

**GOVERNANCE PRACTICES BY UNIVERSITY MANAGEMENT  
INFLUENCING INFRASTRUCTURE DEVELOPMENT IN PUBLIC  
UNIVERSITIES IN CENTRAL KENYA**

**Tabby Wothaya Gichohi**

**A Research Project Submitted in Partial Fulfillment for the  
Requirements of the Award of the Degree of Master of Education in  
Corporate Governance  
University of Nairobi**

**2016**

## **DECLARATION**

This research project is my original work and has not been presented for a degree in any other university

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Tabby Wothaya Gichohi

Regd no: E55/72662/2014

This research project has been submitted for examination with my approval as the university supervisor

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Dr. Jeremiah Kalai

Senior lecturer and chairman

Department of Educational Administration and Planning

University of Nairobi

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Edward Kanori

Lecturer

Department of Educational Administration and Planning

University of Nairobi

## **DEDICATION**

The project report is dedicated to my parents, my brothers and my sister. You gave me immense moral support in the course of my studies

## **ACKNOWLEDGEMENTS**

I acknowledge support from my supervisors Dr. Jeremiah Kalai and Mr. Edward Kanori for their support and positive encouragement while undertaking this research work. Support from my fellow classmates, the librarians, my colleagues at work and data enumerators is highly acknowledged. All the respondents are highly acknowledged for their willing participation.

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## **ABBREVIATIONS AND ACRONYMS**

<b>GoK</b>	Government of Kenya
<b>IFC</b>	International Finance Corporation
<b>JKUAT</b>	Jomo Kenyatta University of Agriculture and
<b>KU</b>	Kenyatta University
<b>KUCCPS</b>	Kenya University and Colleges Central Placement Services
<b>MoE</b>	Ministry of Education
<b>NACOSTI</b>	National Commission of Science, Research and Innovation Technology
<b>PWHC</b>	Price Waterhouse Coopers
<b>SPSS</b>	Statistical Package for Social Sciences
<b>UNESCO</b>	United Nations Educational Scientific and Cultural Organization
<b>UoN</b>	University of Nairobi
<b>USA</b>	United States of America

## **ABSTRACT**

The purpose of the study was to investigate the governance practices by university management that influences infrastructure development in public universities in central Kenya. The study was guided by the following research objectives: adequacy of funds, policies and regulations, donor support and to examine how the universities' internal resources influence development of infrastructure. The study used the social cohesion theory. The study employed a descriptive survey design. The target population of the study was the six public universities in the central region of the republic of Kenya which are Kenyatta University, Jomo Kenyatta University of Agriculture and Technology, Dedan Kimathi University, Karatina University, Murang'a University of Technology and Kirinyaga University. The census sampling method was used for sampling the vice chancellors and deputy vice chancellors of finance. Quantitative and qualitative data analysis methods were used. The study found out that: most of the respondents did not consider their institutions as having adequate funds to meet the infrastructure requirements though they had policies for infrastructural development. Most of the institutions had accessed donor support for infrastructure provision and they engaged in enterprise. The study recommends that: the management boards and university councils should innovate and employ public private partnerships as a medium of infrastructure financing. Universities should provide the requisite infrastructure before starting any new academic program. They should also ensure that they collaborate with development partners from other jurisdictions to enhance the synergy between industry and academia. Alternative revenues from the core mandates of the universities should be sought out by putting in place vibrant enterprise management programs to ensure that the businesses run by the institutions are modeled in the required manner and profits maximization should be the driving factor behind the businesses setup. This may ensure provision of optimal resources for infrastructure provision. The study suggests that research on corporate governance practices affecting infrastructure development in public secondary schools should be carried out to find out if similar situations prevail.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the study

Sound infrastructure provision is a global challenge in public universities. This is attributed to the failure to match budgetary allocation to the demands in terms of uptake of education opportunities (Burnside, 2012). In many situations, the public universities are left on their own to innovate and find out ways and means of generating resources which can be used for the expansion of the facilities. This comes along with added costs in terms of the value accruing from the academic programs undertaken and the risk of the target clients not being able to afford the courses offered (Brooks, 2011).

In the United States of America, funding for university infrastructural provisions is provided for by government. This ensures that the federal units have adequate resources to fund the expansion activities in their individual institutions (IFC, 2012). It seems to it that there is planned expansion budgeted for by the exchequer. The arrangement brings forth the element of clarity and focus in terms of long term projections envisaged to ensure sustainable growth by way of budgetary allocations (Jaschick, 2013).

In Brazil, budgetary shortfalls have compounded a bad problem by virtue of the fact that the universities have to seek financing on their own means from donors and other benefactors (Braxton and Hirschy 2012). This occasions the risk of failure to ensure growth due to uncertainty of the funding provisions. It causes the public universities to stagnate and fail to realize the envisaged objectives as pertains to long term growth (Hazelkon, 2012).

In most of the European Union countries, provisions for the financing of public universities infrastructure demands have been put in place. The Jurisdictions provide funds for individual university infrastructure growth plans emanating from the proposals made by them (IFC, 2012). This ensures that the budgetary process takes into account the need to finance public universities infrastructure expansion plans from the treasuries. It thus removes ambiguity from the growth plans and ensures structured development provisions (Brooks, 2011).

Africa has a low level of infrastructure development due to over reliance on donor support. This makes the financing of infrastructure growth in virtually all spheres to be highly constrained (Kidombo, 2012).It occasions the risk of all plans being dependent on provisions made by donors in their annual support plans. This constrains the opportunity of having a free hand in making individual state budgetary appropriations without pegging donor support to bridge the budgetary deficits (Oanda,2010).

The withdrawal of many financing facilities occasioned by the structural adjustment programs exposed many countries to the risk of highly constrained growth (Steinner, 2012). This had a direct impact on the public universities which were highly dependent on donor support programs for their infrastructure expansion plans. The public universities in Africa were thus forced to innovate and develop individual mechanisms for sustainable infrastructure provisions (Otieno, 2012).

In Kenya the public universities and higher education institutions are regulated by statute as provided for in the commission of university education act (Mbwagana, 2012). The act details the requisites for establishment of

institutions, accreditation and facilities requirements. The growth of the public universities sector has been given much impetus by the enactment of the act. This has seen to it that the previous arrangement whereby growth was limited to boarding capacity abolished and innovative provisions for students' accommodation introduced (Owino, 2013).

Adequacy of funds has been a great limiting factor in the growth of public universities. Overreliance on government for financing has highly constrained most of the public universities (Nyachoti, 2013). The failure to have internal resources which can spur increased growth has been a factor highly limiting the capacity to provide infrastructure within the institutions. Situations whereby the universities have the bulk of their budgetary appropriations going to operational expenditure and related recurrent costs have heavily impaired their growth plans (Magutu, Mbeche, Nyaoga, Ongeru and Ombati, 2010).

The policy provisions in place at times limit the public universities infrastructure provision aspirations (MacDonald, 2013). This is attributed to the fact that in some instances the universities are derailed by the tedious process of having their plans approved before undertaking the expansion activities. The situation of long and protracted public procurement process equally negates the import of expeditious expansion. This holds down the public institutions and makes them fail to achieve the intended growth (Oanda & Jowi, 2013).

Situations whereby donor support facilities have been misappropriated have occasioned the risk of public universities failing to attract sustained support (Mbwesa, 2012). Documented cases of corruption within the public universities have exposed them to failure to win the requisite good will warranting sustained support. Failure to conduct appropriate feasibility surveys

before engaging in commercial enterprises has also exposed the public universities to the risk of mismanaging the internal income generating activities. This has caused the income generating activities to be a source of pain other than gain to the institutions (Aduda, 2011).

The growth of the public universities has been sustained. This is attributed to the increased numbers of learners benefiting from the advent of the free primary education and the highly subsidized secondary school education (Aduda, 2014). On the contrary, the infrastructure provisions in place have not been matched with the growth of the student numbers. Some of the universities have been forced to lease commercial buildings to take care of the student populations and instances of lack of basic furniture suffice in some institutions. It's against this background that the study sought to find out the governance practices by university management influencing the growth of infrastructure in public universities in central region of the republic of Kenya (Sewe, 2014). This was with a view of confirming the extent to which the governance practices identified with the government policy which calls for infrastructure provision before setting up of the academic programmes.

## **1.2 Statement of the problem**

The growth of the public universities in the republic of Kenya has been exponential. This can be partly attributed to increased student numbers owing to the population growth and the policy in place for free primary education and subsidized secondary school education (Mboroki, 2012). Despite the growth in student numbers, the investments in infrastructure provision have not been in tandem with the student population growth (Wangenge and Ouma, 2008).

The inherent systemic failures of budgetary shortfalls occasioned to the exchequer can be traced to the dearth of financing in public universities. This highly limits them from executing their growth plans owing to having to rely on the treasury for budgetary provision which mostly goes towards recurrent expenditure (Aguti, 2012). Situations whereby the public universities have been highly deficient in meeting infrastructure demands abound. The accommodation of students which is a function of the institutions has gradually been relegated to the periphery occasioning the need to source it from hostels outside the institutions (Gakuu, 2012). The need to find out the governance practices by university management influencing the development of infrastructure in public universities cannot thus be underscored.

### **1.3 Purpose of the study**

The purpose of the study was to investigate the governance practices by university management that influence infrastructure development in public universities in central Kenya.

### **1.4 Research objectives**

This study was guided by the following research objectives:

- a) To determine how adequacy of funds influences infrastructure development in public universities in central Kenya
- b) To establish how policies and regulations influence infrastructure development in public universities in central Kenya
- c) To determine how donor support influences infrastructure development in public Universities in central Kenya
- d) To examine how the universities' internal resources influence development of infrastructure in public universities in central Kenya.



## **1.5 Research questions**

The following research questions guided the study:

- a) How does adequacy of funds influence infrastructure development in public universities in central Kenya?
- b) How do policies and regulations influence infrastructure development in public universities in central Kenya?
- c) To what extent does donor support influence infrastructure development in public Universities in central Kenya?
- d) How do the universities' internal resources influence development of infrastructure in public universities in central Kenya?

## **1.6 Significance of the study**

This study may be of great benefit to University Councils and the membership of the Senate and administration charged with the mandate of ensuring infrastructural development. This is because it may give insights on critical aspects pertaining infrastructural facilities development for the good of the institutions. It may spur improved infrastructural facilities development in the universities.

Formulation of policy by government may equally be positively impacted on by the findings accrued from the study. This is in the wake of having focus on the spectrum of higher education sector infrastructural facility development via non-traditional financing approaches. This may increase innovativeness on the part of the institutions and enhance their infrastructural capacities.

Infrastructural facilities development is an evolving area. This is with regards to emerging financing programs for infrastructural development in the public universities. The study may thus contribute to the body of knowledge in

terms of generation of additional information for the benefit of future researchers.

### **1.7 Limitations of the study**

The study encountered the challenge of respondents' attitudes. This was attributed to the fact that the respondents had varied personal dispositions that the study had no control over. The challenge was surmounted by way explaining to the respondents the essence of providing honest answers to the best of their ability thus getting reliable responses.

Public universities have the challenge of high levels of confidentiality with regard to disclosure of information. This affected the access to secondary data. The researcher overcame the challenge by way of producing an introductory letter issued by the college as a measure of assuring access to institutional records.

The circumstances pertinent to the public universities in the central region of the country may not apply to the other regions. This thus made generalizations of the study findings a challenge to the research. The study overcame the challenge by seeking to make comparisons with previously documented works pertinent to infrastructural facilities development.

### **1.8 Delimitations of the study**

The study was conducted in the public universities within the central region of the country. It sought to find out the governance practices by university management affecting infrastructural facilities development in the institutions. The target respondents were members of the administration, finance and university council. This was because they were considered to have insights as regards the on goings within the institutions on aspects of policy and financing

of programs thus well equipped to give information on infrastructural facilities development.

