strategies	48.5581	293.872	.611	.984
Our strategies and processes are extremely difficult to imitate	48.4419	286.586	.719	.982
No other alternative choices in the industry that our clients can opt to go for	48.6512	276.471	.909	.979
Our resources are very prestigious compared to those of other universities	48.7442	276.814	.862	.980

Source: Primary data

APPENDIX IX Cont...

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
No client has managed to substitute our resources with other alternatives	49.0000	287.762	.701	.982
Our university does not depend on other institutional resources	48.5581	273.538	.964	.978
We have full capacity to adapt to industry dynamics	48.5814	274.106	.972	.978
There exists maximum team work, cooperation, responsibility and accountability	48.6279	268.953	.967	.978

Reliability Statistics on Industry Forces

Cronbach's Alpha	N of Items
.998	12

Item-Total Statistics on Industry Forces

variable	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
There exists high bargaining power of clients within education industry in Kenya and this greatly influences our strategies	25.3953	260.959	.997	.998
The bargaining power of stakeholders highly influence the fees charged against each programme and decision making process	25.3953	260.959	.997	.998
The bargaining power of employers in the industry has a lot of influence and impact on our strategies and processes	25.3953	260.959	.997	.998
The bargaining power of our suppliers is very high and this influences their loyalty towards our university	25.3953	260.959	.997	.998

Source: Primary data

APPENDIX IX Cont...

The bargaining power of sponsors and donors has high influence on our strategies and this influences their loyalty to our university	25.3721	264.953	.987	.998
Many universities have ability to enter our market by acquiring and implementing similar strategies as ours	25.3721	264.953	.987	.998
It costs little time and money to enter our market by acquiring and implementing similar linkage strategies as ours.	25.4186	267.392	.947	.999
There is increasing threat from domestic academic institutions possessing alternative substitutes to our linkage strategies	25.3953	260.959	.997	.998
There exists the threat of first entrance into the industry thus making us less competitive	25.3953	260.959	.997	.998
There exists high level of rivalry over similar programmes and strategies in the education industry	25.3953	260.959	.997	.998
We have every information about strategies developed by our competitors in the industry	25.3488	263.661	.990	.998
The high standards of norms and values demanded by stakeholders is difficult to comply with hence increasing competition	25.3953	260.959	.997	.998

Source: Primary data

APPENDIX X: REGRESSION DATA ON MODERATING EFFECT OF RESOURCE CONDITIONS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.930[a]	.865	.859	.41683	.865	131.760	2	41	.000
2	.951[b]	.905	.897	.35536	.039	16.410	1	40	.000
a. Predictors: (Constant), CX2, CX1									
b. Predictors: (Constant), CX2, CX1, CX1andCX2									

KEY: CX1: Centered Linkage Strategies; CX2: Centered Resource Conditions

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.786	2	22.893	131.760	.000[a]
	Residual	7.124	41	.174		
	Total	52.909	43			
2	Regression	47.858	3	15.953	126.325	.000[b]
	Residual	5.051	40	.126		
	Total	52.909	43			
a. Predictors: (Constant), CX2, CX1						
b. Predictors: (Constant), CX2, CX1, CX1andCX2						
c. Dependent Variable: University Performance						

Regression Coefficients

		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.126	.068		46.131	.000	2.990	3.263					
	CX1	.129	.224	.131	.578	.566	-.322	.581	.908	.090	.033	.341	2.935
	CX2	.865	.245	.802	3.531	.001	.370	1.360	.930	.483	.202	.279	3.580
2	(Constant)	2.635	.134		19.594	.000	2.363	2.906					
	CX1	.304	.219	.309	1.392	.172	.746	.138	.908	.215	.068	.093	10.752
	CX2	1.423	.250	1.320	5.688	.000	.917	1.929	.930	.669	.278	.172	5.816
	CX1andCX2	.401	.099	.245	4.051	.000	.201	.601	-.172	.539	.198	.341	2.935

Source: *Primary data*

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.924[a]	.855	.847	.43325	.855	120.436	2	41	.000
2	.926[b]	.857	.846	.43512	.002	.648	1	40	.426
a. Predictors: (Constant), CX3, CX1									
b. Predictors: (Constant), CX3, CX1, CX1andCX3									

