FACTORS INFLUENCING LEVELS OF RESEARCH FUNDING TO KENYAN PUBLIC UNIVERSITIES BY NON – GOVERNMENTAL AGENCIES

PRESENTED BY
LINDA JOSEPHINE ETYANG
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NOVEMBER 2008
DECLARATION

STUDENT’S DECLARATION

This project is my own original work and has not been presented for award of a degree in any other university.

Signature: [signature] Date: 04/12/2008

ETYANG, LINDA JOSEPHINE

SUPERVISOR’S APPROVAL

This is to certify that this research project has been submitted for consideration with my approval as the University supervisor.

Signature: [signature] Date: 5-12-08

FARIDA ABDUL

LECTURER, DEPARTMENT OF ACCOUNTING AND FINANCE

CHAIRMAN’S APPROVAL

This is to certify that this research project has been submitted for consideration with my approval as the Chairman of the Department.

Signature: [signature] Date: [signature]

MR J. MUTURI

CHAIRMAN, DEPARTMENT OF ACCOUNTING AND FINANCE.
DEDICATION

To my dear parents whose unfailing love and devotion have seen me this far.

"Epolo Edeke"
Firstly, I am indebted to my employer, JKUAT, for granting me permission to attend classes. I also appreciate the support I received from my colleagues in the Finance Department.

I am thankful to many people who helped me in various ways in the course of this study. I especially thank James Sewankambo, George Onyara, Dr George Orwa, Dr Wangenge Ouma, Dr Okelo Abonyo, and Dr Elijah Ateka who provided me with their time and useful insights that helped shape this work. In the same vein, I wish to thank all my study respondents for volunteering their time and offering me useful information.

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I wish to thank my many friends especially Kanyua Muriuki and Tony Gitahi. I will forever be grateful for their support and encouragement to this day.

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Eyalama Noi!
ABSTRACT

This study explores the factors that determine the extent or levels of funding by non-governmental agencies towards research activities in public universities in Kenya. The vision, mission and core values of many a university demonstrate the importance placed upon research activities within it (the university). Research has increasingly been the “indicator” of excellence of any university. We must appreciate however, that research involvement is very costly and therefore most universities are unable to effectively conduct them without some form of external assistance to supplement the funds that they receive from the government. It is for this reason that universities identify external donors who assist them financially or otherwise to conduct the research.

To address this problem of research funding, this study examines the extent to which various factors influence the levels of grant funding to Kenyan public universities by non-governmental agencies. The study integrated both qualitative and quantitative methods. The approach was descriptive which was considered the most appropriate as it was able to explain the various factors. The study was conducted on a sample size of thirty seven randomly selected donor funding institutions where the target populations were the officers in – charge of research funds disbursement. Statistical Package for Social Sciences (SPSS) and Principal Components Analysis were used to analyse the data after which the report was compiled.

The results derived from the study show that various factors influence research funding to universities, but each does to varying degrees. The most influential factor was the research meeting the donors’ overall objective followed by universities submitting acceptable proposals. These are very critical to donor funding.

The research established a basis for further research on donor funding. A similar study may be conducted in future, or in a different organization, for example private universities and the results compared. Areas could be on the adequacy of donor funding, or in cases of insufficient funding the subsequent implications that are likely to be blamed on funding scarcity.
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LIST OF ACRONYMS

AAU: Association of African Universities
EU: Egerton University
H₀: Null Hypothesis
IPR: Intellectual Property Rights
IMF: International Monetary Fund
JKUAT: Jomo Kenyatta University of Agriculture and Technology
Kshs: Kenya Shillings
KU: Kenyatta University
MSU: Maseno University
MMUST: Masinde Muliro University of Science and Technology
MU: Moi University
OECD: Organisation for Economic Cooperation and Development
PCA: Principal Components Analysis
SPSS: Statistical Package for Social Sciences
UDSM: University of Dar es Salaam
UNESCO: United Nations Educational, Social and Cultural Organisation
UoN: University of Nairobi
USA: United States of America

$X^2_{\text{CALCULATED}}$: Calculated Chi-Square

$X^2_{\text{TABULATED}}$: Tabulated Chi-Square
CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1.0 Background of the Study

The eminence of a university is based on the ability of its Research and Development to generate new ideas while partaking in the process of transforming the society. University research is a vital building block of any nation's research and development enterprise. It increases the body of theoretical knowledge as well as its application to practical problems and thus its contribution to society. Research, by definition, is creative work undertaken in a systematic way to increase the stock of scientific and technological knowledge and to use the stock of knowledge to devise new applications. This is what makes an institution of higher learning a university. It is indispensable if teaching is to remain alive and inspiring. Only the possibility of conducting research will attract high-level professors, and research gives the university international recognition and repute. Research activities therefore, are evidently one of the core and most vital functions of universities across the globe. In fact one of the most crucial yard sticks of measuring university performance is its involvement in research.

The society has entrusted to the university immense responsibilities in the common endeavor of human development – social, economic, technical and cultural advancement and in responding to major planetary problems such as: preservation of the environment, eradication of poverty violence and social exclusion. Some of these responsibilities include adding (through research) to man’s better understanding of himself and the world
in which he lives. Governments increasingly turn to universities for solutions to pressing problems, from pest controls to tools for macro-economic management. Firms and industries also turn to universities for the cutting-edge knowledge needed for new patents, products and services. To meet their varied obligations to society, universities have to go beyond their traditional teaching functions and become established research institutions in their own right. Universities research efforts therefore are essential in helping to solve some of toughest problems facing the country and the world – everything from improving the water we drink and the air we breathe to life-saving advances in medicine and amazing technologies that help connect people, places and things around the globe. The public rightly expects universities to make a difference through its wealth of knowledge, its resources for analysis and research, and its capacity for innovation. This is the hallmark of the university.

1.1.1 Funding of University Research

The future of research and, thus, the scale to which a university can contribute to the advancement of higher learning, depends on the amount of financial resources available to it. Research is very costly, and the more sophisticated the research projects are, the higher the costs, especially in science fields. This creates a financial problem all over the world, especially for private universities who cannot readily rely on the government budget. Universities usually face these problems when they develop from the undergraduate to the graduate level. With the introduction of graduate training, research is no longer a hobby of the professor, but an integral part of the activities of the university because graduate-training is training in, and, by research. Governments and governmental
institutions partly step in and contribute to the research funds, perhaps by special contracts by means of which they tap the resources of equipment and expertise to get part of their research requirement done. Globally, but with some exceptions, the proportion of public or governmental funding in the overall budgets of universities (in real terms) continues to drop (Slaughter & Leslie, 1997). Universities across the globe are thus faced by what Johnstone (2001) describes as creeping austerity; a slow but unrelenting worsening of the financial condition of most universities and other institutions of higher education, particularly as they are dependent on governmental, or tax-generated revenue. Governmental funding is not enough to sustain public universities based on their submitted budgets and the ministry allocations as seen in Table 1.1.

Table 1.1: Jomo Kenyatta University of Agriculture and Technology’s Budget Submissions, Government Allocations and Shortfalls, 1998 – 2005 (Million Kshs)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>BUDGET SUBMISSION</th>
<th>GOVERNMENTAL ALLOCATION</th>
<th>SHORTFALL</th>
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</thead>
<tbody>
<tr>
<td>1998/1999</td>
<td>498.40</td>
<td>267.66</td>
<td>230.74</td>
</tr>
<tr>
<td>1999/2000</td>
<td>562.04</td>
<td>292.00</td>
<td>269.68</td>
</tr>
<tr>
<td>2000/2001</td>
<td>460.37</td>
<td>358.27</td>
<td>102.10</td>
</tr>
<tr>
<td>2001/2002</td>
<td>801.00</td>
<td>412.93</td>
<td>388.53</td>
</tr>
<tr>
<td>2002/2003</td>
<td>856.24</td>
<td>546.39</td>
<td>309.85</td>
</tr>
<tr>
<td>2003/2004</td>
<td>940.30</td>
<td>555.08</td>
<td>385.22</td>
</tr>
<tr>
<td>2004/2005</td>
<td>814.00</td>
<td>628.14</td>
<td>186.18</td>
</tr>
<tr>
<td>2005/2006</td>
<td>857.63</td>
<td>701.07</td>
<td>156.56</td>
</tr>
</tbody>
</table>

Source: JKUAT Finance Department

In order to raise more research funds, universities are forced to source other alternative means of funding their research so that they can carry them out successfully. An example is a type of co-operation that is formed between universities and external donors which gives the donors the necessary control over the use of their funds and the universities the
necessary freedom within a frame-work agreed upon the research contract. Kenyan public universities too have been involved in this sourcing of external donor funding and through this they have been able to secure grants for research funding to varied degrees (see Tables 1.2, 1.3 and 1.4).

