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THE EFFECT OF RESOURCE FLUIDITY ON STRATEGIC AGILITY AMONG UNIVERSITIES IN KENYA: CASE OF MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

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ABSTRACT

This study sought to determine the effects of resource fluidity on agility among universities in Kenya. The study targeted 70 officers however only 69 of them responded comprising the University's Deputy Vices Chancellors, heads of department (CODs and HODs), deans and directors of academic programmes, registrars, medical department, procurement department and director of planning. Instruments consisted of structured questionnaires. Data were analysed using descriptive statistics. The results were presented in tables and graphs and discussed. The results from the study indicated that agility was significantly associated with resource fluidity. Holding other resource fluidity variables constant, the odds for high agility category embracing the statement 'the mobility of people and knowledge, institutional job rotation, and management embracing knowledge sharing' were 10.692 times more than those with low agility. Holding other resource fluidity variables constant, the odds for high agility people embracing flexible budgeting and continuous change in changing environment was 3.88 times more than for low agility category. Holding other resource fluidity variables constant, the odds of someone with high agility agreeing with the statement 'the size of the university was being adaptable to the needs that arise' were 8.11 times more than the one with low agility. The outcome of the study was meant to address the concerns of various stakeholders in the higher education sector in the country on strategic agility. Specifically, public and private universities in the country would be enlightened on how they could be able to effectively implement their strategies in the face of numerous challenges facing them and dynamic changes including changing demands from their clients. Managers and leaders need to have the capacity to be flexible, have requisite competencies, and strategic sensitivity. Managers in higher education institutions will benefit on how to be strategically agile in the changing operating environment. For academicians, this study would form the foundation upon which other related and replicated studies can be based on. There is a need to conduct a research study to investigate other factors including organisational culture and collective commitment. Resources available are not sufficient to enable the universities to carry out all its mandate, thus the government needs to provide resources based on needs to the universities.

Key Words: *Resource Fluidity, Strategic Agility, Universities in Kenya*

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INTRODUCTION

Organisation performance is based on business environment which includes activities, customers, suppliers, partners and governments. This environment is influenced by technological innovation, customers with diverse needs and short product life cycle. Globally, market visibility is drastically shortened and increased uncertainty as far as economy is concerned (Swafford, 2006). Strategic management is a process whereby goals and objectives of an organisation are implemented. Since goals and objectives are dynamic, strategic management should be continuously changing. There are many changes globally which includes technological forces which force all sizes of business to engage in strategic management to be competitive.

The strategic management process is composed of multiple processes which include; goal setting, a mission statement, values and objectives, analysis of an organisation's strengths and weaknesses, threats and opportunities. Strategy Formation; involves developing specific actions to be undertaken to meet its goals. On the other hand, strategy implementation is actualising strategy to meet organisational goals. In this study, we concentrated on strategic agility as a sub-process of implementation.

The continued existence of organisations is based on type of strategies they employ that enable them compete in the respective sectors. These strategies are developed and acted on in a manner that the organisational goals are attained. According to (Ofori & Atiogbe, 2012), in most developing countries, universities are careful in identifying the strengths, weaknesses, opportunities, and threats in the environment so as to come up with successful strategies. In the same study, Universities like Ghana and Kwame Nkrumah University of science and technology show more effectiveness in this process. Due to increased competition for student enrolment, some universities opted to introduce courses that appeal to specific groups in their community-adaptation tactic that make the strategy of higher student enrolment work better.

Strategy development in public universities in developing countries is linear (Ofori & Atiogbe, 2012); decision making is top-down involving most higher and middle management only this finding was identified by other authors in the 1980s. Implementation process will be effective if organisational structures are relevant to the strategy. Using the principle that structure follows strategy principle, it is noted that public universities have recrafted their organisational structures to assist the implementation process to some extent. One university in Africa (University of Ghana) has reorganised all the academic units into colleges.

This study, therefore, sought to establish the strategic agility factors considering organisation structure leadership in public universities to be constant and appropriate.

A dynamic business environment requires frequent changes both in the way organisations operate and in organisational structures. Change is an essential determinant in sustaining an organisation's competitive edge. For organisations to survive, they must adopt to changing environment. The old bureaucratic style of management is incompetent in meeting the challenges of the changing environment. Given the political, social, and economic climate of today, some form of change is inevitable and has become a common event for organisations and their stakeholders (Burke, 2002). Therefore, in a dynamic environment, the process of strategic implementation should be agile enough to accommodate current and future challenges.

Agility has been defined as the capability of surviving and prospering in a competitive environment of continuous and unpredictable change by reacting quickly and effectively to changing trends, driven by custom-designed products and services.

Strategic agility is the ability to leverage value-chain-wide resources to *turn on a dime* (changing

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very quickly in a very small space), providing the right product at the right price anywhere. Another definition of strategic agility is learning to make fast turns and being able to transform and renew the organisation without losing momentum (Weill, 2002). Similarly, strategic agility is, the ability to continuously and adequately adjust and adapt in appropriate time the strategic direction in core business in relation to changing circumstances. This may include creating new products and services or creating new business models and innovative ways to create value for the institution.

All managers bear responsibility for successful strategy implementation. All levels of management and personnel must be involved including the lower levels. Managers must have an understanding of the challenges and commitment, otherwise, strategy implementation efforts face major problems. Managers are prone to overlook implementation realities; leading to many strategies fail at the strategy implementation stage. Implementation requires a little more of organisational analysis to help drive the decision and the implementation process.