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.213	2	22.607	120.436	.000[a]
	Residual	7.696	41	.188		
	Total	52.909	43			
2	Regression	45.336	3	15.112	79.817	.000[b]
	Residual	7.573	40	.189		
	Total	52.909	43			
a. Predictors: (Constant), CX3, CX1						
b. Predictors: (Constant), CX3, CX1, CX1andCX3						
c. Dependent Variable: University Performance						

Regression Coefficients

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	3.449	.065		52.795	.000					
	CX1	.481	.153	.489	3.139	.003	.908	.440	.187	.146	6.835
	CX3	-.335	.115	-.454	-2.914	.006	-.905	-.414	-.174	.146	6.835
2	(Constant)	3.539	.130		27.229	.000					
	CX1	.444	.161	.451	2.767	.009	.908	.401	.166	.134	7.436
	CX3	-.314	.118	-.426	-2.657	.011	-.905	-.387	-.159	.139	7.174
	CX1andCX3	.059	.073	.080	.805	.426	.768	.126	.048	.360	2.776

Source: Primary data

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APPENDIX XII: REGRESSION ANALYSIS ON JOINT MODERATING EFFECT

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.933[a]	.870	.860	.41444	.870	89.347	3	40	.000
2	.943[b]	.890	.878	.38667	.020	6.951	1	39	.012
a. Predictors: (Constant), CX2, CX3, CX1									
b. Predictors: (Constant), CX2, CX3, CX1, CX1andCX2andCX3									

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.039	3	15.346	89.347	.000[a]
	Residual	6.870	40	.172		
	Total	52.909	43			
2	Regression	47.078	4	11.769	78.717	.000[b]
	Residual	5.831	39	.150		
	Total	52.909	43			
a. Predictors: (Constant), CX2, CX3, CX1						
b. Predictors: (Constant), CX2, CX3, CX1, CX1andCX2andCX3						
c. Dependent Variable: University Performance						

Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.443	.063		55.053	.000					
	CX1	.351	.158	.357	2.221	.032	.908	.331	.127	.126	7.951
	CX3	-.300	.111	-.407	-2.701	.010	-.905	-.393	-.154	.143	6.977
	CX2	.154	.070	.216	2.192	.034	.824	.328	.125	.334	2.997
2	(Constant)	3.306	.078		42.255	.000					
	CX1	.402	.149	.409	2.702	.010	.908	.397	.144	.124	8.088
	CX3	-.305	.104	-.413	-2.940	.005	-.905	-.426	-.156	.143	6.979
	CX2	.339	.096	.475	3.530	.001	.824	.492	.188	.156	6.414
	CX1andCX2andCX3	.089	.034	.338	2.636	.012	-.729	.389	.140	.172	5.825

Source: primary data

APPENDIX XIII: PRIVATE UNIVERSITIES RESPONSES ON LINKAGE STRATEGIES

	CURRICULUM ORIENTATION	Number	Minimum Score	Maximum Score	Mean Score
a	We have a very effective curriculum development and review policy	23	1	5	3.4
b	We always involve the stakeholders in every aspect of curriculum development and review process	23	1	5	3.4
c	Each curriculum in the university is regularly reviewed after every full curriculum cycle	23	1	5	3.5
d	We rarely involve other professional bodies during curriculum development and review process	23	1	5	4.2
	INDUSTRIAL ATTACHMENT FOCUS				
a	We have a very effective industrial attachment policy	23	1	4	3.4
b	We fully adhere to industrial attachment policy	22	1	4	3.4
c	We always involve the stakeholders in every aspect of industrial attachment	23	2	5	3.5
d	We always ensure that every student undertakes industrial attachment in an industry relevant to his or her area of specialisation.	23	2	5	4.2
e	Students rarely adhere to the required duration of industrial attachment	23	2	4	3.5
f	Every student on industrial attachment is very effectively monitored and appropriately assessed.	23	1	5	3.5
	TEACHING AND LEARNING FOCUS				
a	We fully practice student centred teaching and learning methods.	23	1	5	3.3
b	The teaching and learning facilities are frequently evaluated, reviewed and maintenance done.	23	1	5	3.3
c	Every student has adequate access to electronic books and journal articles for library reference	23	1	5	3.5
d	The computer to student ratio is sufficient	23	1	5	3.4
e	Every student has adequate access to Lab equipment	23	1	5	3.4
f	Every student has adequate access to the field equipment	23	1	5	3.9
g	We have highly qualified and experienced academic staff	23	1	5	4.1
h	The university has no state of the art technologically relevant teaching and learning facilities	23	1	5	3.5