From the foregoing, it can be seen that higher education, and thus university research has become increasingly driven to engage in market-oriented behaviours and many of the specific market-oriented activities involve university research partnerships with private industry as well as source for funds from external donors. This engaging in market-oriented behaviours which include specific market-oriented activities has aided public universities to generate some revenue to supplement governmental research allocations. This phenomenon, identified as "academic capitalism" by Slaughter & Leslie, 1997) started in the 1980s as markets became increasingly globalized and funding to postsecondary education continued to decrease as faculty and universities moved towards greater participation in post-industrial knowledge markets (Slaughter & Leslie, 1997) and as competition for research federal funding became increasingly intensified within the higher education arena.

An analysis by Riechi (2003), shows that the funding of Kenya’s public higher education in real terms since 1986/87 through 1996/97 has been increasingly inadequate. From a high real per capita expenditure of 3.7 billion in 1986/87, the allocations continuously plummeted, reaching a depressing low of 0.10 billion in 1993/94 (Riechi, 2003).
### Table 1.2: External Research Grants to UoN, 2002/2003 – 2006/2007 (Kshs)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FUNDING</th>
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<tr>
<td>2002/2003</td>
<td>304,290,241.00</td>
</tr>
<tr>
<td>2003/2004</td>
<td>393,740,984.00</td>
</tr>
<tr>
<td>2004/2005</td>
<td>342,686,330.00</td>
</tr>
<tr>
<td>2005/2006</td>
<td>501,029,422.00</td>
</tr>
<tr>
<td>2006/2007</td>
<td>594,274,975.00</td>
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</tbody>
</table>

**Data Source:** University of Nairobi, Finance Department

### Table 1.3: External Research Grants to JKUAT, 2001/2002 – 2006/2007 (Kshs)

<table>
<thead>
<tr>
<th>YEAR</th>
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<tr>
<td>2001/2002</td>
<td>33,145,039.00</td>
</tr>
<tr>
<td>2002/2003</td>
<td>29,389,249.00</td>
</tr>
<tr>
<td>2003/2004</td>
<td>28,521,221.00</td>
</tr>
<tr>
<td>2004/2005</td>
<td>24,024,910.00</td>
</tr>
<tr>
<td>2005/2006</td>
<td>21,389,948.00</td>
</tr>
<tr>
<td>2006/2007</td>
<td>21,495,778.00</td>
</tr>
</tbody>
</table>

**Data Source:** JKUAT, Finance Department

### Table 1.4: External Research Grants to MSU, 1999/2000 – 2005/2006 (Kshs)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FUNDING</th>
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<tr>
<td>1999/2000</td>
<td>671,117.00</td>
</tr>
<tr>
<td>2000/2001</td>
<td>1,668,306.00</td>
</tr>
<tr>
<td>2001/2002</td>
<td>2,018,547.00</td>
</tr>
<tr>
<td>2002/2003</td>
<td>8,110,346.00</td>
</tr>
<tr>
<td>2003/2004</td>
<td>15,418,718.00</td>
</tr>
<tr>
<td>2004/2005</td>
<td>8,317,842.00</td>
</tr>
<tr>
<td>2005/2006</td>
<td>14,139,641.00</td>
</tr>
</tbody>
</table>

**Data Source:** MSU, Finance Department

It is important to note that the Kenyan government only recently set aside a research fund for universities. In 2005, the Kenyan government set aside Kshs. 20 million and in 2006, Kshs. 65 million to assist universities to undertake research on national development (Odhiambo, 2006).
The amounts set aside for university research by the Kenyan government are obviously inadequate, meaning that public universities have not significantly benefited from direct transfers of state funds for research. Many university researchers and scholars have over the years pleaded with governments for a substantial increase in the budgetary allocations set aside for research activities in the public universities. Cutbacks in state funding are among the many pressures and factors causing institutional vulnerability; and eliciting from public universities, responses for adaptation (Sporn, 1999). These changes present public universities with external environments to which they must adapt if they have to survive or remain successful. It is not foreseeable that governments may reverse the macro-economic policies that currently make it difficult for public universities to depend on government funding for research and development activities on a large scale. Not surprisingly, in the face of declining levels of public subsidies, some institutions have embarked on a range of adaptive, innovative and entrepreneurial activities to tap new sources of income for financial stability and overall institutional survival (Musisi & Muwanga, 2003).

Research funding generation has thus become an inescapable reality for public universities keen on mitigating declining funding from national governments. It is no longer possible or sustainable for governments to fully finance the ever-expanding higher education enterprise. Public funding can support high quality tertiary education only when the system is relatively small, which is no longer the case in Africa and the world over (Court, 1999).
1.2 Statement of the Problem

Research undertaking is costly. One of the ways public universities have been able to secure additional research funding besides governmental support is through grants from external non-governmental donors. These donors normally set aside funds in their budgets that go towards research funding in universities. Several factors influence these donors to grant the specific or actual amounts of research funding that they disburse. It is important to establish these factors for various reasons key among them to make universities secure the maximum levels of funding that these donors can grant them. This study therefore is keen to address the particular problem of what influences these non-governmental donors to grant the actual levels of research funding that they do, and not what they had budgeted for research funding. It seeks answers to why the gap exists, that is in the cases where they fund less than what they had set aside for research funding.

1.3 Objectives of the Study

General Objective

The general objective of the study was to investigate the factors that determine the levels of research funding by external donors to Kenyan public universities.

Specific Objectives

Specific objectives of the study were to determine:

1. The universities that these donors have been funding in the last five years
2. The respective amounts of funding disbursed to the universities
3. The amounts of funding that these donors had budgeted to fund
4. The main criteria for funding university research by the agencies.
1.4 Research Questions

Arising from the main research question, this study attempted to answer the following sub-questions:

1. What are the trends in the actual research funding allocations by non-governmental agencies to public universities in Kenya?

2. What are the trends in the provisions for allocations or budgets by non-governmental agencies to public universities in Kenya?

3. What funding frameworks and policies guide the levels of research funding by non-governmental agencies to public universities in Kenya?

1.5 Significance of the Study

The findings of this study are significant in that they provided detailed comparative and empirical data on actual research funding by non-governmental agencies, hence expanding existing knowledge and insights on research funding by external non-governmental agencies to public universities in Kenya. Again, it provides important comparative data on the levels of funding that these non-governmental institutions have over the years set aside or budgeted for university research and have been willing to fund, hence enhance knowledge to the public universities on this untapped resource. Additionally, the study provided critical empirical information that may help shape research funding policies and guidelines to public universities by non-governmental agencies hence increasing their knowledge. Lastly, it contributes to the understanding of the non-governmental agencies structures of research funding to public universities and hence provides universities with increased knowledge on ways and means of securing continued, new or even increased research funding.
1.6 Scope of the Study

This study confined itself to institutional conditions for granting the levels of funding to public universities. The study did not seek to interrogate other major issues, for instance, the adequacy of donor funding towards supporting research activities in public universities, the problems experienced by these agencies while granting research funding, or in cases of insufficient funding the subsequent implications that are likely to be blamed on funding scarcity. This is because it will not be possible to critically treat them within the scope of the present study. Such issues will, therefore, be left for future studies.
2.1 Introduction

The importance of university research has made the financing of this activity a key issue across the globe. Research funding in many universities the world over is sought after with zeal, determination and enthusiasm so as to be able to successfully accomplish this very important and vital role that universities perform. Governments usually fund research activities conducted in the universities but more often than not, the funding is inadequate thus necessitating a search for alternative ways to supplement those funds available to it. Studies have been done in an attempt to alleviate this problem that has crippled institutions of higher learning of this very vital role that they play. This chapter will look at some of the studies that have been done on various ways institutions of higher learning have tried to adapt to dwindling research resource funds from the government.