A critical player in achieving Kenya Vision 2030 is the higher education and tertiary; education is an element of the social pillar. This is because education and training at university level, according to the Government of Republic of Kenya in 1999, is expected to achieve the following: imparting hands-on skills and capacity to perform multiple and specific national and international tasks; creation of dependable and sustainable workforce in form of human resource capital for national growth and development; creation of entrepreneurial capacity for empowering individuals to create self-employment and employment for others; offering opportunities for advancement of learning beyond basic education with strong leaning towards scholarship and research; bridging the gap between theory and practice in various disciplines of education and training among others.

The expansion of university education in Kenya can be understood within the framework of the country's education system and the general demand for education at all levels due to high population growth. Since the mid-1980s there has been a significant expansion of public universities in Kenya in response to higher demand for university education. So far, there are 33 public and more than 30 private universities and colleges in Kenya.

Masinde Muliro University of science and technology (MMUST) since its inception in 2002 as a constituent college of Moi University, has had three (30 strategic plans (2004/05-2008/09, 2009/0-2013/14 and 2015/16-2019/20). Each of these plans had specific objectives which overlapped.

According to the new strategic plan, a number of achievements were realised during the plan period (2009/10-2013/14). These included; increased student enrolment, development of physical infrastructure, establishment of linkages with local and international partners and introduction of new programmes; however the university experienced a number of challenges vis: slow development of physical facilities uncoordinated expansion into low potential areas and over-reliance on outsourcing of teaching facilities poor financial management and declining productivity of staff, inadequate ICT infrastructure, and poor health services for both staff and students and inadequate funding of research activities. These challenges may have been expected during implementation stages, but adequate strategies to mitigate them were not explored, an indicator that there may not have been flexibility and/or foresight in implementation leading to partial attainment of the strategic goals. In the year 2017, a mid-term review of the strategic plan was done, in which a number of strategic issues were edited and revised depending on the available resources and time.

This research study, therefore, sought to establish the influence of resource fluidity on strategic agility, in particular, the strategies of adapting to the potential changes in the environment.

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Statement of the Problem

The universities are now in a continuously changing environment. The customers need certain courses which are market driven, the legal and national policies environment are changing depending on the needs of the national development. In recent past, while admission criteria to university have not changed, students aspiring to join universities already have specific courses they wish to study. The government too has introduced support to students joining private universities, these changes may not have been anticipated by many public universities. Current admission statistics in public universities indicate that a large number of programmes attract relatively fewer students than before. This state of affairs puts university management and Senate to critically rethink on which programmes they should mount which are attractive. Therefore, all these and other conditions require a constantly changing method of management (planning for a change), allocation of resources, strategic sensitivity, collective commitment, and resource fluidity and the overall organisational behaviour which are considered as the agility enablers (Sajdak, 2015). However, most universities in Kenya and in the region have been slow in adapting to change due to lack of knowledge in strategic agility.

Critical factors that prevent institutions from achieving their goals are basically the failure to identify factors including flexibility, speed in responding to changes in the sector. In universities, curricula have remained virtually unchanged despite advancement in technology, changes in job market, preference of the students and others. In 2010, there was a new constitution that was promulgated in Kenya. The constitution gave rise to the freedom to the citizen in all aspects of life essentially enabling them to chart their own career paths among other things. Interestingly, the management of public universities in the country has been in a state of inertia, most have not demonstrated any significant changes alongside these developments owing to inflexible management practices. Their failure to adapt to the ever-changing environment through adopting new management skills is posing a problem begging the question, what are factors affecting the strategic agility of these institutions.

Strategic agility has been shown in most studies as being instrumental in managing changing environments. In most studies, agility strategies have been applied in manufacturing industries (Sajdak, 2015), (Idris, 2013) and the ICT sector (Felipe, Roldán, & Rodríguez, 2017). Majority of those studies identified completely different agilities in companies including organisational culture, creativeness and innovation, and hold agile innovation management. Vassileva (2016), however, discovered inherent tensions between the conservation of existing practices and behaviours, on the one hand, and innovation or transformation methods, on the other hand when considering strategic agilities. However, studies in higher education to see the extent to which these establishments address the ever-changing environment through strategic agility have received less attention. Even more scant attention has been paid to factors touching strategic agility in the universities. Hence, the current study wanted to understand the the key factors influencing strategic agility in public universities in Kenya.

Objective of the Study

The objective of the study was to establish the effect of resource fluidity on strategic agility among universities in Kenya.

Hypotheses

$H_0$1: Resource fluidity has no significant relationship on strategic agility among universities in Kenya.

LITERATURE REVIEW

Theoretical Review

History of agility is related to the period of America recession and the loss of competitiveness in industries of this country during the 1980s (Ramzanian, 2013) and the organisation's agility

word first time used in 1991 by Iaccoca Agency. When there is turbulence in an issue, agility is one of the keys to solving the problem (Nagel & Dove, 1991). Agility is the ability to respond to unexpected changes in the turbulent business environment. Agility is a strong sense, speed, lightness and nimble and needs to creativity and innovation (Gilaninia, Rezvani, Mousavian, & Asli, 2011). Agility is a result of being aware to change, as a whole (identification of opportunities and challenges) in both the internal and the external environment and with proper capabilities in the use of resources to meet these changes at the right time and flexible form relevant that organisation able to run it, is effectively (Braunscheidel, 2009).