Source: primary data

APPENDIX XIII Cont...

i	Not all lecturers are sufficiently qualified with adequate content mastery in their fields	23	1	5	4.1
j	Every lecturer adequately prepares sufficient and relevant curriculum content by benchmarking the emerging issues in the economic sector	23	1	5	4.0
	COLLABORATIVE RESEARCH				
a	We have a very effective and continuously reviewed research policy	23	1	5	4.1
b	There is increasing number of university- economic sector collaborative research undertaken	23	1	5	4.1
c	The collaborative research findings are appropriately and regularly implemented	23	1	5	4.1
d	Post graduate students rarely undertake research relating to economic sector challenges in order to recommend possible solutions	23	2	5	4.2
e	The researchers in the university continuously present research findings to the public sector and encourage implementation of recommendations	23	1	5	3.4
f	university and economic sector collaborative research findings are always considered during curriculum review and content development	23	1	5	3.4
g	There is decreasing number of research publications by our academic staff	23	1	5	3.5

Source: primary data

APPENDIX XIV: PUBLIC UNIVERSITIES RESPONSES ON LINKAGE STRATEGIES

	CURRICULUM ORIENTATION	Number	Minimum Score	Maximum Score	Mean Score
a	We have a very effective curriculum development and review policy	21	1	4	3.3
b	We always involve the stakeholders in every aspect of curriculum development and review process	21	1	4	3.0
c	Each curriculum in the university is regularly reviewed after every full curriculum cycle	21	2	4	3.1
d	We rarely involve other professional bodies during curriculum development and review process	21	1	5	3.4
	INDUSTRIAL ATTACHMENT FOCUS				
a	We have a very effective industrial attachment policy	21	1	4	3.2
b	We fully adhere to industrial attachment policy	21	1	4	3.4
c	We always involve the stakeholders in every aspect of industrial attachment	21	2	5	3.5
d	We always ensure that every student undertakes industrial attachment in an industry relevant to his or her area of specialisation.	21	1	5	3.4
e	Students rarely adhere to the required duration of industrial attachment	21	2	4	3.5
f	Every student on industrial attachment is very effectively monitored and appropriately assessed.	21	1	5	3.2
	TEACHING AND LEARNING FOCUS				
a	We fully practice student centred teaching and learning methods.	21	1	5	3.3
b	The teaching and learning facilities are frequently evaluated, reviewed and maintenance done.	21	1	5	3.3
c	Every student has adequate access to electronic books and journal articles for library reference	21	1	5	3.4
d	The computer to student ratio is sufficient	21	1	5	3.4
e	Every student has adequate access to Lab equipment	21	1	5	3.5
f	Every student has adequate access to the field equipment	21	1	5	3.5
g	We have highly qualified and experienced academic staff	21	1	5	3.5
h	The university has no state of the art technologically relevant teaching and learning facilities	21	1	5	3.6

Source: primary data

APPENDIX XIV Cont...

i	Not all lecturers are sufficiently qualified with adequate content mastery in their fields	21	1	5	3.6
j	Every lecturer adequately prepares sufficient and relevant curriculum content by benchmarking the emerging issues in the economic sector	21	1	5	3.5
	COLLABORATIVE RESEARCH				
a	We have a very effective and continuously reviewed research policy	21	1	5	3.4
b	There is increasing number of university- economic sector collaborative research undertaken	21	1	4	3.2
c	The collaborative research findings are appropriately and regularly implemented	21	1	5	3.3
d	Post graduate students rarely undertake research relating to economic sector challenges in order to recommend possible solutions	21	1	5	3.2
e	The researchers in the university continuously present research findings to the public sector and encourage implementation of recommendations	21	1	4	3.3
f	university and economic sector collaborative research findings are always considered during curriculum review and content development	21	1	4	3.0
g	There is decreasing number of research publications by our academic staff	21	1	5	3.1