2.2 Theoretical Framework

Throughout its many years of existence, the university has managed to survive by adapting as needs must to political, economic, cultural, social and technological changes (Williams, 2003). As part of a larger societal environment, the relationship between universities and their environment has been changing depending on the trends and developments in society. These broad societal trends translate into a changing institutional environment for academic institutions with shifting demands (Sporn, 1999). Consequently, Vaira (2004) observed that universities have, as of necessity, to actively,
purposively and creatively relate themselves with the institutional environment and pressures. For many universities today, the need for adaptation has emerged, and urgently so, out of pressures related to resource constraints and the overall competitive context within which they operate. The proportion of public or governmental funding in the overall budgets of many universities continues to drop at a time when higher education is experiencing increasing enrolments (Musisi & Muwanga, 2003). This ironically, is happening at a time when higher education is considered critical for the advancement of a post-modern global society (Marginson & Considine, 2000). Many national governments have made it clear that it will no longer be possible for public universities to rely solely on the state for research or higher education funding. Consequently, universities have been challenged to source for alternative sources of funds. Considering that financial resources are critical to universities’ stability, and yet budgetary support from these institutions’ principal benefactors (governments) is steadily declining, theories that explain institutional or organisational responses or adaptation to the resultant imbalance are necessary. The reflections expressed in this section will form the basis of our further analysis of the responses of public universities to diminishing research financial aid by governments.

2.2.1 The Resource Dependence Theory

National governments were for a long time the single source of funding research activities in public universities in many countries. A new trend is now emerging where public universities are now partly dependent on other parties for their research financial resources. To understand this emerging shift in resource dependence by universities, from the government to other sources of revenue, Pfeffer & Salancik’s (1978) resource
dependence theory is used. The resource dependence theory’s central proposition is that organisational survival hinges on the ability to procure critical resources from the external environment. Consequently, organisations deprived of critical revenues will seek new resources. One central assumptions made by the resource dependence theory is that any organisation must be responsive in order to survive (Pfeffer & Salancik, 1978). When environments change, organizations can either change their activities or face the real prospect of not surviving (Pfeffer & Salancik, 1978).

In many African countries, resources for higher education, and hence research have steadily declined through the years. According to Teferra & Altbach (2004), the central reality for all African higher education systems at the beginning of the twenty-first century is in severe financial crisis. This crisis has invariably been ascribed to, inter alia, inflation, devaluation of the currency exchange rate, huge external debts, economic and political turmoil, inter-sectoral competition for public funds and the World Bank and IMF’s macro-economic principles of budget deficit reduction and restricted social spending (Banya & Elu, 2001). Even in African countries experiencing fewer of the above problems, their expenditure on higher education and hence research remains depressingly small as observed by Teferra & Altbach (2004). Consequently, many African universities have perpetually suffered serious resource constraints, and this has invariably drastically reduced research involvement by public universities.

Economic difficulties for most African countries first became critical in the late 1970s and accelerated after 1980, leaving most African economies in serious disarray as discussed in World Bank (1986) and World Bank (1988). Other than the poor performing
economies, the explosion in population growth leading to a dramatic and continuing
growth in student numbers added more pressure on the education sector (Ziderman &
Albrecht, 1995). This external environment made it difficult for many African
governments to continue large-scale funding of university education. The macroeconomic
environment has since worsened (World Bank, 1988), throwing many (higher) education
systems into a state of instability, such that unless institutions of higher learning move
away from heavy dependence on public funds, their own survival is threatened.

Like all living organisms, organisations seek stability. They dislike states of
disequilibrium or destabilization (Pfeffer & Salancik, 1978). Unstable environments
result in organisational turbulence. When resources are declining, organisational stability
is threatened and organisational vulnerability occurs. Under such circumstances
organisational efforts are directed at regaining stability, at removing the source of the
threat to the organisation. The key to organisational survival is the ability to acquire and
maintain resources (Pfeffer & Salancik, 1978). The overriding long-term organisational
goal is autonomy: removing dependence upon resource providers to assure continuing
stability and equilibrium. To achieve its goal of survival, a given organisation can take a
number of actions to reduce its dependence on others for resources. For the university, a
common strategy has been the diversification of sources of income, away from the
exchequer. Other actions taken to reduce dependence on ‘others’ by universities entail
substantive organisational change and associated changes in internal resource allocations
(reduction or closure of departments, expansion or creation of other departments,
establishment of interdisciplinary units); substantive change in the division of academic
labour with regard to research and teaching and the organisation of new administrative structures or the streamlining or redesign of old ones as discussed by Slaughter & Leslie (1997).

The resource dependence theory further mentions that there is a link between resource dependence and opportunity identification; that organisations deprived of critical resources will identify opportunities for remedying the situation (Pfeffer & Salancik, 1978). From this argument, the degree of state funding will influence the magnitude and direction of universities’ external aid sourcing and other reforms directed at reducing dependence or mitigating plummeting state support.

Another important aspect of the resource dependence theory that is critical for understanding institutional adaptive responses to declining resources is the question of institutional capacity. Navarro & Gallardo (2003), point out that the survival of the organisation and its ability to compete for its future rely upon its capacity to maintain a sustainable competitive advantage. Capacity is the very essence of strategy. Navarro & Gallardo (2003) further argue that when the environment is undergoing rapid changes, the organisation must have corresponding capabilities to survive. Prevailing ‘environmental’ conditions seem to suggest that making strategic decisions about adapting to the environment will almost become a way of life for public universities. Slaughter & Leslie (1997) predict that with greater globalisation of the political economy, state funding of university education and research will continue to decline, and, if the situation is not mitigated, it will cause acute institutional destabilisation in higher education systems. The resource dependence theory’s emphasis “on responding to some
discontinuity or lack of fit that arises between the organisation and its environment" as discussed by Cameron (1984), makes it necessary that this ‘environment’, to which the need for universities to overcome resource dependence on public sources is ascribable, be explored.

In summary thus, according to the resource dependence theory, organisations must engage in an exchange with the environment to acquire resources.

2.3 Main Review of Literature

As mentioned earlier, the importance of university research has made the financing of this activity a key issue across the globe. Governments partly fund research and development activities conducted in the universities but more often than not, the funding is inadequate thus necessitating a search for alternative ways to supplement those funds available to it.

To locate this study in context, three sets of relevant literature have been reviewed. These are:

(a) The state of Kenyan public universities as regards research, which provides an insight into the importance placed by them upon research activities. An understanding of the funding difficulties facing research activities in Kenyan universities is important in situating where these institutions are coming from as they seek to overcome research financial stress and emerge as hallmarks of excellence because of their involvement in research.

(b) The debate on funding research in public universities by the non governmental agencies. This will give a critical review of the major issue of funding higher
education and thus research in public universities. It will look at the significant shifts that have recently taken place in attitudes of governments, international agencies, and donors toward the financing of African higher education and as a result, research. Particular emphasis is put on literature emanating from the World Bank and scholars associated with it. This is primarily because of the singular influence the World Bank has had on financing policies of African higher education. This section will provide a historical background to the conundrum that financing African higher education has become.