### **1.9 Basic assumptions of the study**

The study was premised on the following assumptions:

- i) The respondents would give honest and truthful information to enhance the reliability of the study findings.
- ii) The governance practices by university management influence the infrastructure development in public universities

### 1.10 Definition of key terms

Donor support refers to the benevolence from local and international benefactors willing to provide assistance for institutional growth

Infrastructure refers to the basic physical and organizational structures and facilities needed for the operation of a university such as physical facilities, lecture theatres, libraries, computer laboratories and science laboratories

Policies and regulations refers to the guidelines in place to ensure that the universities develop and are governed in a self sustaining manner within the confines of the law

Public university refers to an institution of higher learning conferring graduate and post graduate education but drawing and relying on the public coffers.

Resources refers to the monetary provisions and human capital that public universities' can use in the development of infrastructure

University Councils refer to the organ of administration and governance charged with the responsibility of decision making as pertains to policy direction in the institutions.

### **1.11 Organization of the study**

Chapter one entails the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, assumptions of the study and definition of significant terms. Chapter two encompasses the literature review which has the empirical literature review emanating from the objectives, the summary and gaps to be filled by the study, the theoretical and conceptual frameworks.

Chapter three has the research design, target population, sample size and sampling techniques, research instruments, validity of instruments, reliability of instruments, data collection procedures, data analysis techniques and ethical considerations. Chapter four has the data analysis, interpretation and presentation of findings. Chapter five has the summary of findings, conclusions and recommendations.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1 Introduction**

This chapter presents the related literature reviewed on the factors influencing the development of infrastructure in public universities. The literature is based on the research objectives and it entailed the concept of infrastructure development in public universities, adequacy of funds on infrastructure development, government policies and regulations on infrastructure development and donor support influence on infrastructure development in public universities. It has a summary and gaps to be filled, the conceptual and theoretical frameworks

#### **2.2 Concept of infrastructure development in public universities**

Provision of infrastructure is a requisite for sound actualization of academic programs carried out in universities. The infrastructure demands of the different institutions vary according to the pertinent demands of the academic programs offered (PWHC, 2012). It is incumbent on the institutions to provide infrastructure as per the different demands within the institutions to meet their obligations to students and other stakeholders (Zarantonello, 2012). The array of programs on offer demands that the institutions make provisions for infrastructural development. Basic needs like office blocks for administration purposes, lecture halls, libraries and hostels are a mandatory requisite for the institutions of learning (Todorovic, 2012). The need to ensure that value for money accruing from the programs paid for underpins the essence of making infrastructure development within the universities (Steinner, 2012).

Public universities globally however have the challenge of falling under regulatory scrutiny and policy demands before getting to have the right infrastructure in place (Zagnolli, 2011). This is mainly motivated by the fact that they are funded from the state coffers and thus wholly reliant on public resources for infrastructure financing. This makes the decision making processes as regards expenditure plans to be influenced by the availability of funds accruing from the budgetary appropriations (Walaba, 2010).

### **2.3 Adequacy of funds on infrastructure development**

Growth in student population had a similar multiplier effect on the revenues generated by the universities. This occasioned the benefits of having increased capital to fund the rising demand accruing from the increased population (Steinner, 2012). In some universities in Asia, autonomy was granted as a prelude to registration thus independence in the use of revenues generated. This assured the institutions enhanced capacity with regard to infrastructure growth and development (PWHC, 2012).

Africa has the undoing of the pain of budgetary deficits owing to leakages in the tax collection and administration procedures. This exposes the public institutions of higher learning relying on government support to uncertainty in the allocations made to them by exchequer (Oanda & Jowi, 2013). The prevailing situation contributes to slowed development of the infrastructure provisions appropriated for in the institutions of learning owing to limited financing. This has negative implications on the growth of the physical infrastructure provisions (Mbwesa, 2012).

Infrastructure provisions require heavy capital outlay in the name of financing requirements. Many institutions in the higher education segment have the unfortunate instance of not being able to effectively access the requisite finances (Mutiga, 2013). This deters the development plans and constrains acquisition of physical infrastructure. Studies carried out in the USA showed that universities that had councils which were adept to the demands of meeting sustainable financing obligations readily grew their infrastructure as opposed to those which were not (Zwick & Sklar, 2012).

Many public universities in Kenya rely solely on government grants in financing their infrastructure requirements (Kidombo, 2012). The government grants are mainly used to fund recurrent expenditure as opposed to development of physical infrastructure and related requirements. This constrains the institutions owing to impaired growth accruing from the foregoing position (Mbwagana, 2012).

The need to have universities innovating and seeking out non-conventional financing means is a challenge to many public institutions. It is incumbent on the institutions to seek out financing arrangements which are flexible enough to warrant sustainable growth in cost effective manner (Oanda & Jowi, 2013). Public – private partnerships like in the build-own and operate arrangements can be exploited for long term physical facilities provision to ensure sustainable development without heavy capital expenditure. The study sought to find out the extent to which adequacy of funds affects the development of physical infrastructure in the study area (Nyachoti, 2013).

## **2.4 Government policies and regulations on infrastructure development**

The protocols defining global developmental issues highly influence the levels of policy in all spheres. Higher education is an area which has been largely left to the market forces which determine growth and development especially since the advent of the entry of many private players in the sector (Burnside, 2012). The stiff competition between the private sector and public sector in higher education provision makes governments to relegate the financing of public institutions infrastructure to the periphery. It thus calls for the individual institutions to innovate and come up with sustainable programs which can be effectively implemented to assure growth (Braxton, and Hirschy, 2012).

The national financing demands for the higher education sector in different jurisdictions motivate the policy framework governing the sectors (Hazelkon, 2012). In the event of provisions to allow for budgetary allocations within a jurisdiction the financing of infrastructure is thus pegged on the availability of monetary resources. The capacity to build local abilities with regard to financing thus is a key imperative in the resources availment for the physical infrastructure in public institutions (Brooks, 2011).

Africa was hard hit by the implications of the structural adjustment programs occasioned by the Breton Woods institutions (Gakuu, 2012). Withdrawal of programs which ensured the requisite budgetary support was availed to the governments stalled many development programs. This severely affected the higher education sector with many countries starting cost sharing programs in the institutions. This had negative implications on financing infrastructure provisions (IFC, 2012).



The Commission for University Education is charged with the responsibility of ensuring growth and development of infrastructure in universities in Kenya (Oanda & Jowi, 2013). The authority to give charters and provisions for running the institutions is equally conferred to the council. Infrastructure provision is a key requisite for allowance to operate universities (Mutiga, 2013). The inspection of facilities in terms of wellness and the ability to meet the requisite provisions is a great underlying factor.

Studies carried out in Kenya showed that social development was a factor which had given impetus to the growth of the higher education sector. The growing middle class which had no inhibitions with regard to taking up module 2 programs in the public universities had greatly raised the revenue levels (Mboroki, 2012). This had positively affected the capacity of the institutions to access funds to expand their physical infrastructure accruing from the revenues generated. The study sought to find out how the adequacy of funds influences development of physical facilities in public universities in the study area (Nyachoti, 2013).

## **2.5 Donor support influence on infrastructure development in public universities**

Global donor fatigue is an emerging phenomenon accruing from a change of fortunes which has necessitated most of the donors to seek engagements whereby they forge partnerships with the beneficiary entities IFC, (2012). This is an emerging trend which has had a change of tact in many relationships between donors and beneficiary groups. The donors demand greater leeway in funds administration unlike before and are cautious with regard to the partnerships forged. This has heralded a new beginning especially

in bilateral relations whereby partnerships as opposed to donor support is the new trend (Burnside, 2012).

Many public universities forge partnerships with donor agencies in the wake of seeking grants for research purposes. This avails finances for development of programs to support the research initiatives (Hazelkon, 2012). In some instances the programs come along with the benefit of physical facilities provided to the institutions to enhance the research programs. This gives mutual benefits to both entities and allows growth in terms of knowledge generation and physical facilities development which are bequeathed to the institutions on the lapse of the research programs (Jaschick 2013).

Globalization and emerging lines of business have occasioned great benefits to higher education segment. This has prompted a reawakening especially at the advent of the international business community spotting a vacuum in the private higher education segment (Mbwesa, 2012). This realignment has seen a change of tide whereby most of the donor agencies and multi nationals with huge capital outlays prefer investing in private education as opposed to funding expansion of the public institutions. This gives them a bigger stake in terms of the returns on investment as opposed to the former which they have no control about (Otieno, 2012).

The need to have target beneficiary communities drawing direct benefits from associating with donors has equally been a driving factor in the emerging engagements between the donor community and public institutions. Preference for enhanced social economic outcomes as opposed to instances of projects which have no significant impact has also underpinned emerging donor relations (Kidombo, 2012).The foregoing situation has occasioned selective

association between the donor communities and the public institutions forcing a change of tide in the developments carried out by them. It is thus a requisite for the public institutions to convince the donor community of the benefits that accrue to the larger communities as opposed to the individual institutions as a condition for development support. The study sought to confirm the prevailing state of affairs with regard to the engagement between public universities in the central region and the donor community (IFC, 2012).

## **2.6 Internal resources mobilization and infrastructure development**

Many public universities globally have realized the essence of collaboration with private foundations, philanthropy and forging networks for resource mobilization purposes. The emerging trend is motivated by the fact that universities are respected institutions in terms of knowledge dissemination (PWC, 2012). The private foundations and trusts which have large acclaim always seek to ensure that the resources channeled out for public good are utilized in the right manner. They thus engage public universities as trusted custodians of their resources in the wake of reaching out to communities drawing benefits from them. Financing of physical infrastructure geared towards benefiting the student community and the wider population is a key attribute of the initiatives (Steinner, 2012).

Universities are known to be effective repositories of knowledge and building of scholarly works. Engagement between research and academia has always been the norm when the entities carrying out research seek to tap from their resource (Oanda & Jowi, 2013). This makes public universities an attractive destination for institutions continuously engaging in research. The

collaboration which is of mutual benefit owing to research institutions drawing on the expertise of the universities many times generates additional revenues for the institutions. The revenues may be used to fund the provision of infrastructure to allow carrying out the research programs thus growing physical facilities in place (Owino, 2013).

Commercial enterprises run by the public universities also support them with the additional revenues generated. This ensures that they always get to have capital at hand which can fund the recurrent expenditure and ongoing expansion programs (MacDonald, 2013). Known test cases of the module 2 programs and their effects in terms of turning around the fortunes of public institutions cannot be gain said. They were very instrumental in ensuring non disruption of programs at the advent of SAP's. They assured generation of additional revenues when the universities were faced with the reality of dwindling donor support and grants from government. This was a measure which assured them sustained new revenue streams (Mutiga, 2013).

Diversification into new alternative income generating activities as opposed to the traditional mainstays in the lines of knowledge generation has also been an avenue which many public universities have tapped into (Sewe, 2014). Presence of production units in the lines of engineering, food and beverage production, information technology and related spheres has seen gradual growth of revenues assuring the institutions funds for physical facilities expansion. This has also served the institutions well by way of providing avenues for practical exposure to the students undertaking the academic programs. The study sought to find out the internal revenue generation activities

carried out and how they affected the development of infrastructure (Walaba, 2010).

## **2.7 Summary**

The study sought to find out the governance factors by university management affecting development of infrastructure in public universities in the Central region of the republic of Kenya. It had a focus on adequacy of funds, the policies and regulations in place, donor support and the internal resources mobilization. Previous studies carried out by (Jowi 2013; Steinner, 2012; MacDonald, 2013) focused on the social economic development aspect accruing from government support as a factor affecting the growth and development of infrastructure in public universities. Surveys' carried out by (Aduda 2014; PWC, 2012 & Jaschick, 2013) showed that the ability of the public universities to innovate and come up with flexible financing programs occasioned them the benefit of growing their physical infrastructure. Studies carried out by Mutiga (2013) had a contrary opinion by calling for the enhanced donor relations as a measure of ensuring sustained infrastructure provision. The study sought to fill the gap of determining the prevailing situation in the study area as a measure of confirming the governance factors by management affecting development of infrastructural facilities.