Source: primary data

APPENDIX XV: PRIVATE UNIVERSITIES RESPONSES ON COMPETITIVE FORCES

	VALUE	Number	Minimum Score	Maximum Score	Mean Score
a	We seek to continuously improve state of resources in the university	23	1	5	4.1
b	Our resources do not adequately meet the expected standards in the Industry	23	2	5	4.2
c	Our strategic resources are of the highest value compared to those of other universities in Kenya	23	1	5	4.1
	RARENESS				
a	Our recourses are very unique and rare compared to those of other universities in Kenya	23	1	5	4.1
b	There is no much difference between our resources and those of other universities in Kenya	23	1	5	4.1
	INIMITABILITY				
a	Our resources are completely peculiar and therefore eliminates duplication by other universities	23	1	5	4.0
b	Some universities have managed to copy and imitate our strategies	23	1	5	4.1
c	Our strategies and processes are extremely difficult to be imitated by other universities	23	1	5	4.0
	NON-SUBSTITUTABILITY				
a	There are no other alternative choices in the industry that our clients often opt to go for.	23	1	5	4.2
b	Our resources are very prestigious compared to those of other universities in Kenya	23	1	5	4.2
c	Some clients have managed to substitute our resources with other alternatives in other universities in Kenya	23	1	5	4.1
	RESOURCE DEPENDANCY LEVEL				
	Our university does not depend on other institutional resources to develop and implement linkage strategies	23	1	5	4.0
	DYNAMIC CAPABILITIES				
	We have full capability necessary to adapt to industry dynamics to determine and implement linkage strategies	23	1	5	4.2
	INDIVIDUAL AND GROUP BEHAVIOUR				
a	There exists maximum team work, cooperation, responsibility and accountability in developing and implementing linkage strategies	23	1	5	4.1
	BARGAINING POWER OF BUYERS				
a	There exists high bargaining power of clients within education industry in Kenya and this greatly influences our strategies	23	1	5	2.0

Source: *primary data*

b	The bargaining power of stakeholders highly influence the kind of academic programmes offered and general decision making process	23	1	5	2.0
c	The bargaining power of employers in the industry has a lot of influence and impact on our strategies and processes	23	1	5	2.0
	BARGAINING POWER OF SUPPLIERS				
a	The bargaining power of our suppliers is very high and this influences their loyalty towards our university	23	1	5	1.9
b	The bargaining power of sponsors and donors has high influence on our strategies and this influences their loyalty to our university	23	1	5	1.9
	THREAT OF ENTRY				
a	Many universities have ability to enter our market by acquiring and implementing similar strategies as ours	23	1	5	2.0
b	It costs little time and money to enter our market by acquiring and implementing similar linkage strategies as ours.	23	1	5	2.0
	THREAT OF SUBSTITUTION				
a	There is increasing threat from domestic academic institutions possessing alternative substitutes to our linkage strategies	23	1	5	1.9
b	There exists the threat of first entrance into the industry thus making us less competitive	23	1	5	2.0
	RIVALRY AMONG CURRENT COMPETITORS				
a	There exists high level of rivalry over similar programmes and strategies in the education industry	23	1	5	2.0
b	We have every information about strategies developed by our competitors in the industry	23	1	5	2.0
	STAKEHOLDER NORMS AND VALUES				
	The high standards of norms and values demanded by stakeholders is difficult to comply with hence increasing competition	23	1	5	1.9