(c) Mitigating resource dependence: experiences from elsewhere. This section interrogates existing related (empirical) studies on the subject. The focus is on the experiences of other institutions' adaptive responses to dwindling research resources.

2.3.1 The State of Kenyan Public Universities

Even though this study is primarily concerned with institutional factors of non-governmental agencies that determine the level of research funding to grant to public universities, it is critical that we understand the level of importance placed upon research activities by the public universities. It is argued that a clear understanding of the situation of research activities in Kenyan universities will allow a lucid and holistic analysis of this study's concern.

Research, by definition, is creative work undertaken in a systematic way to increase the stock of scientific and technological knowledge and to use the stock of knowledge to devise new applications. This is what makes an institution of higher learning a university.
It is indispensable if teaching is to remain alive and inspiring. Only the possibility of conducting research will attract high-level professors, and research gives the university international recognition and repute. Research activities therefore, are evidently one of the core and most vital functions of universities across the globe. In fact one of the most crucial yard sticks of measuring university performance is its involvement in research. Research thus has increasingly been the “indicator” of excellence of any university and its importance can not be under scored.

Kenya’s seven public universities, like other universities worldwide, esteem research activities very highly. For virtually all the institutions, their vision, mission and core values demonstrate the importance placed upon research activities within the university. These universities lay great emphasis on research as a core function that will continue to inform learning, teaching and service delivery at the universities as well as have a national influence and impact. However, there are numerous challenges hampering research activities at the universities, most prominent among them being insufficient funding. Other challenges include inadequate infrastructure for research and dissemination of research findings, lack of an Intellectual Property Rights (IPR) policy at the university level, lack of a comprehensive database on past research, and the dynamism in knowledge and skills in research methodologies.

As a result of poor research funding as earlier mentioned, claims have been made about serious deficiencies in quality. This decline (in quality) is manifested in diminished research output by the universities (AAU & World Bank, 1997). To address these challenges, virtually all Kenyan public universities have established a division, or in other
cases, a centre that deals exclusively with all research activities that it runs. These centres/divisions coordinate and run all research activities, as well as closely monitor all research related activities with the aim of entrenching and strengthening a culture of research and provision of consultancy services in their universities. They are also entrusted with the responsibility of ensuring the research is of high quality and has met the international standards. JKUAT, EU, MU, and MSU have fully-fledged divisions of Research, Production and Extension that are headed by Deputy Vice Chancellors. KU, MMUST and UoN have established centres for Research and Development that are headed by directors. The mandate of such divisions/centres is to spearhead the process of research, technology development and innovation in the university and to transfer existing knowledge, skills and technologies to the general public and industry to enhance production efficiency. Other responsibilities entrusted to these divisions/centres include to promote and co-ordinate relevant scientific research in the faculties of the universities, to source for funding for research activities from both local and international agencies and other external donors, to encourage interdisciplinary research between the faculties and departments of the university and to promote research collaboration with other universities and higher institutions of learning in Africa and beyond. Others are to monitor the quality and suitability of resource materials submitted for university publication, to assess and approve research proposals submitted for funding and to ensure that the resources allocated are used for the purposes for which they were intended.

As mentioned earlier, financial instability then is perhaps the greatest of the challenges facing research and development activities in Kenyan universities. From the literature, almost all public universities in Kenya suffer research under funding problems. Two
main features are common, first, is the acknowledgement that the unstable financial base undermines the very reason why these institutions were established and, secondly, a prescription of solutions for the financial difficulties (Ford Foundation, 2003). A very popular piece of advice for these universities has been that they should diversify their sources of research funding to other sources excluding the government. Seemingly, public universities have taken the ‘advice’ and are now trying to alleviate resource dependence difficulties by winning external finances.

The next section sheds light on the major debates on the financing of research and development activities. It is intended to show the central role the World Bank has played in influencing the financing of university research. This debate on funding university research brings to the fore the various pressures that have been brought to bear on financing policies of university research vis-à-vis responses that have been prescribed.

2.3.2 The Debate on Funding University Research

Significant shifts have recently taken place in attitudes of governments towards the financing of university education, and research and development activities in Africa and Kenya in particular. Optimism and growth in the 1960s and 1970s when budget allocations for education tended to rise, driven both by rising social demand and by belief in the economic benefits of investment in human capital, gave way in the 1980s to stagnant or declining budgets, as governments in many parts of the world grappled with political and economic crises, structural adjustment, and widespread poverty and unemployment (Woodhall, 2001). At the same time, many donors switched priorities and emphasis away from higher to primary education, partly as a result of arguments that
primary education was a more profitable social investment than higher education (Woodhall, 2001).

Research and development activities in Kenyan public universities have largely remained a victim of macroeconomic adjustments. Economic difficulties for most African countries started becoming severe in the late 1970s and accelerated after 1980, leaving most African economies in serious disarray (World Bank, 1986). Other than the poor performing economies, the explosion in population growth added more pressure on the education sector. This external environment created a situation of resource insufficiency for the education sector. Against this backdrop, the World Bank published a policy paper, World Bank (1988), which had major implications on the entire education sector, in sub-Saharan Africa (excluding South Africa). This particular policy paper departed from the perspective that education in sub-Saharan Africa was in crisis hence the need for major reforms. The point is made that governments cannot be expected to increase substantially the resources they devote to higher education and hence research. The paper further condemns the cost of higher education in sub-Saharan Africa as being needlessly high (World Bank, 1994). Many other scholars, most of them associated with the World Bank have subsequently echoed this particular thinking.

In a 1996 report to the President of the World Bank, the African Ministers of Finance listed the revitalization of African universities among the continent's critical developmental needs. The World Bank leadership was requested to marshal donor
community participation in a fully joint undertaking with African governments to address this and other regional shortcomings in institutional and human resource development.

Philanthropy (or sourcing from external donors) is the one of the most important policy recommendation (prescription) made by this policy paper to boost research funding by universities. African governments were called upon to “relieve the burden on public sources of financing by increasing the participation of philanthropists” (World Bank, 1998). To remedy this situation, the paper recommended more active participation from external donors in order to boost revenues that would be channelled towards research. As if to reinforce the recommendations of the 1988 policy paper, the World Bank produced another policy paper, World Bank (1994), which focused on the “main dimensions of the higher education (and hence research) crisis in developing countries”. Consistent with the bank’s earlier unfavourable inclination towards public investment in higher education in Africa, the paper makes the point that the extent of government involvement in higher education has far exceeded what is economically efficient (World Bank, 1994). According to this paper, higher education is a burden to public finance, and universities should adapt to a competitive market situation. Even though this paper recognizes that higher education investments are important for economic growth, the Bank still insists that investments in higher education have lower social rates of return than those in primary and secondary education. The paper finally declares that the main priority of the Bank will continue to be basic education (World Bank, 1994). Countries were thus called upon to adopt policy reforms that would boost their research and development funding in universities.
The foregoing review of the debate on financing higher education shows the shifts that have occurred in the financing of higher education (and hence research and development activities) in Africa. Because of declining economies, inter-sectoral competition for resources, arguments in favour of primary education and the coercive influence of the World Bank, among other factors, many African governments effected major reductions in the budgets of public universities (Saint, 1992).

The influence of the World Bank on the financing policies of higher education in most of the economically developing world is evidence of how globalisation is impacting on higher education. The World Bank, the International Monetary Fund (IMF) and other supra-national agencies like United Nations Educational, Social and Cultural Organisation (UNESCO) and the Organisation for Economic Cooperation and Development (OECD), acting as institutional carriers, have been pivotal in developing strategies for higher education policy, organisation and curricular structures (Vaira, 2004). The World Bank and the IMF have succeeded, through both coercive and normative pressures, to push (relatively poor) governments to adopt policies that favour shrinking of public expenditures and funding, and the trend towards more funding from external donors (World Bank, 1998).