Although definitions available of agility are different, all of them emphasise on speed and flexibility as key factors for agility (Azar & Pishdar, 2011). The aim of an agile organisation is to enrich and honouring customers and maintaining employees and survival and market share, that basically have a set of capabilities to respond appropriately to changes occurred in the business environment (Javanmardi, Zanjirchi, Karbasian, & Khaboshabani, 2011)). Organisational agility is organisation's ability to survive and prosper in an environment of constant change and unpredictable (Karami, 2007). According to Doz (2008), strategic agility results over time from the mix of three major meta-capabilities that provide its foundations: strategic sensitivity, resource fluidity, and leadership unity.

Mavengere (2013) presented a strategic agility construct where he expanded the dimensions of strategic agility to include strategic sensitivity, strategic response, and collective capabilities. According to this author, strategic sensitivity is the ability to draw usable data from the environment, convert data into information, interpret and analyse it to acquire knowledge and then detect opportunities and threats in the business environment. A strategic response is the ability of an organisation to reconfigure precisely and quickly its resources and processes to react or pro-act to the demands of the business environment. Collective capabilities include the ability of an organisation to take advantage of the synthesis of its resources, for example, employees, infrastructure or partners, and to derive benefits from working together, which are likely to be greater than the sum of individual benefits from each resource.

The Dynamic Functional Capability Theory

The dynamic functional capability is the ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. It is the capability of an organization to purposefully adapt an organization's resource base. This theory complements the Resource-Based with the addition of available resources which are used to develop the organisation.

Dynamic capabilities attempt to bridge these gaps by adopting a process approach: by acting as a buffer between firm resources and the changing business environment, dynamic resources help a firm adjust its resource combination and thereby maintain the property of the firm's competitive advantage, which otherwise might be quickly eroded. (Teece, 1997) and (Picano, 2015)

Review of Variables (*with Agility)*

Resource Fluidity and agility

Resource fluidity involves the internal capability to reconfigure business systems and redeploy resources speedily, supported businesses processes for operations and resource allocation, people management approaches, mechanisms and incentives for collaboration that make business models and activity system transformation quicker and easier. Strategic agility is negatively impacted when it has imprisoned resources, business system rigidity, management gaps and competency traps (Doz & Kosonen, 2008).

The main drivers for agility results which can be observed overtime are; fluid re-allocation and utilisation of capital resources, removing strategic direction from organisation structure, dissociating results from resource ownership, and assumption-

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based planning/resource allocation process. Other include mobility and rotation of jobs, people and knowledge, values, and management system emphasising knowledge sharing. Capabilities for continuous change and in rapidly changing environment should characterise continuous planning processes, Flexible budgeting (vs. legacy). Organisations strive when there are sufficient financial resources available for their operations and implementation of their strategic plans. Equitable resource allocations and sharing is an activity that improves strategy implantation.

Strategic Agility Metrics

According to Kanani (2016), agility is another way to respond to organisational changing and development factors. In fact, organisational agility is as a new paradigm of engineering organisations and competitive agencies. The aim of an agile organisation is to enrich and honouring customers and maintaining employees and survival and market share, that basically have a set of capabilities to respond appropriately to changes occurred in the business environment. Organisation require to be agile in order for them to penetrate markets for their products, to manage constantly changing environment, and to take advantage of business opportunities. Factors such as accountability, flexibility, competence, quickness, and responsiveness are considered as main indicators of agile organisations, including general output from the organisation, (Gilaninia & Matak, 2012).

Responsiveness

Responsiveness refers to the ability to identify and respond quickly to their changes. These include the following: Feeling, understand and predict changes, immediate reaction to change, Create, and modify and promoting change.

Quickness

Quickness: it is the ability to perform operations in the shortest possible time, including Speed of supply new products to market, Fast delivery and timely products, Speed at the time of operation and finally agility providers are the organisation, staffing, technology and innovation that actually consider as agility causes in an organisation (Shoaybzadeh, 2007).

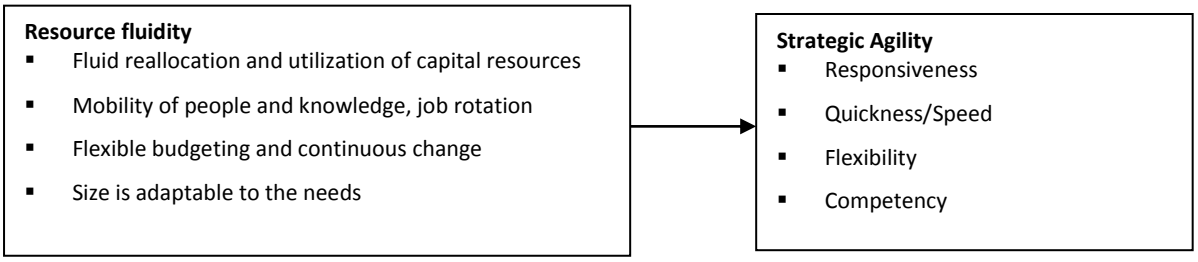
Flexibility

Flexibility: it is the ability to produce and deliver various products and achieving different objectives with the same resources and equipment. Flexibility is considered in the following four areas: product size, product variety, organisation, and individuals employees within the organisation.