Source: primary data

APPENDIX XVI: PUBLIC UNIVERSITIES RESPONSES ON COMPETITIVE FORCES

	VALUE	Number	Minimum Score	Maximum Score	Mean Score
a	We seek to continuously improve state of resources in the university	21	1	5	3.3
b	Our resources do not adequately meet the expected standards in the Industry	21	2	5	3.3
c	Our strategic resources are of the highest value compared to those of other universities in Kenya	21	1	5	3.6
	RARENESS				
a	Our recourses are very unique and rare compared to those of other universities in Kenya	21	1	5	3.6
b	There is no much difference between our resources and those of other universities in Kenya	21	1	5	3.3
	INIMITABILITY				
a	Our resources are completely peculiar and therefore eliminates duplication by other universities	21	1	5	3.3
b	Some universities have managed to copy and imitate our strategies	21	1	5	3.1
c	Our strategies and processes are extremely difficult to be imitated by other universities	21	1	5	3.8
	NON-SUBSTITUTABILITY				
a	There are no other alternative choices in the industry that our clients often opt to go for.	21	1	5	3.2
b	Our resources are very prestigious compared to those of other universities in Kenya	21	1	5	3.2
c	Some clients have managed to substitute our resources with other alternatives in other universities in Kenya	21	1	5	3.0
	RESOURCE DEPENDANCY LEVEL	21			
	Our university does not depend on other institutional resources to develop and implement linkage strategies	21	1	5	3.3
	DYNAMIC CAPABILITIES				
	We have full capability necessary to adapt to industry dynamics to determine and implement linkage strategies	21	1	5	3.3
	INDIVIDUAL AND GROUP BEHAVIOUR	21			
	There exists maximum team work, cooperation, responsibility and accountability in developing and implementing linkage strategies	21	1	5	2.7

Source: *primary data*

	BARGAINING POWER OF BUYERS				
a	There exists high bargaining power of clients within education industry in Kenya and this greatly influences our strategies	21	1	5	2.7
b	The bargaining power of stakeholders highly influence the kind of academic programmes offered and general decision making process	21	1	5	2.7
c	The bargaining power of employers in the industry has a lot of influence and impact on our strategies and processes	21	1	5	2.8
	BARGAINING POWER OF SUPPLIERS	21			
a	The bargaining power of our suppliers is very high and this influences their loyalty towards our university	21	1	5	2.8
b	The bargaining power of sponsors and donors has high influence on our strategies and this influences their loyalty to our university	21	1	5	2.8
	THREAT OF ENTRY				
a	Many universities have ability to enter our market by acquiring and implementing similar strategies as ours	21	1	5	2.7
b	It costs little time and money to enter our market by acquiring and implementing similar linkage strategies as ours.	21	1	5	2.7
	THREAT OF SUBSTITUTION				
a	There is increasing threat from domestic academic institutions possessing alternative substitutes to our linkage strategies	21	1	5	2.7
b	There exists the threat of first entrance into the industry thus making us less competitive	21	1	5	2.9
	RIVALRY AMONG CURRENT COMPETITORS				
a	There exists high level of rivalry over similar programmes and strategies in the education industry	21	1	5	2.7
b	We have every information about strategies developed by our competitors in the industry	21	1	5	3.3
	STAKEHOLDER NORMS AND VALUES				
	The high standards of norms and values demanded by stakeholders is difficult to comply with hence increasing competition	21	1	5	3.6

Source: primary data

APPENDIX XVII: PRIVATE UNIVERSITIES RESPONSES ON PERFORMANCE

	Number	Minimum Score	Maximum Score	Mean Score
Net surplus (Ksh)	21	2	5	3.8
Total amount of scholarship awards or grants for students apart from treasury grants to JAB students (Ksh)	21	1	5	3.6
Total number of lecturers	21	1	5	3.5
Total number of students	21	1	5	3.7
Total number of postgraduate students undertaking research	21	1	5	3.8
Total number of research supervisors allocated	21	1	5	3.3
Universities webomatrics ranking in Kenya	21	1	5	3.6
Total number of stake holder conferences held	21	1	5	3.6
Total number of collaborative activities with other institutions held	21	1	5	3.8
total number of industry visits made	21	1	5	3.8
Total number of guest speakers hosted	21	2	5	3.9

Source: *primary data*

APPENDIX XVIII: PUBLIC UNIVERSITIES RESPONSES ON PERFORMANCE

	Number	Minimum Score	Maximum Score	Mean Score
Net surplus (Ksh)	21	2	5	3.4
Total amount of scholarship awards or grants for students apart from treasury grants to JAB students (Ksh)	21	1	5	3.6
Total number of lecturers	21	1	5	3.3
Total number of students	21	1	5	3.5
Total number of postgraduate students undertaking research	21	1	5	3.1
Total number of research supervisors allocated	21	1	5	2.7
Universities webomatrics ranking in Kenya	21	1	5	3.4
Total number of stake holder conferences held	21	1	5	3.4
Total number of collaborative activities with other institutions held	21	1	5	3.4
total number of industry visits made	21	1	5	3.5
Total number of guest speakers hosted	21	2	5	3.4

Source: primary data