The next section is a review of various studies on institutional adaptive responses to research resource scarcity in the context of globalisation. The review examines studies that cover Europe, Canada, America, Australia and Africa. The review gives an exposition of individual institutional responses is given. Broadly, the review shows a
marked similarity in the way universities located in broadly similar political economies adaptively respond to research resource scarcity.

2.3.3 Mitigating Resource Deficiencies: Experiences from Elsewhere

In this section, studies related to the present one are reviewed. The focus is on various institutions’ adaptive responses to research financial constraints. As will be shown in the review, institutions have been forced to engage in self-financing (as the preferred adaptive response) by almost similar conditions; principal among them being the reductions in government funding. This review will help link the present study to existing research on organisational adaptation by public universities. Severe research financial constraints facing universities have undoubtedly threatened the survival of these institutions. In a bid to adapt to the changing financial circumstances, institutions, formerly dependent on large-scale government funding, are now responding by seeking their own research funding.

We begin with studies done on universities in Europe. Clark (1998) studied how five universities in five European countries successfully embraced entrepreneurialism as a response to dwindling financial support from their respective governments. From his study, Clark (1998) developed five entrepreneurial pathways of university transformation, which he uses to frame the case study accounts. These entrepreneurial pathways, which Vaira (2004) describes as a recognisable pattern of organisational restructuring to cope with the changed institutional and task environment are a strengthened steering core, an expanded developmental periphery, a diversified funding base, a stimulated academic heartland and an integrated entrepreneurial culture. Clark’s
study shows how, over time, Warwick, Twente, Strathclyde, Chalmers and Joensuu successfully responded to declining governmental financial support by developing an earned-income portfolio. All the five universities registered success in patterns that followed the five pathways of transformation. They all reoriented their management structures to accommodate diversifying their sources of revenue. From Clark’s study, it is clear not all departments are able to generate substantial revenue from external sources. In all the universities, departments (science, engineering and business) closer to the market raised the highest revenue. Earned income has provided the funds for cross subsidy to academic departments and subjects that bring in little or no extra money but viewed as institutionally worthy of continuing support and enhancement. Clark’s (1998) uses the experiences of individual institutions to show how certain elements of transformation (adaptive responses) continuously recur. Each institution’s setting and historic character is seen as necessary for understanding whatever transformation has taken place or is in process. Each account includes what is significantly unique and peculiar and the role played by particular individuals.

In a study that covered USA, Canada, Australia and the United Kingdom, Slaughter & Leslie (1997), explains how the receding flow of public money to higher education and thus research, motivated restructuring in universities. Their study demonstrates that public universities have become increasingly driven to engage in market-oriented behaviours and many of the specific market-oriented activities involve university research partnerships with private industry. This phenomenon, identified as “academic capitalism” (Slaughter & Leslie, 1997) started in the 1980s as markets became increasingly globalized and funding to postsecondary education continued to decrease as
faculty and universities moved towards greater participation in post-industrial knowledge markets and as competition for research federal funding became increasingly intensified within the higher education arena (Newman & Courtier, 2001). Universities must compete in the public sector in order to make their areas of research viable financial entities. The increasing use of external aid is a crucial ripple effect of the growth of academic capitalism since it saves down-sizing universities millions and allows faculty more time to pursue their research. Reducing class sizes are yet another way to cut costs and elevate the needs of university administrators and industry-more research hours or networking time for faculty-over those of students.

Another study that focused on institutional adaptive responses to resource scarcity is the one conducted by Williams (1992). Williams’ study focused on the shifts in the financing of higher education in Britain from a state dependent binary system to a market oriented unitary system. A key objective of Williams’ study was to assess the effects of funding changes, in particular, the withdrawal of indiscriminate subsidy for students from overseas, and various government initiatives to encourage increases in funding from private sources. He reports on the effects of new funding sources and mechanisms on organisational behaviour and academic activities of universities, polytechnics and colleges. To optimise institutional responses to opportunities for income generation, Williams (1992) reports how British institutions of higher learning established offices charged with income generation and also effected changes in administrative functions. Changes in the internal resource allocation procedures were also carried out. They ranged from central control to control by operating units (departments).
Based on an empirical study of diverse adaptation mechanisms of six universities in America, Italy, Switzerland and Austria, Sporn (1999) developed several propositions for a theory of higher education adaptation. She focused on how the universities employed governance, management and leadership to adapt to different circumstances; declining public revenues being the main issue for the three American universities involved in the study, namely New York University, University of Michigan and University of California at Berkeley. Sporn (1999) argues that diversified funding is critical in enhancing adaptation to conditions of financial vulnerability. A diversified funding base decreases the vulnerability of institutions (Sporn, 1999). Universities being totally dependent on one source of income are less able to adapt proactively to environmental demands.

Based on review of literature, Fairweather (1988) reports on university-industry research linkages in USA, motivated by financial need on the part of universities. An important observation made by him is that the stature of academic institutions greatly contributes towards the formation of partnerships with industries and that industries put their money in areas of interest to them, especially technical fields. The converse side of this thesis is that less prestigious universities and those with greater emphasis on arts and humanities are not likely to attract support from industry. Further, even within prestigious universities, Clark (1998) and Slaughter & Leslie (1997) have argued that departments without direct relevance to industry are not likely to attract industry’s funding.

In Africa, external research financing by public universities as a response to reduced state funding is still relatively low. This is mainly due to the universities’ involvement in
research activities being low as compared to other universities across the globe. In a study that focused on issues confronting higher education, (and hence research) in Mozambique, Mário et al. (2003) reported, inter alia, on the financial difficulties public universities in Mozambique were experiencing. Public universities in Mozambique still heavily rely on the government and donors for funding. Limited research funding though has greatly reduced the universities in Mozambique involvement in research and publication activities.

In Tanzania, the major reforms that have taken place in the country’s higher education sub-sector are captured in a study by Mkude et al. (2003). The main focus of this study is the institutional reforms that have taken place at the University of Dar es Salaam (UDSM). An important development reported in this study is financial reform. Financial reform is reported as being concerned mainly with income generation through fee-paying students, commercialising service units, an income generation unit, and a university consultancy bureau. All these are aimed at increasing the university’s revenue base and thus can assist in funding of teaching and research activities. The Income Generation Unit promotes and coordinates income-generating activities for the university, mainly by attracting third parties for the commercial management of university assets, including land, office accommodation, hostels, conference, catering and secretarial services (Mkude et al., 2003). Mkude et al.’s study reveals the emergence of several practices that so far characterise the university’s responses to dwindling financial support from government and as such reduced funding for research and development activities. These include, inter alia, the emergence of departments and/or faculties developing closer ties with industry and therefore bringing in more money than others.
A study by Musisi & Muwanga (2003) looks at the financial reforms that have taken place at Makerere University (Uganda) between 1993 and 2003. The university’s involvement in income generation has been lauded for its apparent success (Musisi & Muwanga, 2003). This study is arguably one of the most comprehensive on university entrepreneurship in Africa. Musisi & Muwanga (2003) locate the financial reforms at Makerere in the broader national policies of liberalisation, privatisation and decentralisation in Uganda. Until 1991, Makerere University relied totally on government funding. A government shift of emphasis on primary education, since 1992, remarkably reduced government remittances to Makerere. The University had to look elsewhere for money and by 1999 over 60 percent of Makerere’s capital budget came from sources other than the government. Musisi & Muwanga (2003) report that Makerere raises her income through admission of full fee-paying students, donor funding, commercial units/business enterprises, and consultancy services. The study cites greater autonomy, leadership and the emergence of a new management and governance style, and the adoption of a market orientation as the pillars of Makerere’s success.