## **2.8 Theoretical framework**

The study was hinged on the social cohesion theory which avers for inclusion as one of the elements of social cohesion and is an outcome or result of policies and programs that promote equality. The provision of education in the public universities is a foremost aspect of inclusion in the spheres of development and education access. The theory came into widespread use as a justification for

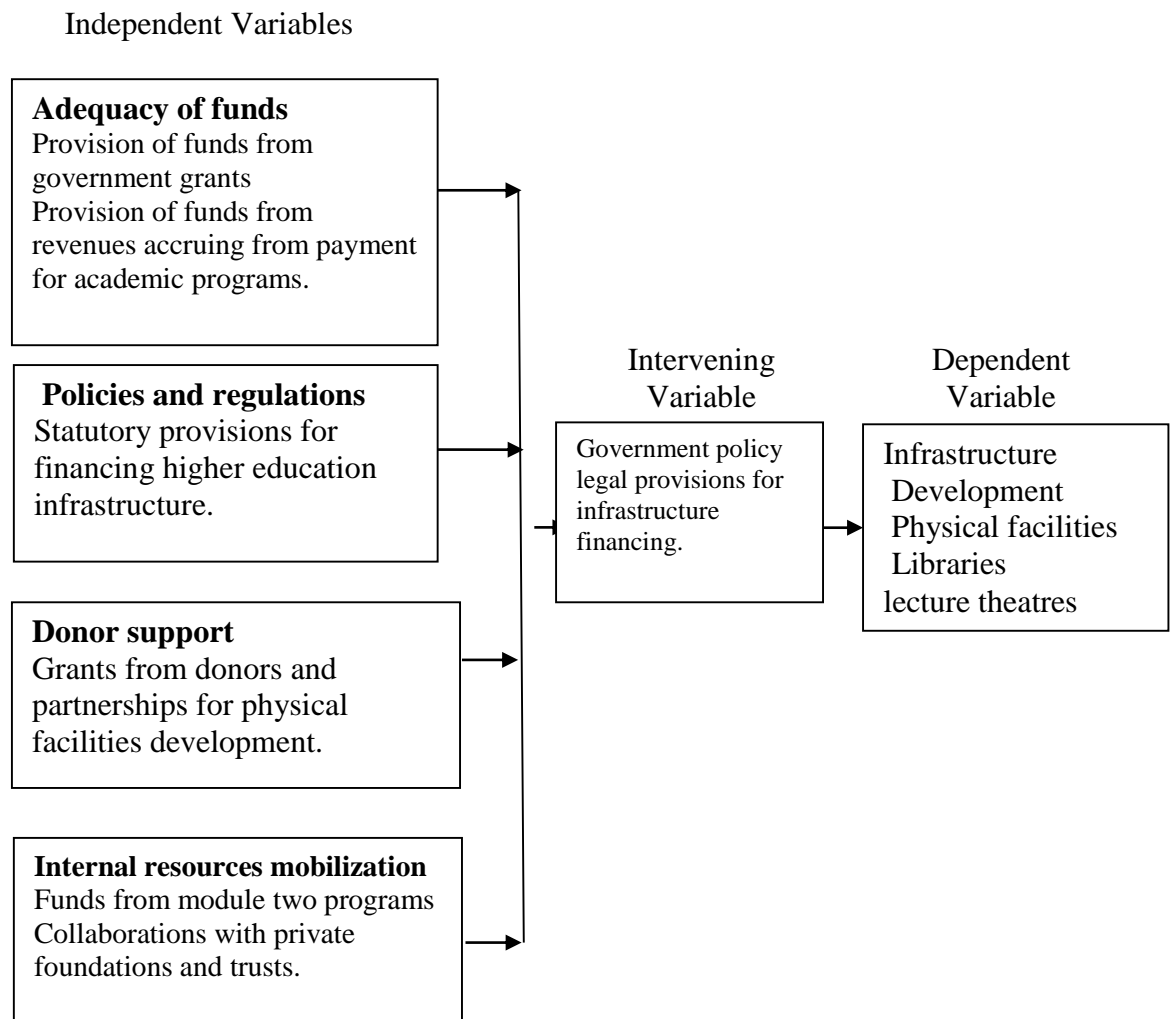
public policy interventions as a basis for meeting the needs of persons with pertinent demands for inclusion in the main stream arena as regards the access to services and allied demands.

The theory identified with the ideals of the study as pertains to the essence of ensuring adequate infrastructure provisions as a requisite for the public universities to assure higher numbers of the students undertaking education in the facilities. This sees to it that the universities work out means and ways to access funding as a premise for having the number of students taking up academic programs grow. This ensures that the institutions meet the social demands of the communities that depend on them for the provision of opportunities to the populace to undertake studies.

From a governance prism, the motivating factor for ensuring enhanced infrastructure provision is the need to have inclusion as the driving factor. Infrastructure financing is thus pegged on the social economic growth aspect as a basis of allowing greater access to the education by more numbers of students. The universities are thus positioned to ensure the growth in terms of infrastructure as a factor geared towards ensuring more social inclusion and access by the prospective students.

## 2.9 Conceptual framework

The conceptual framework for the study which entails a diagrammatic interrelationship of the variables is captured in figure 2.1



**Figure 2.1: Conceptual framework on diagrammatic interrelationship of the study variables**

Funds adequacy motivates the capacities of the public universities in terms of the ability to comfortably provide financial resources for development of physical facilities. This is determined by the ability to attract government grants and related financial resources from other quarters. The policy and

regulatory framework governing the financing of infrastructure in public universities equally affects the ability to grow and develop physical facilities. This entails the procurement regulations and provisions for financing via public - private partnerships.

Donor support in the name of philanthropic activities, collaborations, grants and partnerships equally play a role in developing physical infrastructure. In the advent of assured and sustained donor support there is bound to be growth in the physical infrastructure. Internal resources mobilization counts in the name of allowing the universities to have additional revenue streams. The additional revenue streams may entail module two academic programmes, production centers, business incubation units and commercial activities away from the core academic programs.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the research design, target population, sample size and sampling procedures, research instruments, validity of research instruments, reliability of research instruments, data collection procedures, data analysis techniques and ethical considerations.

#### **3.2 Research design**

The study employed a descriptive survey design to find out the governance practices by university management influencing infrastructure development in public universities in central region of the republic of Kenya. According to Orodho (2005), a descriptive survey design entails collection of information from a selected sample by the way of administration of questionnaires. The method is used to collect information about people's opinions, habits, attitudes or any variety of social issues. This design is considered worthwhile owing to the ability of facilitating data collection without manipulation of the variables. In the case of the study the essence of not manipulating the variables and getting the information as it was on the ground was a key imperative.

#### **3.3 Target population**

The target population of the study was the six public universities in the central region of the republic of Kenya which are Kenyatta University, Jomo Kenyatta University of Agriculture and Technology, Dedan Kimathi University, Karatina University, Murang'a University of Technology and Kirinyaga University.

### 3.4 Sample size and sampling procedures

The census sampling method was used for sampling the vice chancellors and deputy vice chancellors of finance who are directly involved in the planning issues which entail the development of infrastructure in the public universities. The study equally sought out the principals of the college's in the universities to confirm the pertinent provisions for the infrastructural demands. In the university colleges the study sought out the principals. The study thus had a sample size of four vice chancellors, four deputy vice chancellors, thirty three principals and forty two university council members. The study thus had a sample size of eighty three persons.

**Table 3.1 target population and sample size**

Category	Target Population	Sampled population	Percentage
Vice chancellors	4	4	4.8
Deputy vice chancellors in charge of finance	4	4	4.8
Principals	33	33	39.7
University council members	42	42	50.7
Total	83	83	100

### **3.5 Research instruments**

The study used questionnaires as the instruments for the study and they were administered on the administrative personnel. The questionnaires were preferred because they could serve many respondents; they can be self-administered, are anonymous and can be standardized and ease data analysis procedures (Orodho, 2005). The questionnaires had closed and open ended questions. The questionnaires had sections covering the socio-demographics information and the objectives of the study which were adequacy of funds policies and regulations, donor support and internal resources mobilization.

### **3.6 Validity of research instruments**

Validity is the degree to which a test measures what it purports to be measuring. Validity can also be said to be the degree to which results obtained from analysis of data actually represent the phenomenon under investigation (Orodho, 2005). The researcher tested the face and content validity of the questionnaire. Face validity is in relation to the misunderstanding or misinterpretation of the question. This was checked by way of employing the pre-testing method. The pretesting was done in Embu University College by administering the questionnaires on to five respondents. Content validity refers to the capacity of the instrument to provide adequate coverage of a topic. Adequate preparation of the instruments under the guidance of the supervisor, expert opinion and pre-testing of the open-ended questions helped establish the content validity.

### **3.7 Reliability of research instruments**

Reliability is a measure of the extent to which an instrument will consistently yield the similar results after being administered several times to

the same respondents (Orodho, 2005). To establish the reliability of the research instruments, the test retest method whereby the pre-test respondents were issued with questionnaires for them to fill and the same questionnaires were subjected to a re-test to see how the response was.

The reliability coefficient was computed using the Pearson product correlation coefficient. The procedure was deemed appropriate owing to the fact that it entailed calculation of a correlation coefficient based on the results from the test and re-test of the pilot study instruments. A coefficient of 0.7 or more was considered adequate (Tavakol, 2011).

### **3.8 Data collection procedures**

Permission to conduct the research was sought from the National Commission of Science, Research and Innovation. The researcher thereafter visited the respective counties of Kiambu, Nyeri, Murang'a and Kirinyaga and produced the introductory letter before visiting the target institutions to seek out the respondents. The researcher dropped and picked the questionnaires from the respondents. The researcher made prior arrangements with the institutions before questionnaire administration.

### **3.9 Data analysis techniques**

After all the data had been collected, data cleaning followed for the purposes of identifying any incomplete, inaccurate or unreasonable data. Coding of the data thereafter followed and the codes were entered into a computer for the purpose of analysis. Data analysis involved both quantitative and qualitative procedures. Quantitative data analysis entailed descriptive and inferential statistics. This was facilitated by the use of computer spreadsheets

and the Statistical Package for Social Sciences (SPSS) was used. Martin and Acuna (2002), said that the SPSS package is able to handle a large amount of data and given its wide spectrum in the array of statistical procedures which are purposefully designed for social sciences; it was deemed efficient for the task. The study used Chi-Square and Spear Man Rank Order to test the causal relations of the variables.

Qualitative data was analyzed by way of understanding the meaning of the information divulged by the respondents. It was thereafter compared to documented data from previous research on governance factors affecting infrastructure development in public universities. It was presented thematically in line with the objectives of the study and thereafter presented by use of frequency distribution tables, percentages and inferential statistics.

### **3.10 Ethical considerations**

The researcher sought the consent of the respondents before administering the research instruments to them. The researcher also assured the respondents of utmost confidentiality as regards their identities. An assurance that the information provided would be used for research purposes only was also proffered to the respondents.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4.1 Introductions

The study sought to find out the factors influencing infrastructure development in public universities in central Kenya. All analysis entailed descriptive and inferential statistics. The objectives that guided the study were adequacy of funds, policies and regulations, donor support, capacity to mobilize internal resources influence development of infrastructure in public universities in central Kenya.

#### 4.2 Demographic data

The study sought to find out the socio-demographic data as regards the university administrators with regards to their, length of service. This was with a view of relating the information to their understanding of the governance practices by university management affecting infrastructural development in public universities.

#### Table 4.1: Response rate

The response which entailed the participation by head teachers sampled in the study was as indicated in the table 4.1.

Response	Frequency	Percent
Number of questionnaires returned by respondents	66	80
Number of questionnaires not returned	17	20
Total	83	100

The response can be interpreted to show a willing participation from the sampled respondents owing to the fact that 80% of them filled and returned the questionnaires. It equally denoted a clear understanding and grasp of the subject at the heart of the study. This vindicated the study as regards its relevance owing to the appreciation of the participation of the large percentage of the respondents.

The study sought to establish the respondents' length of service and this was as captured in table 4.2.

**Table 4.2 length of service**

Responses	Frequency	Percentage
Less than 1 year	13	20
1-5 years	28	43
6-10 years	25	37
Total	66	100.0

The responses as shown in table 4.2 indicate that most of the respondents (43%) (n=28) had served as administrators for periods of 1-5 years. Others had served for periods of between 6-10 years (37%) (n=25) while a negligible percentage had served for less than one year (20%) (n=13). The responses reflected varied exposure with regards to the ability to have the respondents serve in their positions. This was a factor which predisposed the study to the benefit of exploiting the experience of the respondents. This was with regards to their knowledge of the governance practices affecting the development of infrastructure in public universities.