Competency

Competency is the provision of a wide range of abilities, the productivity of activities in order to achieve the objectives of the organisation. This includes the following: having a strategic vision, Suitable hardware and software technologies, and product quality. A company's competitiveness derives from its core competencies and core merchandise (the tangible results of core competencies). Core abilities are collective learning within the organisation, particularly the capability to coordinate diverse production skills and integrate streams of technologies (Harvard business review).

Conceptual Framework



Independent Variables **Dependent Variable**

Figure 1: Conceptual Framework

Source: Author (2019)

Empirical Review

A study by Gilaninia, Resvani Mousavian & Asli (2011) defines agility as a strong sense, speed, lightness, nimble, needs to creativity and innovation. According to Doz (2008), strategic sensitivity entails such characteristics as; Open Strategy Process ; co-strategising with multiple stakeholders and experimentation. On the other hand Doz (2008) observed that strategic agility is negatively impacted when resources, are constrained, business system rigidity, ties that bind, management gaps, and competency traps. Moreover, Kanani (2016) observed that agility is one new way to respond to organisational changing and development factors. It is important to note that from the study by (Gilaninia & Matak, 2012) observed that factors such as accountability, flexibility, competence, quickness, and responsiveness are considered as main indicators of agile organisations, including general output from the organisation.

Sifuna (2012) while investigating leadership in Kenyan public universities and the challenges of autonomy and academic freedom found out that there are numerous challenges facing public universities in Kenya today that require innovation and continuous amendment so as to cope effectively. (Gudo, Olel, & Oanda, 2011), in their study on university expansion in Kenya and issues of quality, although focusing on challenges and opportunities, came up with similar findings. Since these changes are inevitable, it is important to study the change process in order to better understand it and determine the extent of influence certain key organisational factors have on its successful implementation within public Universities. This study examined factors that affect agility in public universities.

The research that was done by (Mavengere, 2013) that presented a strategic agility construct and which expanded the dimensions of strategic agility to include strategic sensitivity, strategic response, and collective capabilities. According to this author, strategic sensitivity is the ability to draw usable data from the environment, convert data into information, interpret and analyse it to acquire knowledge and then detect opportunities and threats in the business environment.

METHODOLOGY

A case study design was used to carry out the present study. Since the focus of the study is one organisation, a case study is the most appropriate design. The target population of the study was Masinde Muliro University Deputy Vices Chancellors, heads of department (CODs and HODs), deans and directors of academic programmes, registrars and director of planning. There are thirteen (13) school and directorates, and thirty-five (35) academic departments, there two (2) registrars, one director of research, finance department (3), procurement department (3), university medical department (3) and internal audit department (3), Dean of Students office (2), estates department (2), and three (3) DVCs. This gave a total population of 70 persons. The study used structured questionnaires as data collecting instruments. Closed-ended items were used in the questionnaire. The instrument consisted of questions based on dependent and independent variables.

FINDINGS

Descriptive Statistics: Resource Fluidity

The resource fluidity had four statements (a. the university embraces fluid reallocation and utilisation of capital resources, b) there is the mobility of people and knowledge, institutionalised job rotation and management embraces knowledge sharing, c) there is flexibility budgeting and continuous change in changing environment and d) the size of the university is adaptable to the needs that arise). Table 1 below summarized the descriptive statistics for each of the statements.

Table 1: Independent Variables statistics

Apprev	Variable	Disagree	Neutral	Agree
	Resource Fluidity			
iv_res_fluid_05	The university embraces fluid reallocation and utilization of capital resources	11(15.9)	18(26.1)	40(58)
iv_res_fluid_06	There is the mobility of people and knowledge, institutionalized job rotation and management embracing knowledge sharing	18(26.1)	30(43.5)	21(30.4)
iv_res_fluid_07	There is flexible budgeting and continuous change in changing the environment	12(17.4)	20(29)	37(53.6)
iv_res_fluid_08	The size of the university is adaptable to the needs that arise	12(17.4)	21(30.4)	36(52.2)
ALL	**Resources Fluidity**	**7(10.1)**	**31(44.9)**	**31(44.9)**

On the statement that the university was embracing fluid reallocation and utilisation of capital, 58% agreed and only 15% disagreed. On whether, the university allowed mobility of people and knowledge, institutionalised job rotation and management embracing knowledge, 43.5% agreed and about a quarter disagreed. Flexible budgeting and continuous change in the changing environment, 53% agreed and 17.4% disagreed. Similarly, on the issue of size of the university to adapt to the needs that arise, it was found that 52.2% were in agreement and only 17.4% disagreed. Overall, majority of the respondents were in agreement 31 (44.9%) or neutral 31 (44.9%) on all the resource fluidity statements.

Resource Fluidity

This factor was aimed at establishing the internal capability to reconfigure business systems and redeploy resources rapidly, based on businesses for operations and resource allocation, people management approaches, mechanisms and incentives for collaborations that make the entity models and activity system transformation faster and easier. The results of whether the university embraces fluid reallocation and utilization of capital resources. The university embraces fluid reallocation and utilization of capital resources with 40(58%) of the respondents agreeing.

Dependent Variables

The analysis of the four sub-variable under each of the major dependent variables were presented in Table 2 below. The dependent factors analysed were responsiveness, quickness, flexibility, and competency. The questionnaire covered several closed-ended questions and one open-ended question that required the respondents to give a general opinion about the university.