Unlike universities in Europe and USA (Slaughter & Leslie, 1997) have observed that where science departments raise more money than the others, Makerere earns more external revenue from the humanities. This is because there are absolute limits on the number of students that the sciences can accommodate. They do not have the facilities to expand student enrolment or mount evening courses in order to increase income generation (Musisi & Muwanga, 2003).
2.4 Summary and Gaps to be filled by the study

In summary, the reviewed studies reveal that research income generation as a response to declining capitation of public universities from public sources is in vogue globally. Universities across the globe are crippling with the dwindling government support and as a result they have been forced to source for alternative means to source for research and higher education funding. Comparing the various modes of research revenue generation between universities in America and Europe, and African ones, a dichotomy emerges: whereas universities in Europe and America have had this practise for quite some time now, it is a relatively new phenomenon and thus still relatively low in African universities, mainly as a result of involvement and participation. Another important observation is that the new paradigm has tremendously affected the life of academics. Because of the reduced state funding, universities are not able to achieve the desired levels of research and development activities. A diversified research funding base invariably features as the best way to mitigate resource dependence on any one source. Most public universities suffer research financial crisis mainly due to their over-reliance on the exchequer; hence becoming vulnerable to shifts in the financial priorities of governments, especially in periods of budget constraints and economic hardship. External funding base, therefore, creates more discretion and less vulnerability for universities. As a result, several universities across the globe have searched for research funding from external sources. In short, the reviewed studies show how public universities manage to survive by implementing other reforms. From the reviewed studies, adaptation comes in the form of making strategic choices to cope with external pressure. The reviewed literature also reveals a dearth of studies on research resource seeking by public
universities and emergent institutional behaviour, especially in African universities. It is thus hoped that this study will be able to adequately determine the various factors that influence the levels of grant funding given to public universities by external non-governmental agencies with the aim of boosting the active participation and involvement in research by these universities.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This study focuses on the levels of research funding obtained from external non-governmental donors as a result of plummeting financial support experienced by public universities in Kenya. The purpose of the study is thus to understand how these external non-governmental donors determine what level of financial aid to give to the public universities in Kenya with regard to research activities. It determines and attempts to explain the variability and similarities observed from the various factors that influence donors to fund research activities within and between the public universities. This chapter explains how the study was conducted so as to attain the intended objectives. Broadly, the chapter discusses the design of the study, the population that was studied, the sampling strategy, the data collection process and the instruments that were used to collect, analyze and interpret the collected data.

3.2 Research Design

This study employed both qualitative and quantitative methods. The quantitative methodology dealt with the numerical data relevant to the study while the qualitative methodology dealt with the non-numerical data. The approach of this study was descriptive in nature. This was considered the most appropriate method because it attempted to show and document the current conditions to describe what existed at the moment in the given context. It attempted to accurately identify and describe the various variables that determine the level of grant funding that is given to Kenyan public
universities by non governmental agencies in the last five years. It will thus be an empirical research based on the descriptive research method. This research was conducted on a sample size of thirty seven randomly selected funding institutions. Primary data was collected directly from the selected donor agencies through mailed questionnaires. A list of all the currently funding institutions was obtained from the seven public universities in Kenya. That formed the sampling frame from the study population.

3.3 Target Population

The study’s target population was all the external non - governmental research funding institutions to public universities. Focus was mainly on the management level, more specifically the Directors in charge of Research and Development and also the management staff. These were the respondents in this study because of their exposure to these activities. They are the officers that are mainly involved in the disbursement of research funds.

3.4 Sampling Design

A sampling procedure was employed to select those from whom data was to be collected. The study was based on a sampling frame drawn from the study population. The study population comprised of all those institutions that give funding to universities for various uses. The sampling frame comprised of all those institutions that specifically fund research activities to the seven Kenyan public universities. Simple random sampling was used to select the sample. The study respondents were based on thirty seven external non - governmental donors.

3.5 Data Collection

In this research, primary data was used. The data was collected using questionnaire
method. The questionnaires were directed to the directors’ in-charge of research and development activities of each institution. This is because of their exposure to such activities. The questionnaires were structured by the researcher herself.

3.6 Pilot Testing

A pilot test was conducted on 5 respondents to field test the reliability and validity of the questionnaire as a data gathering instrument. The results of the pilot test were used to revise the data gathering instrument.

3.7 Data Analysis

Upon completing data collection process, all research instruments were assembled and information organised ready for analysis. The questions in the questionnaire were defined into various variables for clarity, uniformity and adequacy in representing the research objective. The collected data was first edited to ensure consistency across respondents and to locate omissions. The data generated was keyed in Ms Excel software. The data was then exported on to SPSS version 15.0 software. Frequency and percentage tables were then generated. Tests for significance among the choices of each question were done using Chi square at 5% significance levels to test the null hypothesis of no significant difference between the responses in the variables. Where the computed chi-square was greater than the critical chi-square, the null hypothesis was rejected. On the other hand, where the computed chi-square was less than the critical chi-square, the null hypothesis was accepted. Inferences were thus drawn from these results and that was used in making a descriptive report and discussion of the research findings.
CHAPTER FOUR
DATA ANALYSIS AND PRESENTATION OF RESULTS

4.1 Introduction

This chapter provides a qualitative and quantitative analysis of the data derived from the responses documented in the questionnaire. Data were analysed using SPSS version 15.0 and the Principles Components Analysis tool.

Given that the study was to investigate the factors that determine the levels of research funding by non–governmental agencies to Kenyan public universities, the questionnaire was designed to have the main section in which these factors were captured (Section C). The rest of the questionnaire was designed to capture auxiliary information which the researcher has used to give additional information. All the data has been analysed according to the four specific objectives of the study.

4.2 Universities that Donors have been funding in the Last Five Years

The universities that the donors have been funding and the respective amounts is important knowledge. It helps to establish the trends in the research funding allocations by the non–governmental agencies to public universities in Kenya. The respondents were asked to identify the universities that they have been funding in the last five years and the respective amounts disbursed. The amounts disbursed to the seven universities were summed up and for each particular university, the research funding as a percentage of the total received for all the seven public universities obtained. The results for this are shown in Figure 4.1 below.
As can be seen in the figure above, one Kenyan university, UoN, so far receives the highest from donors in terms of research funding in the five years. UoN can thus be said to have attained a measure of success in as far as securing research funding as compared to the other six universities is concerned. This can be attributed to several factors chief among them being it was the first university to be established in Kenya and therefore it has a long standing record with several donors. It dates back to the colonial period, when the Royal Technical College of East Africa, the first Kenyan higher educational institution, was opened in Nairobi in 1956. In 1961, it was renamed the Royal College of Nairobi and turned into a university college. In 1963, when Kenya attained her independence, the Royal College became the University College of Nairobi. In 1970, the
University College of Nairobi, ceased to be a constituent college of the University of East Africa and became the University of Nairobi. It is currently the largest in Kenya with the highest number of schools and colleges where a lot of research is conducted. Of the seven public universities, UoN had by far the highest number of donors over the five years which explains its highest research funding as a percentage of the total received by all the seven universities. Although it is mandatory for every Kenyan public university to provide data on its finances, there is not a uniform way in which the data is presented i.e. in terms of grouping or categorising the various financial data. Individual universities group their financial data in their own way. UoN, because of its large number of research donors, has categorized them into two. The major donors (about 10 of them) are listed individually while the rest are summed up and a block figure given for them in their annual report.

The other six universities, Moi, KU, JKUAT, Egerton, MSU and MMUST follow UoN in terms of percentages of the total research funding received at between 4% and 15%. This is much lower than UoN’s. Several factors can be attributed to this, key among them being the number of researches being carried out by them being much less. Another factor could be the main courses offered in these universities. KU and MSU have fairly large Arts, Humanities and Social Sciences programmes and thus researches in these fields are very few as compared to UoN which has the highest number of science programs. It has the highest number of Pure and Natural Sciences, Applied Sciences and Medical related courses. In the financial years 2004/2005 and 2005/2006, these departments received a total of Kshs. 501,029,422 and Kshs. 594,274,975 respectively.
Science fields have numerous and continuous researches thus explaining the huge amounts allocated to them. JKWAT and Egerton also have numerous science and technology courses but their sizes and members of staff are much less than that of UoN's. MMUST's levels of funding are much less compared to the rest, the major reason perhaps being its fairly recent establishment. It was a constituent college of Moi until recently when it officially became a fully fledged university.