The responses for the presence of provisions in the different universities for infrastructure development were as captured in table 4.3

**Table 4.3 provision for infrastructure development**

Responses	Frequency	Percentage
Yes	66	100
No	0	0
Total	66	100

The responses as shown in table 4.3 showed that all the universities in the central region of the republic of Kenya visited during the study had put in place provisions for infrastructure development. The responses were a clear indication of the capacity of the institutions to effectively plan and make budgetary appropriations geared towards ensuring optimal infrastructure development. It was a reflection of the essence with which infrastructure development was treated with in the institutions.it can thus be interpreted to mean that the universities planned and made the necessary forecasting geared towards ensuring infrastructural development was assured in the institutions.

#### **4.2.1 Actual provisions in place for infrastructure development**

The respondents alluded to the universities putting in place infrastructure development plans in the institutions development strategies. This ensured that the growth plans took into cognizance the demands for infrastructure within the institutions in tandem with the envisaged provisions. Appropriations of budgetary resources and seeking out financing packages from financial institutions, the parent ministry and allied development agencies were



equally cited as provisions which the institutions had put into place to ensure that infrastructural growth was assured.

#### **4.2.2 Specific infrastructure put in place in the previous two years**

The respondents enumerated the different infrastructure that had been put in place in the previous two years. The responses reflected the construction of administration blocks, halls of residence, libraries, lecture halls, science laboratories and related amenities for undertaking academic programs. The responses were an indication that the universities had strived to provide infrastructure requisite for carrying out academic work and incidental programs geared towards supporting the achievement of the academic programs. It was an indication that the universities had different needs with regards to infrastructure demands and the prevailing pertinent requirements motivated the kind of infrastructure put up. It can thus be interpreted to mean that the different demands of the institutions motivated the kind of infrastructure put up and this was evident from the responses on the varied facilities put up in the previous two years.

#### **4.3 Adequacy of funds and infrastructure development**

Growth in student population had a similar multiplier effect on the revenues generated by the universities. This occasioned the benefits of having increased capital to fund the rising demand accruing from the increased population (Steinner, 2012). In some universities in Asia, autonomy was granted as a prelude to registration thus independence in the use of revenues generated. This assured the institutions enhanced capacity with regard to

infrastructure growth and development (PWHC, 2012). The research sought to find out how the prevailing situation was in the study area.

The need to have universities innovating and seeking out non-conventional financing means is a challenge to many public institutions. It is incumbent on the institutions to seek out financing arrangements which are flexible enough to warrant sustainable growth in cost effective manner (Oanda & Jowi, 2013). Public – private partnerships like in the build-own and operate arrangements can be exploited for long term physical facilities provision to ensure sustainable development without heavy capital expenditure. The study will seek to find out the extent to which adequacy of funds affects the development of physical infrastructure in the study area (Nyachoti, 2013).

The adequacy of funds to meet infrastructure requirements for the different universities was as shown in table 4.4

**Table 4.4 adequacy of funds to meet all its infrastructure requirement**

Responses	Frequency	Percentage
Yes	6	9.1
No	60	90.9
Total	66	100.0

The responses in table 4.4 show that majority of the respondents (90.9%) (n=60) did not consider their institutions as having adequate funds enough to meet all the infrastructure requirements. The responses were an indication that the dearth of resources for infrastructural demands was a factor which limited

the universities ability to develop and grow their capacities. It reflected a situation whereby the needs for infrastructure growth were limited by the availability of financial resources. It can be interpreted to mean that despite the need to ensure growth of infrastructure limited financial capacity affected the institutions aspirations with regards to ensuring the provisions of infrastructure.

The findings identified with previous works by Oanda & Jowi, (2013) who argued that Africa has the undoing of the pain of budgetary deficits owing to leakages in the tax collection and administration procedures. This exposes the public institutions of higher learning relying on government support to uncertainty in the allocations made to them by exchequer. The prevailing situation contributes to slowed development of the infrastructure provisions appropriated for in the institutions of learning owing to limited financing. This has negative implications on the growth of the physical infrastructure provisions.

Responses on cases of failure to meet infrastructure demands owing to inadequacy of funds were as shown in table 4.5

**Table 4.5 Cases of failure to meet infrastructural demands**

Responses	Frequency	Percentage
Yes	8	12.1
No	58	87.9
Total	66	100.0

Table 4.5 shows that majority of the universities had evident cases of failure to meet infrastructure demands owing to inadequacy of funds (87.9%) (n=58). The responses confirmed the inability of the universities to assure the

sustained growth in terms of provisions for infrastructure associated with failure to access financial resources. This reflected budgetary constraints and the situations of deficits occasioning failure to rightfully appropriate resources for infrastructure development at the expense of other programs. It can be interpreted to mean that the institutions had demands requiring budgetary appropriations obligating them to attend to them first at the expense of the infrastructural requirements.

The findings confirmed previous works carried out by Kidombo, (2012) who was of the view that many public universities in Kenya rely solely on government grants in financing their infrastructure requirements. The government grants are mainly used to fund recurrent expenditure as opposed to development of physical infrastructure and related requirements. This constrains the institutions owing to impaired growth accruing from the foregoing position.

#### **4.3.1 Ways used by the universities to mitigate inadequacy of funds for infrastructural development**

The respondents alluded to presence of various mechanisms employed by the universities to mitigate against the inadequacy of funds in infrastructural development. They confirmed that the universities sought out partners to engage in development support via the premise of public private partnerships whereby the private entities put up infrastructure and recovered the cost from the institutions over a period of time. Situations whereby the universities sought out government grants from the parent ministry and at times engaged the treasury to liaise with the different line ministries were equally cited. This ensured that the universities had access to financial resources to mitigate against the deficits curtailing infrastructure growth.

The respondents confirmed that financing from financial institutions was also an alternative that they exploited. The provisions for credit facilities acquired by the institutions being repaid from the internal revenues and funds from government capitation were cited.

**Table 4.6: Pearson chi-square test on the adequacy of funds and cases of failure to meet infrastructure demands due to inadequate funds**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	47.850 <sup>a</sup>	1	.000		
Continuity Correction <sup>b</sup>	39.205	1	.000		
Likelihood Ratio	31.215	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	47.125	1	.000		
N of Valid Cases	66				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is .73.

b. Computed only for a 2x2 table

Table 4.6 shows a Chi-square value of  $\chi^2 = 47.850$  at a significance level of 0.000. The calculated statistic  $\chi^2 = 47.850$  was found to be more than the tabled critical value of  $\chi^2 = 31.215$ . It can be interpreted that, statistically, there was a relationship between the adequacy of funds and cases of failure to meet infrastructure demands due to inadequate funds  $\alpha = 0.73$ . It can thus be interpreted to mean that the adequacy of funds in the institutions determined their ability to meet the infrastructural demands.

**Table 4.7 Correlation on the adequacy of funds and cases of failure to meet infrastructure demands due to inadequate funds**

		adequate funds to meet all its infrastructure requirement	cases of failure to meet infrastructural demands
adequate funds to meet all its infrastructure requirement	Pearson Correlation	1	.851**
	Sig. (2-tailed)		.000
	N	66	66
cases of failure to meet infrastructural demands	Pearson Correlation	.851**	1
	Sig. (2-tailed)	.000	
	N	66	66

\*\* . Correlation is significant at the 0.01 level (2-tailed).

A Spearman's Rank Order correlation was run to determine the relationship between the adequacy of funds and cases of failure to meet infrastructure demands due to inadequate funds ( $r_s = 0.851, p = .01$ ). It can thus be interpreted to mean that the adequacy of funds in the institutions determined their ability to ensure the provision of infrastructural facilities in a good manner. This denoted the fact that in the event of adequate funds the institutions were bound to have the net benefits of adequate infrastructural facilities provision.

**Table 4.8 Lickert scale policies and regulations guiding infrastructural development**

		policies and regulations guiding infrastructural development		Total
		Yes	No	
access to adequate funds to provide all required infrastructure	Strongly disagree	0	3	3
	disagree	36	4	40
	undecided	12	0	12
	agree	9	0	9
	strongly agree	2	0	2
Total		59	7	66
council has power to seek financing from banks	Strongly disagree	0	1	1
	disagree	1	6	7
	undecided	17	0	17
	agree	39	0	39
Total		59	7	66
government grants are readily available	Strongly disagree	5	7	12
	disagree	22	0	22
	undecided	22	0	22
	agree	9	0	9
	strongly agree	1	0	1
Total		59	7	66
fees paid by students is enough to meet the infrastructure obligations	Strongly disagree	2	7	9
	disagree	43	0	43
	undecided	6	0	6
	agree	8	0	8
Total		59	7	66
provisions for raising capital from the local community	Strongly disagree	11	7	18
	Disagree	48	0	48
Total		59	7	66

The premise of the universities having access to adequate funds to assure all the requisite infrastructure was in place was dissented to by most of the respondents (61%) (n=40). This was an indication that access to funds in most

of the universities to ensure infrastructure development for all the requisite needs was curtailed. This was confirmation that despite the different needs that the universities had in terms of infrastructure requirements, access to financial resources attributed to limited funds was a factor limiting their growth. Instances whereby the universities adequate funds to provide on the required infrastructure were cited by a negligible percentage of the respondents (17%) (n=9). This was an indication that some universities had adequate infrastructure and their growth was not limited by inadequate financial resources. The underlying situation could be attributed to the phenomenon of young institutions with low student populations without enormous demands on the present facilities or the situation of old institutions having reached the plateau phase of growth whereby they no longer attract numbers thus no strain on the present facilities. It can thus be interpreted to mean that the dearth of financial resources was a great limiting factor to the universities as pertains to the ability to ensure optimal infrastructure provision.

The provisions for the university councils and other organs of management to seek out financing from financial institutions like banks was confirmed by most of the respondents (62%) (n=41). This was an indication that the universities had autonomy in terms of making provisions for their financing with financial institutions geared towards facilitating infrastructure provision. The responses denoted the ability to have financial institutions stepping in and filling the gaps occasioned by inadequate financial resources by way of financing and allied credit facilities to be repaid back by the institutions. The prevailing situation reflected inadequacy on the part of government to the extent of the available funds for capitation geared towards infrastructural provision



being inadequate. This had forced the management organs to innovate and seek out alternative financing from the banks to mitigate shortfalls in infrastructure. It can thus be interpreted to mean that the universities were constrained in terms of the available funds for infrastructure provision to the extent of innovating to get alternative financing from financial institutions.

The availability of government grants to assure infrastructural facilities demands were readily met was dissented to by most of the respondents(50%) (n=33). This was an indication that despite the public universities heavily relying on government support for infrastructural facilities provision and related needs, the funds were not adequate. Provision for grants specific for infrastructural facilities development was thus not tenable. This exposed the precarious situation that the universities were exposed to in terms of lack of adequate financing specific for infrastructure facilities provision. It can be interpreted to mean that failure to readily access grants from government geared towards assuring the provision of infrastructure in public universities was a factor which limited their growth in terms of facilities development.

The ability of the fees paid by the students to comfortably meet all the infrastructure obligations in the universities was dissented to by most of the respondents (78%) (n=52). The responses were reflective of a situation whereby despite the students paying school fees for the academic programs that they undertook the monies paid were not adequate to meet the obligation of infrastructure development. The responses denoted inadequacy on the part of the institutions and the inability to rely on fees paid by students in the quest of financing their infrastructure provisions. It can thus be interpreted to mean that

in many instances the fees paid for by the students was inadequate to meet the infrastructure demands of the institutions.

Provisions for raising capital from the local communities as a measure of assuring infrastructure development was refuted by all respondents. This was confirmation that the institutions never engaged the local communities with a view of fundraising from them to meet their infrastructural demands. This reflected a departure from the past when it was common practice to have public institutions engaging in funds drives to raise money for infrastructure provision from the communities. It can thus be interpreted to mean that the institutions seldom engaged in fundraising targeting the local communities as a measure of ensuring provision of funds to support infrastructural development.