Majority 43(62.3%) of the respondent reported agreement that the university had adopted the required knowledge, skills and capabilities. However, fewer 4 (5.8%) respondent disagreed and the rest remaining neutral. The competency variable reported fewer (less than 10 respondents) responses on disagreement.

Two way tables and chi-square statistics

All the dependent variables were further aggregated and recoded to have three (3) levels of agility (0=Low), (1=Moderate) and (2=High).

Table 2: Dependent Variable Statistics

Dependent Variable	Low (%)	Moderate (%)	High (%)
Responsiveness	10(14.5)	20(29.0)	39(56.5)
Quickness	13(18.8)	31(44.9)	25(36.2)
Flexibility	10(14.5)	30(43.5)	29(42.0)
Competency	2(2.9)	33(47.8)	34(49.3)
Agility	13(24.6)	27(39.1)	25(36.2)

From Table 2 above it was evident that most respondent report high agility on responsiveness 39(56.5%), and competency 34(49.3%), followed by moderate on quickness 31(44.9), competency 33(47.8%) and flexibility 30(43.5%). Fewer respondent reported low agility in all four factors. Majority of the respondents indicated moderate responsiveness for quickness (44.9%), agility (39.1%) and flexibility (43.5%). For competence only 2.9% indicated low. In all cases low responsiveness had the lowest respondents. In general majority of the respondents indicated moderate and high response for the dependent variables. This implied that the majority of the officers in the university believed that the university agility was moderate to high in all agility variables.

It was noted that in all independent variables the respondents recoded high proportions in either neutral or agreement. This indicated that majority of the respondents believed that university had these characteristics. However, about 25% reported that Leadership Unity was poor. In a paper by Mutie (2014) the results in the above Table on leadership found that 65% agree, 25% disagree while 10% were not sure. The results or those who disagreed were comparable. The findings from this author seemed rather high for those who agreed as compared with findings from the current study. On resource fluidity, Mutie (2014) reported 47% agree, this result was similar to the findings of this study however 40% disagreeing compared to 10% in this study were at variance. It was worth noting that "neutral" was not directly comparable to "not sure". Thus strict comparison was not attainable. On Leadership Unity, Mutie (2014) reports 50% agree, 44% disagree. This is comparable the findings of this study.

Before embarking on the multivariate analysis, we start by carrying out two ways cross-tabulation of the dependent variables with the independent variables. The outcome of these cross-tabulations was the chi-square test which assists in determining the association between the variables. Only variables with signification chi-square results (p-value<0.05) was used in the multinomial analysis.

As part of preliminary analysis, we cross-tabulated the individual dependent variables (responsiveness, quickness, flexibility, and competency) and the independent variable (Resource fluidity).

These were presented in Tables 3.

Table 3: Cross-tabulation of Resource fluidity with Responsiveness

Variable		Responsiveness (%) Low	Moderate	High	Total	
	N	10(14.5)	20(29)	39(56.5)	69(100)	
Resource Fluidity	Disagree	1(10)	3(15)	3(7.7)	7(10.1)	chi2(4) = 14.1025 Pr = 0.007
	Neutral	6(60)	14(70)	11(28.2)	31(44.9)	
	Agree	3(30)	3(15)	25(64.1)	31(44.9)	

Further analysis was done to determine the relationship between resource fluidity and the different response variables using chi-square tests and the strength of association was measured by Kandell's tau-b.

A chi square test indicated that there was a significant association between resource fluidity and responsiveness. (p value=0.007, tau=0.337, SE= 0.105). This was a moderate association, thus independent variable was strongly associated with responsiveness.

Table 4: Cross-tabulation of Resource fluidity with Quickness

Variable		Quickness (%) Low	Moderate	High	Total	
	N	13(18.8)	31(44.9)	25(36.2)	69(100)	
Resource Fluidity	Disagree	3(23.1)	3(9.7)	1(4)	7(10.1)	chi2(4) = 14.2126
	Neutral	8(61.5)	17(54.8)	6(24)	31(44.9)	Pr = 0.007
	Agree	2(15.4)	11(35.5)	18(72)	31(44.9)	

A chi square test (p value=0.007), indicated that there was a significant association between resource fluidity and quickness. The strength of association (tau=0.4047) was seen as strong association.

Table 5: Cross-tabulation of Resource fluidity with Flexibility

Variable		Flexibility (%) Low	Moderate	High	Total	
	Disagree	4(40)	2(6.7)	1(3.4)	7(10.1)	chi2(4) = 25.5050
Resource Fluidity	Neutral	6(60)	18(60)	7(24.1)	31(44.9)	Pr = 0.000
	Agree	0(0)	10(33.3)	21(72.4)	31(44.9)	

A chi square test (p value=0.000), indicated that there was a statistical significant association between resource fluidity and flexibility. The strength of association (tau=0.5701) indicated a fairly strong association.

Table 6: Cross-tabulation of Resource fluidity with Competency

Variable		Competency (%) Low	Moderate	High	Total	
Resource Fluidity	Disagree	1(50)	4(12.1)	2(5.9)	7(10.1)	chi2(4) = 30.1280
	Neutral	1(50)	24(72.7)	6(17.6)	31(44.9)	Pr = 0.000
	Agree	0(0)	5(15.2)	26(76.5)	31(44.9)	

From the above table, resource fluidity had statistically significant effect on competency. The chi square test (p =0.000) indicates that there was a statistically significant relationship between resource fluidity and competency. The association was fairly strong with a tau=0.5666.