4.3 Amounts of Funding Donors had Projected to Fund.

The respective amount that donors had projected to fund to the Kenyan public universities in terms of research funding is important knowledge. It helps to establish the trends in the provisions for allocations or budgeted amounts by non-governmental agencies towards research funding to public universities in Kenya. These trends are useful knowledge because it helps universities to know the provisions that had been made for them and compare them to the actual research funding that they have received. The respondents were asked to provide the respective amounts that they had projected to fund in respect of research activities. The value of the amounts disbursed as a percentage of the total amount projected for all the seven public universities was obtained. The mean percentage scores for the 37 respondents then was calculated. The results for this are shown in Figure 4.2 below.

Figure 4.2 shows the mean scores of the actual research funding received as a percentage of the amount projected as from 2002/2003 through 2006/2007. As can be seen in the graph, research funds set aside for public universities in Kenya have not been fully disbursed. UoN has over the five year period received the highest amount of the projected
funds. It can thus be said to have attained a measure of success in as far as securing the maximum research funding as compared to the other six universities is concerned.

**Figure 4.2: Actual Research Funding to each of the Seven Kenyan Public Universities as a Percentage of the Projected Funding by Donors: (2002/2003 – 2006/2007)**

The trend is almost a replica of the trend illustrated in Figure 4.1 with UoN again having the greatest in allocations (67 -72 percent). Egerton received the lowest amount as a percentage of the total projected of 45 percent. This was in the year 2005/2006 (45
percent). The yearly percentage actual funding over projected funding was however not steady (see Figure 4.2). The year on year analysis showed in Figure 4.2 shows declines and increases in almost each university in each subsequent period. In terms of variations, Moi had a fairly consistent actual funding as a percentage of the projected funding with a variation of 4 percent (See Table 4.1 below). This was between 61 and 65 percent. KU on the other hand had the highest variation of 15%.

Table 4.1: Variations between Highest and Lowest Actual Research Funding to each of the Seven Kenyan Public Universities as a Percentage of the Projected Funding by Donors.

<table>
<thead>
<tr>
<th></th>
<th>UoN</th>
<th>Moi</th>
<th>KU</th>
<th>JKUAT</th>
<th>EU</th>
<th>MSU</th>
<th>MMUST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>9%</td>
<td>4%</td>
<td>15%</td>
<td>12%</td>
<td>12%</td>
<td>10%</td>
<td>11%</td>
</tr>
</tbody>
</table>

It is worth noting though that these are averages for the 37 respondents and thus do not reflect the individual donor funding as a percentage of the projected.

4.4 Criteria for Funding University Research

The main subject of this study was to investigate the factors that determine the levels of research funding to Kenyan public universities. The main criteria used to determine the level of research funding to be disbursed to Kenyan public universities is paramount. It is useful in determining the funding frameworks and policies that guide the levels of research funding. It helps universities to know what yardsticks are used by research donors to determine the levels to grant them. This was specifically captured in Section C of the questionnaire. Eighteen factors were identified by the researcher and the respondents were required to identify to what extent, or the level of importance placed on
each factor in determining the levels of research funding to Kenyan public universities.

The results have been presented below.

**Table 4.2: Evaluation of the 18 Factors based on their Chi – Square Values**

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>(X^2_{\text{CALCULATED}})</th>
<th>(X^2_{\text{TABULATED}})</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Having an acceptable proposal, budget and time frame</td>
<td>3.27</td>
<td>3.84</td>
<td>Accept (H_0)</td>
</tr>
<tr>
<td>2. Research meeting donor's overall objective/theme</td>
<td>4.568</td>
<td>3.84</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>3. Period of University existence</td>
<td>5.486</td>
<td>7.815</td>
<td>Accept (H_0)</td>
</tr>
<tr>
<td>4. Research meeting donor's financial requirements</td>
<td>12.865</td>
<td>9.488</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>5. Location of the University</td>
<td>40.162</td>
<td>9.488</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>6. Size of the University</td>
<td>12.405</td>
<td>7.815</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>7. University's past involvement in successful researches</td>
<td>9.081</td>
<td>9.488</td>
<td>Accept (H_0)</td>
</tr>
<tr>
<td>8. Level of research funding by other external donors</td>
<td>17.595</td>
<td>7.815</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>9. University management support</td>
<td>8.27</td>
<td>9.488</td>
<td>Accept (H_0)</td>
</tr>
<tr>
<td>10. University leadership style</td>
<td>9.351</td>
<td>9.488</td>
<td>Accept (H_0)</td>
</tr>
<tr>
<td>11. University resources</td>
<td>22.324</td>
<td>9.488</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>12. Government research financial support</td>
<td>34.486</td>
<td>9.488</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>13. University involvement in income generating activities</td>
<td>22.595</td>
<td>9.488</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>14. Type if university, public or private</td>
<td>17.459</td>
<td>9.488</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>15. Awards given to the university</td>
<td>8</td>
<td>9.488</td>
<td>Accept (H_0)</td>
</tr>
<tr>
<td>16. Previous experience with the university</td>
<td>14.216</td>
<td>9.488</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>17. Previous monitoring and evaluation exercise</td>
<td>23.135</td>
<td>9.488</td>
<td>Reject (H_0)</td>
</tr>
<tr>
<td>18. Number of research activities currently ongoing</td>
<td>20.703</td>
<td>9.488</td>
<td>Reject (H_0)</td>
</tr>
</tbody>
</table>

Table 4.2 shows the results obtained for each of the eighteen factors identified that respondents were to determine to what extent they used them in the funding decision. The results for each of the factors are discussed below.

**4.4.1 Having an Acceptable Proposal, Budget and Time Frame**

The chi-square statistic computed in this factor was 3.27 versus the critical value from the tables of 3.84 implying that there was no significant difference and therefore we accept
the null hypothesis that there was no significant difference between the responses obtained in this variable. The conclusion here is there was no significant difference between the categories of responses obtained from this variable. This factor had only two types of responses, that is, very great extent and great extent. 65 percent of the respondents felt this factor contributed to a very great extent, while the remaining 35 percent felt it contributed to a great extent. Based on the chi-square results, there was no significant difference between the two categories of responses obtained. However both results showed that this factor is highly crucial in determining the funding decision. It is thus apparent that universities must have a budget, time frame as well as a proposal in order to first determine whether or not they will receive funding. Thereafter, depending on whether or not the submitted proposal is acceptable, this will determine the level to which the funding will be provided. It is therefore extremely important for universities to provide acceptable proposals, budgets and time frames in order to secure research funding.

4.4.2 Research Meeting Donor’s Overall Objective/Theme

The chi-square statistic computed in this factor was 4.568 versus the critical value from the tables of 3.84 implying that there was a significant difference and therefore we reject the null hypothesis that there was no significant difference between the responses obtained in this variable. This factor, as the previous one, also had only two categories of responses; very great extent and great extent. 68 percent of the respondents felt this factor contributed to a very great extent while the remaining 32 percent felt this factor contributed to a great extent. Based on the chi-square results, the inference drawn from this is that a big number of respondents felt this factor contributed to the funding decision.
to a very great extent. There was a significant difference between the respondents that felt this was very important and those that felt it was important. This factor is therefore highly regarded before a donor decides on the level of research funding to grant. It is therefore important that universities be informed on the donors overall objective/theme and thereby base their researches on this in order to secure funding. Themes and objectives of some donors include enhanced health care through discovery of curative drugs, eradication of poverty, and improved living through discovery of better and cheaper ways of living to mention but a few. That means therefore that the researches conducted by public universities must be in line with the donor’s principal objectives and themes.