The study findings reflected results from previous works by (Mutiga, 2013) (Zwick & Sklar, 2012) which found out that infrastructure provisions require heavy capital outlay in the name of financing requirements. Many institutions in the higher education segment have the unfortunate instance of not being able to effectively access the requisite finances. This deters the development plans and constrains acquisition of physical infrastructure. Studies carried out in the USA showed that universities that had councils which were adept to the demands of meeting sustainable financing obligations readily grew their infrastructure as opposed to those which were not.

#### 4.4 Policies and regulations and infrastructure development

The protocols defining global developmental issues highly influence the levels of policy in all spheres. Higher education is an area which has been largely left to the market forces which determine growth and development especially since the advent of the entry of many private players in the sector (Burnside, 2012). The stiff competition between the private sector and public sector in higher education provision makes governments to relegate the financing of public institutions infrastructure to the periphery. It thus calls for the individual institutions to innovate and come up with sustainable programs which can be effectively implemented to assure growth (Braxton, and Hirschy, 2012). The study sought to establish the extent to which the policies and regulations in place affected the realization of physical infrastructure in the universities.

The responses on the presence of policies and regulations guiding infrastructure development in the universities were as shown in table 4.9.

**Table 4.9 Policies and regulations guiding infrastructural development**

Responses	Frequency	Percent
Yes	59	89.4
No	7	10.6
Total	66	100.0

The responses in table 4. 9 showed that majority of the institutions had put in place policies geared towards ensuring infrastructural development. The responses were confirmation that the institutions had put in place concerted plans which enabled resource allocation and activities with an aim of ensuring

that the infrastructure was in place. The responses were also confirmation of the ability to have documented provisions in the instruments guiding the programmes carried with an aim of putting in place the requisite infrastructure. The responses can be interpreted to mean that the institutions had earmarked plans of action with clearly articulated the infrastructure development plans and the ideals requisite to have them realized.

The study findings were in tandem with the position of Oanda & Jowi, (2013) who confirmed the Council for University Education is charged with the responsibility of ensuring growth and development of infrastructure in universities in Kenya. The authority to give charters and provisions for running the institutions is equally conferred to the council. Infrastructure provision is a key requisite for allowance to operate universities (Mutiga, 2013). The inspection of facilities in terms of wellness and the ability to meet the requisite provisions is a great underlying factor. The same is evident in the wake of the fact that they enforce the requirements for the universities to develop internal policies with regards to infrastructure development and other pertinent needs.

#### **4.4.1 Specific infrastructure provision policies in place**

The respondents confirmed that the policies guiding the provisions for universities infrastructure development were largely drawn from the specifications provided for by the council for university education. The policy provisions as guided by the Universities Act, 2012 stipulate the requirements for infrastructure before the setting up of universities and the requisites before introducing new programmes. This entails adequate space for lecture halls, laboratories and related infrastructure in place for the delivery of the academic

programs. The right sizes of the facilities with regards to student population and the standard requirement also came out as factors guiding and defining the policies guiding the provision of infrastructure in the institutions. This was a clear indication that the institutions were guided by some pertinent parameters before documenting the policies that they relied on with regards to earmarking infrastructure development.

The findings reflected the position taken by Hazelkon, (2012) who was of the view that the national financing demands for the higher education sector in different jurisdictions motivate the policy framework governing the sectors. In the event of provisions to allow for budgetary allocations within a jurisdiction the financing of infrastructure is thus pegged on the availability of monetary resources. The capacity to build local abilities with regard to financing thus is a key imperative in the resources availment for the physical infrastructure in public institutions (Brooks, 2011).

**Table 4.10 adequacy of the policies to ensure sustainable infrastructure development**

Responses	Frequency	Percentage
to a large extent	42	63.6
to a fair extent	18	27.3
to a low extent	6	9.1
Total	66	100.0

The responses as shown in table 4.10 shows that majority of the respondents (63.6%) (n=42) deemed the adequacy of the policies in place to

ensure sustainable infrastructure development in the institutions to have been good to a large extent. The responses confirmed the level of satisfaction with the policies put in place by the universities geared towards ensuring that the infrastructure facilities were provided for in a good manner. This was confirmation of the approval rating that the respondents gave to the policies in place for infrastructural facilities provision. It can be interpreted to mean that the respondents appreciated the policies that the universities had put in place to ensure optimal infrastructural facilities provision.

**Table 4.11 Chi-square on presence of policies and adequacy of the policies in ensuring infrastructure provisions**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56.039 <sup>a</sup>	2	.000
Likelihood Ratio	36.918	2	.000
Linear-by-Linear Association	35.303	1	.000
N of Valid Cases	66		

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .64.

Table 4.11 shows a Chi-square value of  $\chi^2 = 56.039$  at a significance level of 0.000. The calculated statistic  $\chi^2 = 56.039$  was found to be more than the tabled critical value of  $\chi^2 = 36.918$ . It can be interpreted that, statistically, there was a relationship between the presence of policies and the adequacy of the policies in ensuring infrastructure facilities development  $\alpha = 0.64$ . It can thus be interpreted to mean that in the event of sound policies in place there was bound to be sustainable infrastructure facilities development.

**Table 4.12 Correlation on presence of policies and adequacy of the policies in ensuring infrastructure provisions**

		policies and regulations guiding infrastructural development	adequacy of the policies to ensure sustainable infrastructure development
		1	.737**
policies and regulations guiding infrastructural development	Pearson Correlation		
	Sig. (2-tailed)		.000
	N	66	66
adequacy of the policies to ensure sustainable infrastructure development	Pearson Correlation	.737**	1
	Sig. (2-tailed)	.000	
	N	66	66

\*\* . Correlation is significant at the 0.01 level (2-tailed).

A Spearman's Rank Order correlation was run to determine the relationship between the presence of policies and adequacy of the policies in ensuring infrastructure provisions ( $r_s = 0.737, p = .01$ ). It can thus be interpreted to mean that the in the event of sound policies in place the requisite infrastructural facilities would be readily availed. It thus denoted the correlation between the presence of policies and their adequacy with regards to assuring the development of physical infrastructural facilities.

The study sought to find out the respondents positions on attributes pertaining to policies and their influence on infrastructure provision. The respondents responses were ranked on a scale of 1-5 with 1 being the least and 5 the highest.

**Table 4.13 Lickert scale on policies and regulations and infrastructure development**

		policies and regulations guiding infrastructural development		Total
		Yes	No	
policy of putting up infrastructure	Disagree	0	2	2
	Undecided	0	3	3
	Agree	40	2	42
	strongly agree	19	0	19
Total		59	7	66
increase in student numbers matched with growth	Strongly disagree	2	7	9
	Disagree	27	0	27
	Undecided	9	0	9
	Agree	13	0	13
Total	strongly agree	8	0	8
		59	7	66
annual infrastructure needs review	Strongly disagree	0	3	3
	Disagree	4	4	8
	Undecided	6	0	6
	Agree	31	0	31
	strongly agree	18	0	18
Total		59	7	66
budgetary allocation for infrastructural upgrade	Disagree	8	7	15
	Undecided	2	0	2
	Agree	23	0	23
	strongly agree	26	0	26
Total		59	7	66
repairs and maintenances ensures sustainable infrastructure	Strongly disagree	22	7	29
	Disagree	1	0	1
	Agree	21	0	21
	Strongly agree	15	0	15
Total		59	7	66

The provision for having in place policies stipulating that infrastructure has to be in place before setting up academic programs was confirmed by most of the respondents (92%) (n=61). The responses confirmed that the institutions



had strived to ensure that the requisite infrastructure was always a precursor to the setting up of academic programs. This ensured that the learners were not disenfranchised with regard to availability of infrastructure to carry out their academic programmes. It equally assured the institutions of the ability to play within the rules set up by the council of university education which makes it mandatory for the infrastructure to be in place first before the academic programs are rolled out. The responses can be interpreted to mean that the institutions were fore-armed with regard to the ability to ensure that they provided quality as pertains to the infrastructure requirements.

The ability to match all students' increases with growth in infrastructure was dissented to by most of the respondents (54%) (n=36). The responses reflected a situation whereby the student population in growth was in most instances not commensurate to the development of the infrastructure in terms of upgrade. The responses were an indication that the situation of failure to have adequate facilities despite the increase in student numbers prevailed in the institutions. This was a pointer to the inadequacy of the institutions to rightfully conduct proper forecasting geared towards ensuring that the facilities in place were not strained and overstretched due to the growth in student population. It can be interpreted to mean that in some instances the institutions did not meet the ideal standards as pertains to having optimal planning for student population growth by putting up additional infrastructure.

The position identified with that taken by Gakuu, (2012) who was of the view that Africa was hard hit by the implications of the structural adjustment programs occasioned by the Breton Woods institutions Withdrawal of programs which ensured the requisite budgetary support was availed to the governments

stalled many development programs. This severely affected the higher education sector with many countries starting cost sharing programs in the institutions. This had negative implications on financing infrastructure provisions.

Provisions for annual infrastructure needs review was confirmed by most of the respondents (74%) (n=49). This was confirmation the universities always assessed the available infrastructure with a view of matching it to the prevailing demands and at times making future projections based on the needs assessments. This was reflective of planning on the part of the institutions and capacity to ensure that they were not caught off guard with sudden demands for immediate infrastructure provisions which had not been planned for. The provision equally confirmed that the institutions conformed to the requirements put in place by the council for university education which makes it mandatory for the universities to constantly review their infrastructure needs as a premise for future planning and forecasting in line with student population growth. It can be interpreted to mean that the universities strived to ensure that they assessed the prevailing demands in terms of infrastructure needs as a requisite to aid them in planning for future growth.

Provisions to allocate resources by the university councils and other organs of management by way of budgetary allocations were confirmed to have been made based on a needs basis by 74% of the respondents(n=49). The responses were an indication that the organs of management within the institutions made provisions for budgetary resources allocation from a policy initiative. This ensured that the infrastructure requiring upgrade and on a pertinent need objective was actualized in the most optimal manner. It can thus

be interpreted to mean that the university councils and boards of management has strived to put in place the requisite policy to ensure that infrastructural upgrade was carried out on a needs basis.

Regular provision for repairs and maintenance to ensure sustainable infrastructure development was confirmed by 54 % of the respondents (n=36). This was confirmation that the institutions ensured that the requisite provisions for repairs and regular upgrades were made to ensure habitable structures and sustainable infrastructure growth. The percentage of respondents who dissented to the premise of the institutions having provisions for repairs in a regular manner was very significant at 43% (n=29). This was an indication that in many instances the provisions for the practice of repairs being undertaken to ensure sustainable infrastructure development and maintenance was not adhered to. This was evidence that in some of the institutions neglect and dereliction of duty on the part of the administration sufficed.

#### **4.5 Donor support and infrastructural facilities provision**

Global donor fatigue is an emerging phenomenon accruing from a change of fortunes which has necessitated most of the donors to seek engagements whereby the forge partnerships with the beneficiary entities IFC, (2012). This is an emerging trend which has had a change of tact in many relationships between donors and beneficiary groups. The donors demand greater leeway in funds administration unlike before and are cautious with regard to the partnerships forged. This has heralded a new beginning especially in bilateral relations whereby partnerships as opposed to donor support is the

new trend (Burnside, 2012). The study sought to find out the extent to which donor support affected the provision of infrastructure in the universities.

The responses on the presence of donor support to ensure the provision of infrastructural facilities was as shown in table 4.14

**Table 4.14 Donor support in infrastructural facilities provision**

Responses	Frequency	Percentage
Yes	42	63.6
No	24	36.4
Total	66	100.0

The responses shown in table 4.14 shows that majority of the institutions (63.6%) (n=42) had accessed donor support for infrastructure provision. This was confirmation that they had benefited by virtue of associating and partnering with development agencies in the quest of assuring access to infrastructure for their institutions. The responses reflected a situation whereby the institutions had gone out of their way to partner as engage in collaboration with a view of enhancing their capacities. It can be interpreted to mean that the practice of mutualism between institutions and development agencies had enhanced their capacities with regard to provision of infrastructure.

The study findings confirmed previous works by Hazelkon, (2012) who was of the view that many public universities forge partnerships with donor agencies in the wake of seeking grants for research purposes. This avails finances for development of programs to support the research initiatives In some instances the programs come along with the benefit of physical facilities provided to the institutions to enhance the research programs. This gives mutual

benefits to both entities and allows growth in terms of knowledge generation and physical facilities development which are bequeathed to the institutions on the lapse of the research programs (Jaschick 2013).