From the above tables resource fluidity had statistically significant relationship with all agility variables.

Table 7: Cross-tabulation of Resource fluidity variables with Agility

Variable		Agility Low	Moderate	High	Total	Person
	N	13(18.8)	22(31.9)	34(49.3)	69(100)	
iv_res_fluid_05	Disagree	3(23.1)	4(18.2)	4(11.8)	11(15.9)	chi2(4)=14.0605
	Neutral	6(46.2)	9(40.9)	3(8.8)	18(26.1)	Pr=0.007
	Agree	4(30.8)	9(40.9)	27(79.4)	40(58)	
iv_res_fluid_06	Disagree	8(61.5)	6(27.3)	4(11.8)	18(26.1)	chi2(4)=30.3872
	Neutral	3(23.1)	16(72.7)	11(32.4)	30(43.5)	Pr=0.000
	Agree	2(15.4)	0(0)	19(55.9)	21(30.4)	
iv_res_fluid_07	Disagree	5(38.5)	6(27.3)	1(2.9)	12(17.4)	chi2(4)=14.8865
	Neutral	5(38.5)	7(31.8)	8(23.5)	20(29)	Pr=0.005
	Agree	3(23.1)	9(40.9)	25(73.5)	37(53.6)	
iv_res_fluid_08	Disagree	5(38.5)	6(27.3)	1(2.9)	12(17.4)	chi2(4)=19.3019
	Neutral	6(46.2)	8(36.4)	7(20.6)	21(30.4)	Pr=0.001
	Agree	2(15.4)	8(36.4)	26(76.5)	36(52.2)	

NB

iv_res_fluid_05 *The university embraces fluid reallocation and utilization of capital resources*

iv_res_fluid_06 *There is the mobility of people and knowledge, institutionalized job rotation*

iv_res_fluid_07 *There is flexible budgeting and continuous change in changing the environment*

iv_res_fluid_08 *The size of the university is adaptable to the needs that arise.*

Further analysis was done to determine the association between each of the fluidity variables with agility. Using the chi square test; The study found that there was a statistically significant relationship between how the university embrace fluid reallocation of capital resources with agility (p value= 0.007); how the mobility of people and knowledge, institutional job rotation with agility (p value= 0.000); how flexible budgeting and continuous change in changing the environment with agility (p value=0.005) ; and the size of the university and its adaptability to the needs that arise (p value=0.001). We conclude all the independent variables of resource fluidity have significant effects on agility.

Overall, most of the respondents reported that agility with in the university was high (49.3%). followed by moderate (31.9%). Considering each of the statements, it is noted that there strong association between high agility and agreement on the part of resource fluidity.

From the above cross tabulation, it is evident that all the independent statements of resource fluidity were significantly associated with agility. Thus all the four statements were included in the multinomial logistic model.

Table 8: Summary Cross-tabulation of Resource fluidity with Agility

		Agility				
		Low	Moderate	High	Total	
Variable	N	13(18.8)	22(31.9)	34(49.3)	69(100)	
Resource Fluidity	Disagree	4(30.8)	2(9.1)	1(2.9)	7(10.1)	chi2(4) = 31.8378
	Neutral	9(69.2)	15(68.2)	7(20.6)	31(44.9)	Pr = 0.000
	Agree	0(0)	5(22.7)	26(76.5)	31(44.9)	

All the independent statements on resource fluidity recorded a significant relationship with the dependent variable (agility). This indicated that independent variable has an effect on the strategic agility at the university.

For resource fluidity and agility, majority of the respondents who reported neutral 15(68.2%) also stated that the university was moderately agile, with 2(9.1%), and 5(22.7%) disagreed, and agreed respectively. Only independent variables that were significantly associated (<0.05) with the respective agility variables were used in the multinomial analysis.

Multinomial Logistic Regression Analysis

Further analysis was carried out to determine if there was any relationship between and among independent variables and the agility variables. The results were interpreted using the adjusted Odds ratios. Odds ratios less than one indicate negative association and that greater one indicates a positive association with the outcome variable (Agility)

The reference category for all dependent variables is Low=0, and for the independent variables is disagree=0. All the models fitted indicated a strong association between the independent variables and the dependent variable.

Table 9: Logistic Model, Dependent-Agility

Agility	RRR	Std. Err.	z	P>z	[95% Conf. Interval]	
Low	(base outcome)					
Moderate						
iv_resfluid3_05	1.174329	.5977952	0.32	0.752	.4329957	3.184902
iv_resfluid3_06	2.342605	1.499317	1.33	0.184	.6682082	8.212706
iv_resfluid3_07	1.779131	.9163729	1.12	0.263	.6483085	4.882411
iv_resfluid3_08	2.257695	1.249435	1.47	0.141	.7631327	6.67929
_cons	.2213494	.2580883	-1.29	0.196	.0225215	2.175503
High						
iv_resfluid3_05	1.596186	1.015001	0.74	0.462	.4589992	5.550795
iv_resfluid3_06	10.6929	8.696885	2.91	0.004	2.171628	52.65087
iv_resfluid3_07	3.882008	2.550134	2.06	0.039	1.071254	14.06761
iv_resfluid3_08	8.111122	5.660406	3.00	0.003	2.065683	31.84917
_cons	.0023705	.0038599	-3.71	0.000	.0000975	.0576544

Log likelihood = -47.550488, LR chi2(8)= 46.72, Pseudo R2=0.3294, P-value=0.0000

A multinomial logistic model was fitted to analyse how resource fluidity affects agility. The model obtained was adequate (p value=0.000). Agility was measured using three categories; low, moderate and high. Low category was used as the base outcome. Resource fluidity variables were used as the independent variables. Two models were fitted; the first one compared moderate agility with low agility while the second one compared high agility with low agility. The variables for the model that compared moderate with low category were all insignificant (p values >0.05). For the model that compared high with low agility all the variables were significant except iv_res_05, (p value 0.462).