#### **4.5.1 Actual donor support availed**

The respondents confirmed that the institutions had benefited in terms of having machinery for practical exposure availed and the physical infrastructure to hold the machinery provided. This was an indication that the partner agencies went out of their way to ensure that even in the event of providing machinery for academic processes enhancement they put up physical infrastructure to hold it. Instances whereby provision of lecture halls and other amenities geared towards aiding the delivery of academic programmes were equally cited. This was an indication that the institutions strived to collaborate and engage the donor agencies with a view of ensuring optimal program delivery. It can be interpreted to mean that the institutions had identified alternative financing from the partner development agencies geared towards bridging the short falls of financing from the exchequer.

The relations between the universities and the donors confirmed the position taken by Mbwesa, (2012) who was of the view that globalization and emerging lines of business have occasioned great benefits to higher education segment. This has prompted a reawakening especially at the advent of the international business community spotting a vacuum in the private higher education segment. This realignment has seen a change of tide whereby most of the donor agencies and multi nationals with huge capital outlays prefer investing in private education as opposed to funding expansion of the public institutions.

This gives them a bigger stake in terms of the returns on investment as opposed to the former which they have no control about.

**Table 4.15 Impact of donor support on infrastructure development**

Responses	Frequency	Percentage
to a high degree	44	66.7
to a fair degree	18	27.3
to a low degree	4	6.1
Total	66	100.0

The responses show that majority of the respondents (66.7%) (n=44) highly appreciated the ability of the donor support to impact on infrastructure development in the institutions. This was an indication that the activities carried out by donors within the institutions had gained wide acceptance by the membership to the extent of having them highly appreciated with regard to the capacity to meet stakeholder expectation. This reflected the ability of the donor funded programs geared towards infrastructure development resonating with the ideals of the institutions. It can thus be interpreted to mean that the donor targeted infrastructural development activities were positively appreciated in the institutions.

The need to have target beneficiary communities drawing direct benefits from associating with donors has equally been a driving factor in the emerging engagements between the donor community and public institutions. Preference for enhanced social economic outcomes as opposed to instances of projects which have no significant impact has also underpinned emerging donor relations (Kidombo, 2012).The foregoing situation has occasioned selective

association between the donor communities and the public institutions forcing a change of tide in the developments carried out by them.

**Table 4.16 Chi-square test on the presence donor support and the impact of the donor support on infrastructure provision**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	57.750 <sup>a</sup>	2	.000
Likelihood Ratio	70.252	2	.000
Linear-by-Linear Association	49.040	1	.000
N of Valid Cases	66		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.45.

Table 4.16 shows a Chi-square value of  $\chi^2 = 57.750$  at a significance level of 0.000. The calculated statistic  $\chi^2 = 57.750$  was found to be more than the tabled critical value of  $\chi^2 = 49.040$ . It can be interpreted that, statistically, there was a relationship between presence of donor support in the institutions and its ability to impact on the capacity to sustainably provide infrastructure in them  $\alpha = 1.45$ . It can thus be interpreted to mean that donor support highly impacted on infrastructure facilities provision. The statistical findings were in tandem with the position of IFC, (2012) which stated that it is a requisite for the public institutions to convince the donor community of the benefits that accrue to the larger communities as opposed to the individual institutions as a condition for development support. The study sought to confirm the prevailing state of affairs with regard to the engagement between public universities in the central region and the donor community

**Table 4.17 Correlations on presence of donor support and the impact of the donor support on infrastructure provision**

		donor support for infrastructure provision	impact of donor support on infrastructure development
donor support for infrastructure provision	Pearson	1	.869**
	Correlation		
	Sig. (2-tailed)		.000
impact of donor support on infrastructure development	N	66	66
	Pearson	.869**	1
	Correlation		
	Sig. (2-tailed)	.000	
	N	66	66

\*\* . Correlation is significant at the 0.01 level (2-tailed).

A Spearman's Rank Order correlation was run to determine the relationship between the presence of donor support and the impact of the donor support on infrastructure provision ( $r_s = 0.869$ ,  $p = .01$ ). It can thus be interpreted to mean that the in the donor support directly impacted on the infrastructural facilities development. It thus denoted the correlation between the availability of donor support and capacity to assure infrastructure provision in the institutions.



**Table 4.18 Lickert scale on donor support and infrastructure development**

		donor support for infrastructure provision		Total
		Yes	No	
institution has received support for infrastructure development	Strongly disagree	0	12	12
	Disagree	1	12	13
	Agree	30	0	30
	strongly agree	11	0	11
Total		42	24	66
research collaboration has ensured growth of infrastructure	Strongly disagree	0	8	8
	Disagree	1	16	17
	agree	22	0	22
	Strongly agree	19	0	19
Total		42	24	66
academic exchange programs have ensured support	Strongly disagree	0	6	6
	Disagree	0	9	9
	Agree	24	9	33
	strongly agree	18	0	18
Total		42	24	66
industry and academia has ensured construction	Strongly disagree	0	14	14
	Disagree	19	10	29
	Agree	11	0	11
	Strongly agree	12	0	12
Total		42	24	66
bilateral government to government support programs	Strongly disagree	0	14	14
	Disagree	1	10	11
	Undecided	13	0	13
	Agree	19	0	19
	Strongly agree	9	0	9
Total		42	24	66

Capacity of the institutions to receive support for infrastructure development from donor agencies was confirmed by most of the respondents (62%) (n=41). This was an indication that the institutions had mutual relations

which ensured sustained collaboration over a period of time thus availing donor support for infrastructure facilities provision. It was evidence of the fact that the mutualism had transcended the initial contacts made thus the element of sustained support over a period as evidenced by the repeat collaboration on a regular basis. It can be interpreted to mean that the institutions had strived to ensure mutual relations with the partner agencies which guaranteed them cordial association to the extent of having regular support for infrastructure development over a period of time. Instances whereby the support was not enhanced were evident from the responses provided. This could have been a pointer to the situation of young institutions in the nascent stages of associating with the partner donor agencies.

Support from research collaboration was equally confirmed to have ensured growth of infrastructure in the institutions. This was by way of having the universities partner with other research agencies to carry out collaborative programmes with common plans and purposes in the quest of assuring results from the efforts. The responses depicted a situation whereby (60%) (n=40) of the respondents confirmed the presence of such arrangements in the institutions. The responses were reflective of the fruition of the results from globalization and partnerships between overseas agencies and local institutions in the undertaking of research programs. The overseas agencies in turn gave back to the institutions in form of benevolence by way of supporting them with physical infrastructure geared towards enhancing their positions in terms of availing physical space to carry out the research. It can thus be interpreted to mean that the partnerships between the universities and international research agencies had ensured growth of physical infrastructure attributed to the collaborative

efforts between the partner agencies and the institutions. Not all institutions had benefited from similar arrangements and this can be alluded to the kind of academic programs carried out in the institutions and the extent to which the collaborative efforts had borne fruits.

Academic exchange programs were confirmed to have ensured support from partnering institutions. This was an indication of the fact that the collaborative practices with regard to support in the development of curricular and sharing similar courses with other institutions had seen to it that the universities benefited from the association. The responses depicted a situation whereby (77%) of the respondents (n=51) alluded to the capacity of similar exchanges to have enabled growth in the physical infrastructure provision. It was thus an indication that the institutions went beyond the mutualism in curricular, academic research work and availing space for the human resource component to engage in collaboration to the extent of having physical infrastructure provided in the association. The responses can thus be interpreted to mean that the association between the institutions and other partners in academic exchange programs facilitated the opening up of space to identify gaps in the infrastructure available to the benefits of the partner institutions when they were provided with more.

Linkage between industry and academia was confirmed to have availed the institutions with physical infrastructure. This was in the name of business incubation centers and the workshops provided. The practice was however evident from only 33% of the respondents (n=22). This was an indication that the linkages between the institutions and industry were not very entrenched to the level of very assured support. It could also have been a pointer to the practice

saliently gaining root in the institutions thus being in its formative stages. This was evidence of the fact that the industry leaders strived to ensure that the institutions benefited from the changes in technology and emerging trends thus the need for association in the course of developing and moulding the human resource component. The collaborative efforts between academia and industry had borne good fruits for the institutions by virtue of having them benefit from the infrastructure provided which entailed business incubation centers and workshops for industrial exposure. The responses were evidence of the fact that the sustained collaboration was an aspect which gave impetus to provision of infrastructure stemming from the ability of the industry players to spot gaps within the institutions which they needed to fill. It can thus be interpreted to mean that the institutions had identified the essence of collaborative efforts between them and industry as a measure of ensuring sustained infrastructure provision.

The study findings confirmed the position of Oanda & Jowi, (2013) who were of the view that universities are known to be effective repositories of knowledge and building of scholarly works. Engagement between research and academia has always been the norm when the entities carrying out research seek to tap from their resource. This makes public universities an attractive destination for institutions continuously engaging in research. The collaboration which is of mutual benefit owing to research institutions drawing on the expertise of the universities many times generates additional revenues for the institutions. The revenues may be used to fund the provision of infrastructure to allow carrying out the research programs thus growing physical facilities in place.

Bilateral government to government support programs were confirmed to have facilitated access to donor financing for infrastructure support in the institutions. The responses denoted the ability of the different line ministries to go out of their way and engage governments from friendly jurisdictions in the quest of assuring access to infrastructure in the institutions. This was a measure which denoted the ability to have good relations with other nations in the quest of enhancing individual capacities and ensuring growth in learning institutions in terms of physical infrastructure provision. The responses depicted a situation whereby (43%) (n=29) of the respondents confirmed that their institutions had benefited from similar arrangements. This was confirmation of the fact that the government had worked out programs geared towards enhancing mutual relations with partner countries to avail budgetary support in the wake of assuring the institutions of learning access to physical infrastructure. It can be interpreted to mean that the bilateral relations with partner countries had enhanced the ability to ensure that infrastructure was provided in the institutions of learning.

#### 4.6 Internal resources mobilization

Many public universities globally have realized the essence of collaboration with private foundations, philanthropy and forging networks for resource mobilization purposes. The emerging trend is motivated by the fact that universities are respected institutions in terms of knowledge dissemination (PWHC, 2012). The private foundations and trusts which have large acclaim always seek to ensure that the resources channeled out for public good are utilized in the right manner. They thus engage public universities as trusted custodians of their resources in the wake of reaching out to communities drawing benefits from them. Financing of physical infrastructure geared towards benefiting the student community and the wider population is a key attribute of the initiatives (Steinner, 2012). The study sought to find out the internal revenue mobilization practices used by the universities in the central region of the republic of Kenya.

Responses on the ability of the organizations to engage in enterprise were as shown in table 4.19

**Table 4.19 Provision for engaging in enterprise**

Responses	Frequency	Percentage
Yes	66	100
No	0	0
Total	66	100

All the respondents confirmed that the institutions had provision to engage in enterprise. The responses reflected enhanced capacities with regard to the ability of the institutions to carry out business as a measure of cutting

down on the operating expenditure and meeting short falls in government capitation. It can thus be interpreted to mean that all the universities in the central region had identified the need to engage in activities which assured them of alternative sources of revenue as opposed to relying on the traditional streams which are government financing and fees paid by the students.

The study findings identified with the position of (MacDonald, 2013) who deemed the commercial enterprises run by the public universities as having the capacity to support them with the additional revenues generated. This ensures that they always get to have capital at hand which can fund the recurrent expenditure and ongoing expansion programs. Known test cases of the module 2 programs and their effects in terms of turning around the fortunes of public institutions cannot be gain said. They were very instrumental in ensuring non disruption of programs at the advent of SAP's. They assured generation of additional revenues when the universities were faced with the reality of dwindling donor support and grants from government. This was a measure which assured them sustained new revenue streams (Mutiga, 2013).