Holding other resource fluidity variables constant, the odds for high agility category embracing the statement 'the mobility of people and knowledge, institutional job rotation, and management embracing knowledge sharing' were 10.692 times more than those with low agility.

Holding other resource fluidity variables constant, the odds for high agility people embracing flexible budgeting and continuous change in changing environment was 3.88 times more than for low agility category.

Holding other resource fluidity variables constant, the odds of someone with high agility agreeing with the statement'the size of the university being adaptable to the needs that arise' are 8.11 times more than the one with low agility.

A research paper by Kibicho (2015) used a linear regression model to determine factors associated with successful strategy implementation. He found that Managerial competence, resource strength, corporate culture and innovations were predictors.

The research study had come up with some results which supported the proposed hypothesis.

There were four independent statements on resource fluidity that were being investigated as possible factors that may affect agility in an organisation. The site of the research was Mainde Muliro University of Science and Technology.

Results for the test of hypothesis

H01: Resource fluidity has no significant relationship on strategic agility among universities in Kenya.

Resource fluidity statements were strongly associated with the agility in the multinomial logistic model.

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CONCLUSION

The study of factor associated with agility in universities in Kenya was studied. It is important to note that the factors identified were; resource fluidity, collective commitment, and leadership unity play important roles in ensuring that university remain afloat by adopting agility strategies.

RECOMMENDATIONS

University leaders and managers in most cases do not have post appointment training nor knowledge in leadership and strategic management. Once appointed, they start learning on the job, which cost time and money before they understand what is required of them to make strategic decisions in order to move the institutions to the next level. They lack requisite knowledge in strategic thinking and leadership skills that can assist them to manage human capital and steer the university to achieve its objectives.

The study also found out that resource fluidity may influence agility was strongly associated with agility in the multinomial. It is thus recommended that leaders and managers should be retrained in new approaches to enhancing the strategies of resource fluidity. The managers and leaders should attend seminars and conferences where such approaches are presented. In these seminars and conferences, they can learn new initiatives on how to improve productivity, improve staff interaction and enhance positive institutional culture.

Future Study

There is a need to study other factors including an institutional culture that may influence agility using a larger sample size to determine if it remains insignificant.

REFERENCES

Azar, A., & Pishdar, M. (2011). *Identify and measure of organizational agility indexes (case study), researches of management, fourth year.*

Braunscheidel, M. J. (2009). The Organizational Antecedents of a Firm's Supply Chain Agility for Risk Mitigation and Response. *Journal of Operations Management, 27*(2), 119-140.

Brinkschroder, N. (2014). Strategy Implementation: Key Factors, Challenges and Solutions. Enschede, Netherlands: University of Twente, Faculty of Management and Governance. .

Burke, W. W. (2002). *Organisation Change: Theory and Practice.* Thousand Oaks: California Sage Publication.

Byars, L. L. (1991). *Strategic management: formulation and implementation: concepts and cases.* New York, NY: HarperCollins Publishers.

Cronbach, L. J., & Azuma, H. (1962). Internal-consistency reliability formulas applied to randomly sampled single-factor tests: An empirical comparison. Educational and Psychological Measurement. *22*, 645 - 665.

Deephouse, D. L. (1999). To be different, or to be the same? it's a Question (and theory) of Strategic Balance. *Strategic Management Journal, 20*(2), 147-166.

Doz, Y., & Kosonen, M. (2008). *Fast Strategy.* Harlow: Wharton School Publishing.

Felipe, C. M., Roldán, J. L., & Rodríguez, A. L. (2017, December). Impact of Organisational Culture Values on Organisational Agility. *Sustainability, 9*(2354; doi:10.3390/su9122354), 1-23.

Gall, M. D., & Borg, W. R. (1989). *Educational Research; An Introduction, 8th Edition.* USA: Oregon University.

Gilaninia, S., & Matak, A. (2012). Examination of Relationship between Intellectual Capital and the Small Business Enterprises Performance in Guilan Province. *Journal of Basic and Applied Scientific Research, 2*(3), 2291-2297.

Gilaninia, S., Rezvani, M., Mousavian, S. J., & Asli, S. A. (2011, December). Optimizing Production Planning and Environmental Assessment of Conformity with Inventory Management Methods in Iran. *Journal of Management and Strategy, 2*(4).

Gudo, C., Olel, M., & Oanda, I. (2011, Novemeber). University Expansion in Kenya and Issues of Quality Education: Challenges and Opportunities. *International Journal of Business and Social Science, 2*(20), 203 - 214.

Hrebiniak, L. G. (2005). *Making Strategy Work.* New Jersey 07458: Pearson Education, Inc. Publishing as Prentice Hall Upper Saddle River.

Idris, W. M.-R. (2013). Examining the Impact of Strategic Learning on Strategic Agility. *Journal of Management and Strategy, 4*(2), 70-77.

Israel, G. D. (1992). Determining Sample Size. *Agricultural Education and Communication Department, University of Florida, IFAS Extension, PEOD6*, (Reviewed 2013).

Javanmardi, M., Zanjirchi, S., Karbasian, M., & Khaboshabani, A. (2011). Identify factors influencing the increase in the level of organizational agility with RBF neural network approach to improve passive defense. *Passive Defense Science and Technology, Second Year, 2*, 71-82.

Kanani, N. (2016). Analysis of factors affecting organisational agility. *Singaporean Journal of Business Economics and Management Studies, 5*(2), 102-108.

Karami, A. (2007). *Strategy formulation in entrepreneurial firms.* England: Ashgate: Aldershot, .

Kibicho, P. M. (2015, April). Determinants of Strategy Implementation Success in Insuarance Industry: A Survey of Insurance Companies in Kenya. *International Journal of Business and Social Science, 6*(4), 74-91.

Kombo, D., & Tromp, D. A. (2006). *Proposal and Thesis Writing.* Nairobi: Pauline Publications.

Mango, D. R. (2014). Determinants of Successful Strategy Implementation: A survey of Selected Public Schools in South Africa. *International Journal of Business and Management Innovation , 3*(1), 41-46.

Mavengere, N. (2013). Role of information systems for strategic agility in supply chain setting: telecommunication industry study. *The Electronic Journal information systems Evaluation, 16*(4).

Mugenda, O., & Mugenda, A. (2009). *Research Methods: Quantitative and Qualitative Approaches (Revised Ed).* Nairobi: African Centre for Technology Studies (ACTS) Press.

Mutie, J. M. (2014). Determinants of Successful Strategic Plan Implementation: Lessons from the Church Commissioners for Kenya. *European Journal of Business and Management, 6*(33), 64-71.

Nafei, W. A. (2016). Organisational Agility: The Key to Organisational Success. *International Journal of Business and Management*, 296-309.

Nagel, R., & Dove, R. (1991). “21st Century Manufacturing Enterprise Strategy: An Industry,”. In I. Institute. (Ed.), *Led View of Agile Manufacturing* (Vol. I and II). Philadelphia: Iacocca Institute, Lehigh University.

Ngechu, M. (2004). *Understanding the research process and methods. An introduction to research methods.* Nairobi: Acts Press.

Ofori, D., & Atiogbe, E. (2012). Strategic Planning in Public Universities: A Developing Country Perspective. *Journal of Management and Strategy, www.sciedu.ca/jms, 3*(1).

Pearce, J. A., & Robinson, R. B. (2009). *Strategic Management: Formulation, Implementation and Control. (11th ed).* Boston: Irwin McGraw Hill.

Picano, G. (2015). *A normative Theory of Dynamic Capabilities: Connecting Strategy, Know-how and Competition.* Harvard Business School.

Ramzanian, M. R. (2013). Evaluation of organisational agility in Sport and Youth offices of Provinces. *Sports Management Studies*, 185-204.

Sajdak, M. (2015). Compilation of operational and Strategic Agility for ensuring the highest efficiency of Company operations. Economics and Management. *7*(2), 20-25.

Shanghverzy, J. N. (2003). *Statistics for people in statistics (2nd Edition). Harverd Business Review services.* USA: Sage Publication Shostack GL. (1984).

Sharifi, H., & Zhang, Z. (2000). A method for acheiving Agility in Manufucturing Organizations. *International Journal of Operations Reseach & Production Management, 20*(4).

Sherehiy, B. K. (2007). A review of enterprise agility: COncepts, framework ans attributes. *International Journal of Industrial Ergonomics, 37*, 445-460.

Shoaybzadeh, M. (2007). Agile Organization: Why and How? *Management Message, 117*.

Sifuna, D. (2012). Leadership in Kenyan Public Universities and the Challenges of Autonomy and Academic Freedom: An Overview of Trends Since Independence. *JHEA/RESA, 10*(1), 121 - 137.

Swafford, P. M. (2006). A framework for assessing value chain agility. *International Journal of Operations & Production Management, 26*(2), 118-140.

Teece, J. P. (1997). Dynamic Capabilities and Strategic Management. *Strategic Managment Journal, 18*(7), 509-533.

Thompson, A. A., & Strickland, A. J. (2001). *Strategic management concepts and cases.* (12th, Ed.) Boston, Massachuset: McGraw-Hill/Irvin.

Vassileva, B. (2016). Innovation Mangaement and Agile Strategies for Change. *Managing Knowledge and Learning, Joint International Conference.* Timisaora -Romania: Technology, Innovation and Industrial Management.

Weill, P. S. (2002). *CISR Working Paper No. 329, IT Infrastructure for Strategic Agility. Massachusetts:.* Massachusetts Institute of Technology Cambridge.

Yin, R. (1994). *Case Study Research Design and Methods: Applied Social Research and Methods Series. Second edn. .* Thousand Oaks, CA: Sage Publications Inc.

Zhang, Z., & Sharifi, H. (2000). A methodology for acheiving agility in manufacturing organisations. *International Journal of Operations & Production, 20*(4), 496-512.