#### **4.6.1 Particular enterprise activities that the institutions engaged in**

The responses depicted a situation whereby all the respondents confirmed the predominant business activity carried out to have been the undertaking of module two programmes by the universities. This was evidence of the fact that the universities had spotted a gap in the numbers of students who could not be absorbed in the regular academic programs in the intake by the central universities placement agency. This was an indication that the inadequacy of slots in the academic programs was a factor which disenfranchised many students to the extent of having them miss out and the

universities had bridged the gap by providing opportunities in the module two programmes at a higher cost from a commercial perspective. The other forms of enterprise activities carried out were the provision of products for sale from the production unit of the institutions to generate additional revenue and hiring out of equipment and university facilities. The responses depicted a situation whereby the universities had many alternatives with regard to the activities carried out geared towards ensuring the generation of income. It can be interpreted to mean that the institutions undertook enterprise activities from a multi-faceted approach which assured them different streams from which the revenues were generated.

The research findings identified with studies carried out in Kenya by Mboroki, (2012) which showed that social development was a factor which had given impetus to the growth of the higher education sector. The growing middle class which had no inhibitions with regard to taking up module 2 programs in the public universities had greatly raised the revenue levels. This had positively affected the capacity of the institutions to access funds to expand their physical infrastructure accruing from the revenues generated. The study will sought to find out how the internal revenues influence development of physical facilities in public universities in the study area.

The study findings further confirmed the position of Oanda & Jowi, (2013) who were of the view that universities are known to be effective repositories of knowledge and building of scholarly works. Engagement between research and academia has always been the norm when the entities carrying out research seek to tap from their resource. This makes public universities an attractive destination for institutions continuously engaging in



research. The collaboration which is of mutual benefit owing to research institutions drawing on the expertise of the universities many times generates additional revenues for the institutions. The revenues may be used to fund the provision of infrastructure to allow carrying out the research programs thus growing physical facilities in place.

**Table 4.20 Impact of internal resources on the ability to ensure infrastructure provision**

Responses	Frequency	Percentage
to a high degree	51	77.3
to a fair degree	11	16.7
to a low degree	4	6.1
Total	66	100.0

The respondents appreciated the capacity of the internal resources mobilization with regard to the assurance of infrastructure facilities provision. This was evidenced in the responses provided in table 4.20 whereby (77.3%) (n=51) highly appreciated the capacity of the internal resources mobilization activities with regard to their ability to impact on physical infrastructure provision. The responses were an indication that the activities carried out with an aim of generating revenue for the institutions played a very significant role in the availment of funds to assure physical infrastructure facilities provision. It can be interpreted to mean that the activities undertaken by the universities were a good source of revenue and were in sync with the demands that the institutions had with regard to physical facilities.

The study findings confirmed the position taken by Sewe, (2014) who was of the view that diversification into new alternative income generating activities as opposed to the traditional mainstays in the lines of knowledge generation has also been an avenue which many public universities have tapped into Presence of production units in the lines of engineering, food and beverage production, information technology and related spheres has seen gradual growth of revenues assuring the institutions funds for physical facilities expansion. This has also served the institutions well by way of providing avenues for practical exposure to the students undertaking the academic programs. The study sought find out the internal revenue generation activities carried out and how they affect the development of infrastructure (Walaba, 2010).

**Table 4.21 Lickert on internal resources mobilization and infrastructure development**

		provision for engaging in enterprises	Total
		Yes	
institution has an enterprise division charged with the responsibility	Disagree	2	2
	Undecided	4	4
	Agree	41	41
	strongly agree	19	19
Total		66	66
module two funds paid by self-sponsored students	Strongly disagree	2	2
	Disagree	9	9
	Undecided	21	21
	agree	23	23
Total		66	66
items produced by the students in their practical lessons	Strongly agree	11	11
	Strongly disagree	13	13
	Disagree	31	31
	Undecided	17	17
	agree	2	2
Total		66	66
hiring institutions facilities provides funds	Strongly disagree	4	4
	Disagree	14	14
	Undecided	3	3
	Agree	28	28
	Strongly agree	17	17
Total			
institution farms are used to fund the growth of infrastructure	Strongly disagree	10	10
	Disagree	19	19
	Undecided	5	5
	Agree	13	13
	Strongly agree	19	19
Total		66	66

Presence of enterprise divisions charged with the responsibility of carrying out business activities geared towards raising funds for infrastructure

development were confirmed by most of the respondents(91%) (n=60). The responses depicted a situation whereby the practice of seeking out alternative financing from internal business activities owing to shortfalls in government funds was highly entrenched. This was confirmation that the institutions had realized the essence of innovating on their own as a measure of sustained infrastructure facilities provision as opposed to over reliance on government support. The practice of engaging in commercial activities was also an indication of the extent to which the institutions had put into use the human resource component working within them with regard to engaging in practical enterprise activities as opposed to the theoretical and abstract approach.

This was an indication that the commercial enterprises not only generated funds for infrastructure development and internal growth activities but also ensured practical exposure for the students and members of the institutions administrative and teaching departments. It can be interpreted to mean that the enterprise activities carried out by the institutions played a significant role in reducing the budgetary deficits occasioned to the universities and enhanced their capacities with regard to physical infrastructure provision.

The module two funds paid by the self sponsored students were also confirmed to have been used by the institutions to ensure infrastructure growth. This was an indication that the institutions had identified the demand for academic programs by students who merit but did not get opportunities in the regular admission as an alternative income generating activity capable to bridge shortfalls in infrastructure financing. The responses confirmed the ability of the institutions to spot income generating activities that they could comfortably carry out from the core obligation and mandate which is knowledge

dissemination. The responses were confirmation that the institutions comfortably exploited the internal facilities in terms of the human resource component and the lecture halls to engage in commercial activity with an essence of availing funds to ensure optimal infrastructure provision. This was confirmed by (51%)(n=34) of the respondents thus indicating that the practice was ingrained and carried out by the institutions as a measure of ensuring that they provided the requisite infrastructure.

The practice of having items produced by the students and sold to meet the provisions for required infrastructure was however dissented to by most of the respondents (67%) (n=44). This was an indication that despite undertaking production activities in the institutions the amounts of monies generated was not adequate to sustainably have an effect on the required infrastructural provisions in the institutions. This was an indication that the activities carried out in the practical lessons by students geared towards enhancing their skills played a very insignificant role with regard to infrastructural facilities provision. It can be interpreted to mean that the institutions could not rely on the materials produced by students during the practical lessons to fund their infrastructure support programmes owing to the inadequacy of the initiative to generate adequate financial resources.

Hiring of the institutions facilities was confirmed to be a practice that the universities exploited with an aim of providing alternative funds for infrastructure development. The responses were an indication that the universities had spotted specific niches which required special facilities and expertise that only the universities had capacity to comfortably provide. This assured them of the ability to exploit the opportunity and meet the demands

placed on them by the society with regards to meeting their pertinent needs in return for the monies paid for the services. This played a significant role with regard to the ability to raise finances for the institutions and on the other hand meet the communities' needs with regards to service provision. The responses were an indication that the universities had cut out niches for themselves in the communities around which they were situated as pertains to having specific facilities which were only identified with them. The responses reflected evidence from 68% of the respondents (n=45) affirming that service provision by way of hiring out facilities by the universities was a sure way of raising sustainable revenue enough to warrant the availability of funds to see to it that new physical facilities were provided. It can be interpreted to mean that the institutions had strived to ensure that they provided the local communities with services that they required in the name of hiring out facilities which in turn generated income for their expansion programmes in terms of physical facilities provision.

Proceeds from the institutions farms were confirmed to have been an avenue exploited as a measure of ensuring physical facilities provision. The responses from 48% of the respondents (n=32) showed that the practice was generally approved and embraced by the institutions. This was a factor which forced them to carry out the agricultural activities as a measure of subsidizing their internal costs in the wake of farm produce purchase and at the same time generate surplus revenue to ensure that the immediate needs of the universities were met. The responses denoted the ability of the universities to identify and discern the capacity of agricultural production to serve the institutions in the wake of meeting fresh and dry produce needs and at the same time generate

surplus revenue to fund the physical infrastructure expansion programmes. It can be interpreted to mean that the institutions had identified agricultural production as a veritable avenue from which they could generate revenues and effectively meet their infrastructure demands.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter gives a summary of the findings, conclusions and recommendations drawn from the findings in relation to the governance practices by university management influencing infrastructure development in public universities in central Kenya. The objectives that guided the study were: adequacy of funds, policies and regulations, donor support and internal resources on the development of infrastructure in public universities.

#### 5.2 Summary of findings:

The study employed a descriptive survey design to find out the governance practices by university management influencing infrastructure development in public universities in central region of the republic of Kenya. The objectives that guided the study were: adequacy of funds, policies and regulations, donor support and internal resources on the development of infrastructure in public universities. The target population of the study was the six public universities in the central region of the republic of Kenya which are Kenyatta University, Jomo Kenyatta University of Agriculture and Technology, Dedan Kimathi University, Karatina University, Murang'a University of Technology and Kirinyaga University.

The census sampling method was used for sampling the vice chancellors and deputy vice chancellors of finance who are directly involved in the planning issues which entail the development of infrastructure in the public universities. The study used questionnaires as the instruments for the study and they were administered on the administrative personnel. The questionnaires were



preferred because they could serve many respondents; they can be self-administered, are anonymous and can be standardized and ease data analysis procedures.

Permission to conduct the research was sought from the National Commission of Science, Research and Innovation. The researcher thereafter visited the respective counties of Kiambu, Nyeri, Murang'a and Kirinyaga and produced the introductory letter before visiting the target institutions to seek out the respondents. The researcher made prior arrangements with the institutions before questionnaire administration. After all the data had been collected, data cleaning followed for the purposes of identifying any incomplete, inaccurate or unreasonable data

Data analysis involved both quantitative and qualitative procedures. Quantitative data analysis entailed descriptive and inferential statistics. Qualitative data was analyzed by way of understanding the meaning of the information divulged by the respondents. The researcher sought the consent of the respondents before administering the research instruments to them. The researcher also assured the respondents of utmost confidentiality as regards their identities.

The summary of findings was as guided by the objectives of the study:

Most of the respondents did not consider their institutions as having adequate funds enough to meet all the infrastructure requirements. Most of the universities had evident cases of failure to meet infrastructure demands owing to inadequacy of funds. This reflected budgetary constraints and the situations

of deficits occasioning failure to rightfully appropriate resources for infrastructure development at the expense of other programs.

There was confirmation that the universities sought out partners to engage in development support via the premise of public private partnerships whereby the private entities put up infrastructure and recovered the cost from the institutions over a period of time. Financing from financial institutions was also an alternative exploited by the universities.

Most of the institutions had put in place policies geared towards ensuring infrastructural development. This was enabling resource allocation and activities with an aim of ensuring that the infrastructure was in place. The policies guiding the provisions for universities infrastructure development were largely drawn from the specifications provided for by the Commission for University Education. The policy provisions as guided by the Universities Act, 2012 stipulate the requirements for infrastructure before the setting up of universities and the requisites before introducing new programmes. This entails adequate space for lecture halls, laboratories and related infrastructure in place for the delivery of the academic programs. The right sizes of the facilities with regards to student population and the standard requirement also came out as factors guiding and defining the policies guiding the provision of infrastructure in the institutions.

Most of the institutions had accessed donor support for infrastructure provision. The institutions had benefited in terms of having machinery for practical exposure availed and the physical infrastructure to hold the machinery provided. The partner agencies went out of their way to ensure that even in the

event of providing machinery for academic processes enhancement they put up physical infrastructure to hold it.

Most of the respondents highly appreciated the ability of the donor support to impact on infrastructure development in the institutions. Activities carried out by donors within the institutions had gained wide acceptance by the membership to the extent of having them highly appreciated with regard to the capacity to meet stakeholder expectation.

All the respondents confirmed that the institutions had provision to engage in enterprise. This reflected enhanced capacities with regard to the ability of the institutions to carry out business as a measure of cutting down on the operating expenditure and meeting short falls in government capitation. The predominant business activity carried out was undertaking of module two programmes by the universities. The other forms of enterprise activities carried out were the provision of products for sale from the production units of the institutions to generate additional revenue and hiring out of equipment and university facilities. Internal resources mobilization assured of infrastructure facilities provision.

### **5.3 Conclusions of the study**

The study drew the following conclusions:

The premise of the universities having access to adequate funds to assure all the requisite infrastructure was in place was not tenable. Despite the different needs that the universities had in terms of infrastructure requirements, access to financial resources attributed to limited funds was a factor limiting their growth.

The availability of government grants to assure infrastructural facilities demands were readily met was not assured. Despite the public universities heavily relying on government support for infrastructural facilities provision the funds were not adequate. Provision for grants specific for infrastructural facilities development was not tenable and the fees paid by the students to comfortably meet all the infrastructure obligations in the universities was not feasible.

The provision for having in place policies stipulating that infrastructure has to be in place before setting up academic programs was confirmed. The institutions had strived to ensure that the requisite infrastructure was always a precursor to the setting up of academic programs. The student population in growth was in most instances not commensurate to the development of the infrastructure in terms of upgrade.

Capacity of the institutions to receive support for infrastructure development from donor agencies was evident from mutual relations which ensured availing donor support for infrastructure facilities provision. Support from research collaboration had ensured growth of infrastructure in the institutions and the universities partnered with other research agencies to carry out collaborative programmes with common plans and purposes in the quest of assuring results from the efforts. Bilateral government to government support programs had facilitated access to donor financing for infrastructure support in the institutions.

Presence of enterprise divisions charged with the responsibility of carrying out business activities geared towards raising funds for infrastructure

development was evident in the universities. The module two funds paid by the self sponsored students were also used by the institutions to ensure infrastructure growth. The institutions had identified the demand for academic programs by students who merit but did not get opportunities in the regular admission as an alternative income generating activity capable to bridge shortfalls in infrastructure financing.

Hiring of the institutions facilities was a practice that the universities exploited with an aim of providing alternative funds for infrastructure development. The universities had spotted specific niches which required special facilities and expertise that only the universities had capacity to comfortably provide assuring them of the ability to exploit the opportunity and meet the demands placed on them by the society with regards to meeting their pertinent needs in return for the monies paid for the services to fund infrastructure provision.

#### **5.4 Recommendations of the study**

The study made the following recommendations:-

The study recommends that universities should go out of their way to ensure that they access the requisite financial resources necessary to guarantee them adequate physical infrastructure provisions. The management boards and university councils should ensure that they innovate with regard to the employment of new approaches for financing provisions. The exploitation of public private partnerships based on models favourable to the institutions and the partnering private agencies should be crafted. Provisions to increase the

government capitation for infrastructure facilities in the universities should equally be made.

The study recommended that universities should ensure that they provide the requisite infrastructure as a pre-condition for setting up any new academic programs from internal policy provisions. This will ensure that the students do not suffer any risk of failure to undertake academic programme in an ideal environment owing to the shortage of infrastructural provisions. Provisions for increased student population should always be matched with the requisite infrastructure upgrade. This will minimize the occasion of risks attributed to lack of capacity in the institutions. Provisions should equally be made to ensure that the needs of the universities with regard to annual infrastructure demands are documented and future planning should always be based on the envisaged growth.

The universities should strive to ensure that they collaborate with development partners from other jurisdictions in the quest of seeing to it that they provide physical infrastructure. The collaboration maybe in form of academic research leading to mutualism between the universities and the agencies carrying out the research work to the extent of having them access financing for physical facilities provision. Activities geared towards enhancing the synergy between industry and academia should equally be carried out. This may foster enough goodwill to warrant the provision of infrastructure requisite to sustain the activities undertaken by both for the benefit of the institutions. Provisions for direct linkages with bilateral partners should equally be done. This may be by way enhancing partnership between the universities and

countries with pertinent interests in the institutions with a view of assuring them financing to grow their physical infrastructure.

The study equally recommends that the public universities should seek to harness their internal resources with a view of ensuring that they exploit them to the maximum and generate revenues which can be used to grow the physical infrastructure. Alternative revenues from the core mandates of the universities should be sought out. This can be by way of putting in place vibrant enterprise management programs to ensure that the businesses run by the institutions are modeled in the required manner and profits maximization should be the driving factor behind the businesses setup. Statutory provisions should equally be put in place to cushion the universities from the stringent procurement regulations which force them to rely on external contractors to put up building and other physical infrastructure even when they have the capacity. This may serve as a cost cutting measure and encourage the universities to put up more buildings at a lesser cost.

#### **5.5 Suggestion for further studies**

The study suggests that similar research with a bigger scope like all the universities nationally should be carried out to confirm whether the situation in the six universities identifies with others nationally.

The study equally suggests that research on corporate governance practices affecting infrastructure development in public secondary schools. This is with a view of confirming the pertinent challenges faced by the secondary schools and the extent to which the circumstances in the secondary schools identify with that of the universities.

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**APPENDIX 1: LETTER OF TRANSMITAL**

Tabby Wothaya Gichohi  
P. O. BOX 762209-00508

To whom it may concern,

Dear Sir/ Madam

**REF: REQUEST FOR RESEARCH INFORMATION**

I am a student undertaking a degree in Master of Education in Corporate Governance in the University of Nairobi. I am carrying out research on **“Factors Influencing Infrastructure Development in Public Universities in Central Kenya”**. I kindly request you to allow me to carry out the study in your institution. The identity of the respondents will be treated in confidence and the information gathered is for academic work only.

Regards.

Tabby Wothaya Gichohi

**APPENDIX 2: QUESTIONNIRE FOR UNIVERSITY ADMINISTRATORS**

The study seeks to find out the factors affecting development of infrastructure in public universities in the central region of the republic of Kenya.

**Section A: Background Information**

1. How long have you served as an administrator in the current university?

Less than 1 year ( )

1-5 years ( )

6-10 years ( )

Any other \_\_\_\_\_

2. Does the university have provisions for infrastructure development?

Yes ( ) No ( )

Kindly indicate the provisions in place

\_\_\_\_\_

3. What specific infrastructure has been put in place in the past two years?

Kindly enumerate,

\_\_\_\_\_

**Section B: Adequacy of funds and infrastructure development**

4. Does the university have adequate funds to meet all its infrastructure requirements?

Yes ( ) No ( )

5. Have there been cases of failure to meet infrastructure demands owing to inadequacy of funds

Yes ( ) No ( )

6. How has the university mitigated the situation of funds inadequacy in development of infrastructure? Kindly explain \_\_\_\_\_

7. State your position as pertains to adequacy of funds and infrastructure development in public universities:

SA – Strongly Agree                      A – Agree                      U                      –  
 Undecided  
 DA – Disagree                      SDA – Strongly Disagree

	SA	A	U	DA	SDA
Our university has access to adequate funds to provide all the required infrastructure	5	4	3	2	1
The university council has power to seek financing from banks	5	4	3	2	1
Government grants are readily available to fund the infrastructure requirements	5	4	3	2	1
The fees paid by the students is enough to meet the infrastructure obligations	5	4	3	2	1
Provisions for raising capital from the local community through funds drives enables infrastructure development	5	4	3	2	1

**Section C: Policies and regulations and infrastructure development**

8. Are their policies and regulations guiding infrastructure development in your institution?

Yes ( ) No ( )

9. Are there adequate policies to ensure sustainable infrastructure provision in your institution?

To a larger extent ( ) To a great extent ( ) To a low extent ( )

10. Kindly indicate the specific policies in place?

---

11. Kindly state your position as pertains to policy and regulations and their influence on infrastructure development in public universities:

SA – Strongly Agree	A – Agree	U	–		
Undecided					
DA – Disagree	SDA – Strongly Disagree				
	SA	A	U	DA	SDA
Our institution has a policy of putting up infrastructure before starting academic programs	5	4	3	2	1
All the increases in student numbers is matched with growth in infrastructure	5	4	3	2	1
Provisions are made for annual infrastructure needs review	5	4	3	2	1
The university council makes budgetary allocations for infrastructure upgrade on a needs basis	5	4	3	2	1
Regular provisions for repairs and maintenances ensures sustainable infrastructure provision	5	4	3	2	1

**Section D: Donor support and infrastructure development**

12. Has your institution had any donor support for infrastructure provision?  
 Yes ( ) No ( )

b) Kindly indicate the actual donor support availed\_\_\_\_\_

13. Has the donor support affected infrastructure provision in the institutions?  
 To a high degree ( ) To a fair degree ( ) To a low degree ( )

---

14. Kindly state your position as pertains to donor support and its influence on infrastructure development in public universities

	SA – Strongly Agree	A – Agree	U Undecided	–	
	DA – Disagree		SDA – Strongly Disagree		
	SA	A	U	DA	SDA
Our institution has received support for infrastructure development on a regular basis	5	4	3	2	1
Support from research collaboration has ensured growth of infrastructure	5	4	3	2	1
Academic exchange programs have ensured support from partnering institutions	5	4	3	2	1
Linkage between industry and academia has ensured construction of incubation centers and allied infrastructure	5	4	3	2	1
Bilateral government to government support programs have ensured access to financing for infrastructure provision	5	4	3	2	1

**Section E: Internal resources mobilization and infrastructure development**

15. Does your institution have provisions for engaging in enterprise?

Yes ( ) No ( )

16. Do the internal resources affect the ability to provide infrastructure provision?

To a high degree ( ) To a fair degree ( ) To a low degree ( )

b) What enterprise activities is your institution engaged in? Kindly explain

---

17. Kindly state your position as pertains to internal resources mobilization and its influence on infrastructure development in public universities

	SA – Strongly Agree	A – Agree	U Undecided	–	
	DA – Disagree	SDA – Strongly Disagree			
	SA	A	U	DA	SDA
Our institution has an enterprise division charged with the responsibility of carrying out business for raising funds for infrastructure	5	4	3	2	1
The module two funds paid by self sponsored students are used for infrastructure growth	5	4	3	2	1
The items produced by the students in their practical lessons are sold to raise finances for infrastructure	5	4	3	2	1
Hiring of the institutions facilities provides funds for infrastructure development	5	4	3	2	1
Proceeds from the institutions farms are used to fund the growth of infrastructure	5	4	3	2	1

17. Kindly explain how the infrastructure facilities in the universities can be improved on

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## APPENDIX 3: LETTER OF AUTHORIZATION



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349, 3310571, 2219420  
Fax: +254-20-318245, 318249  
Email: dg@nacosti.go.ke  
Website: www.nacosti.go.ke  
when replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref: No **NACOSTI/P/16/26107/14436**

Date:

**APPENDIX 2: RESEARCH AUTHORIZATION LETTER** <sup>7<sup>th</sup> November 2016</sup>  
Tabby Wothaya Gichohi  
University of Nairobi  
P.O. Box 30197-00100  
NAIROBI.

#### **RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on "*Governance practices by university managers influencing infrastructure development in public universities in Central Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Kiambu, Kirinyaga, Murang'a and Nyeri Counties** for the period ending **7<sup>th</sup> November, 2017.**

You are advised to report to **the Vice Chancellors of selected Universities, the County Commissioners and the County Directors of Education of the selected Counties** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

**BONIFACE WANYAMA  
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The Vice Chancellors  
Selected Universities.

The County Commissioners  
Selected Counties.

## APPENDIX 4: RESEARCH PERMIT

**THIS IS TO CERTIFY THAT:**

**MISS. TABBY WOTHAYA GICHOHI  
OF UNIVERSITY OF NAIROBI , 76220-508  
nairobi, has been permitted to conduct  
research in Kiambu , Kirinyaga ,  
Muranga , Nyeri Counties**

**on the topic: GOVERNANCE PRACTICES  
BY UNIVERSITY MANAGERS  
INFLUENCING INFRASTRUCTURE  
DEVELOPMENT IN PUBLIC UNIVERSITIES  
IN CENTRAL KENYA.**

**for the period ending:  
7th November, 2017**

**Applicant's  
Signature**

**Permit No : NACOSTI/P/16/26107/14436  
Date Of issue : 7th November, 2016  
Fee Received :Ksh 1000**



**Director General  
National Commission for Science,  
Technology & Innovation**

### CONDITIONS

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.**
- 2. Government Officer will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice**



**REPUBLIC OF KENYA**



**National Commission for Science  
Technology and Innovation**

**RESEARCH CLEARANCE  
PERMIT**

**Serial No.A**

**11647**

**CONDITIONS: see back page**