4.4.3 Period of University Existence

The chi-square statistic computed in this factor was 5.486 versus the critical value of 7.815 implying that there was no significant difference and therefore we accept the null hypothesis. This factor had four categories of responses. 27 percent felt it did not contribute in any way, 38 percent felt it did to minimal extents, 24 percent felt it contributed to moderate extents and lastly 11 percent to a great extent. Based on the chi-square results, there was no significant difference between the values in the four categories of responses obtained from this variable. It is observed therefore that this factor is less pronounced as compared to the previous ones in determining the extent of funding. A larger percentage did not consider this factor as important. Donors are not particularly keen on the period of time that a university has been in existence.

4.4.4 Research Meeting Donor’s Financial Requirements

The computed chi-square statistic in this factor was 12.865 versus the critical value of 9.488 implying that there was a significant difference and therefore we reject the null
hypothesis that there was no significant difference among the responses obtained in this variable. This means that there was a significant difference between the values in the categories of responses obtained from this variable. This factor had all the five categories of responses. The largest proportion of 35 percent felt this factor contributed to a great extent while 32 percent felt this factor contributed to moderate extents. 11 percent felt this factor was very important in determining the level of funding. The results obtained here exhibit that this factor plays a fairly large part in determining the extent to which donors fund research activities in Kenyan public universities. It is thus important to donors to have public universities meet their financial requirements which vary from one donor to another. Examples of such requirements include opening a separate bank account for the funds. This assists in monitoring its use upon disbursement. Other financial requirements include having a dollar account and accounting procedures which must conform to the donor's requirements. An example here is in the preparation of the financial reports. Certain donors require that their reports be prepared in a certain format and thus universities must conform to this.

4.4.5 Location of the University

The chi-square statistic computed in this factor was 40.162 versus the critical value from the tables of 9.488 implying that there was a significant difference and therefore we reject the null hypothesis that there was no significant difference among the responses obtained in this variable. 57% of the study respondents felt that this factor did not contribute in any way to the funding decision. This factor is therefore not highly regarded before a donor decides on the level of research funding to grant.
4.4.6 Size of the University

The computed chi-square statistic in this factor was 12.405 versus the critical one of 7.815 implying that there was a significant difference and therefore we reject the null hypothesis that there was no significant difference between the responses obtained in this variable. The inference drawn from this is that a large number of respondents felt that the size of the university, just as the location of the university as seen above, contributed very little to the funding decision. 43% of the sampled respondents felt this factor did not contribute at all to the funding decision. 27 percent felt it contributed to minimal extents while another 27 percent felt it contributed to moderate extents. This factor therefore is not highly regarded before a donor decides on the level of research funding to provide.

4.4.7 University’s Past Involvement in Successful Research Activities

The chi-square statistic computed in this factor was 9.081 versus the critical value of 9.488 implying that there was no significant difference and therefore we accept the null hypothesis that there was no significant difference between the responses obtained in this variable. The conclusion drawn from this is that majority of the respondents felt that this factor contributed to moderate levels to the funding decision. This factor had all the five categories of responses. 32 percent of the respondents felt that this factor contributed only to a small extent to the funding decision while 30 percent felt it contributed to moderate extents. This factor is not as highly regarded as others but it does play a role in the funding decision. Donors are keen to know the university’s history with research activities but other factors are more important to them when it comes to making a decision on the levels of funding to give.
4.4.8 Level of Research Funding by Other Donors

The computed chi-square statistic in this factor was 17.595 versus the critical value of 7.815 implying that there was a significant difference and therefore we reject the null hypothesis that there was no significant difference among the responses obtained in this variable. This factor had all the five categories of responses with the largest proportion of 54 percent feeling it did not contribute at all to the funding decision. 22 percent felt it contributed only to a small extent while 14 percent felt it contributed only to moderate extents. The conclusion drawn from this is that a big number of respondents felt this factor contributed to the funding decision to almost negligible extents. This factor therefore is almost not regarded before a donor decides on the level of research funding to grant.

4.4.9 University Management Support

The computed chi-square statistic in this factor was 8.27 versus the critical value of 9.488 implying that there was no significant difference and therefore we accept the null hypothesis that there was no significant difference among the responses obtained in this variable. This factor had all the five categories of responses. 35 percent of the respondents felt this factor had no impact on the funding decision while 14 percent and 27 percent felt it did to minimal and moderate extents respectively. 11 percent felt it contributed to a great extent while 14 percent said it was very important to the funding decision. Therefore even though the majority felt it was insignificant, a proportion of the sample felt it was paramount in the decision making. This factor therefore is regarded differently among donors but the majority felt it did not play a big role before a donor decides on the level of research funding to grant.
4.4.10 University Leadership Style

The chi-square statistic computed in this factor was 9.351 versus the critical value of 9.48 implying that there was no significant difference and therefore we accept the null hypothesis that there was no significant difference among the responses obtained in this variable. From the chi-square results obtained, the conclusion drawn is that the largest number felt that this factor contributed moderately to the funding decision. This was by 38 percent of the respondents but 14% of the respondents felt its importance was both to a very great extent as well as to a minimal extent. Therefore even though the majority felt it was fairly considered, a proportion of the sample felt it was paramount in the decision making while others felt it had no impact. This factor therefore is regarded differently among donors but the majority felt it does play a big role before a donor decides on the level of research funding to grant although other factors are more crucial that the style of leadership at the university.

4.4.11 University Resources

The respondents were asked to indicate the importance placed on the above factor. University resources include having a well stocked up to-date library, well equipped laboratories and research equipment. Research activities are mainly conducted in the laboratories and libraries and therefore it would be useful to know whether donors consider having some of these resources as a factor that they consider. The chi-square statistic computed in this factor was 22.324 versus the critical value of 9.488 implying that there was a significant difference and therefore we reject the null hypothesis that there was no significant difference among the responses obtained in this variable. The conclusion drawn is that the largest number felt that this factor contributed moderately to
the funding decision. This was by 49 percent of the respondents. 22 percent felt it contributed to a great extent while 14% felt it contributed in no way and another 14 percent to minimal extents. Therefore even though the majority felt it was fairly considered, a small proportion of the sample felt it was less pronounced, while the other proportion felt it played a crucial role. This factor therefore is regarded differently among donors.

4.4.12 Government Research Financial Support

The computed chi-square statistic in this factor was 34.486 versus the critical value of 9.488 implying that there was a significant difference and therefore we reject the null hypothesis that there was no significant difference among the responses obtained in this variable. The inference drawn from this is that a large number of respondents felt that the governments’ contribution towards research financial support to public universities in Kenya contributed very little to the funding decision. 57 percent of the sampled respondents felt this factor did not contribute at all to the funding decision. 22 percent of the respondents felt this factor contributed to little extents and therefore this factor is not highly regarded before a donor decides on the level of research funding to grant. Its contribution to the funding decision is almost inconsequential.

4.4.13 Extent of University Involvement in Income Generating Activities

The chi-square statistic computed in this factor was 22.595 versus the critical value of 9.488 implying that there was a significant difference and therefore we reject the null hypothesis that there was no significant difference among the responses obtained in this variable. The conclusion drawn from this is that a large number of respondents felt that the extent of the university’s involvement in income generating activities to supplement
governmental contribution towards research financial support to public universities in Kenya contributed minimally to the funding decision. A majority (i.e. 49 percent) of the sampled respondents felt this factor did not contribute at all to the funding decision. 24 percent of the respondents felt this factor contributed to little extents and therefore this factor is not highly regarded before a donor decides on the level of research funding to grant.

4.4.14 Public or Private University

The computed chi-square statistic in this factor was 17.459 versus the critical value of 9.488 implying that there was a significant difference and therefore we reject the null hypothesis. This factor had all the five categories of responses with the largest (38 percent) feeling it contributed to the funding decision to moderate extents. 35 percent however felt it contributed greatly to the funding decision. This factor therefore plays a fairly large role in determining the level of funding to disburse. It can be inferred therefore that a majority of donors place a lot of importance on whether the university is privately owned or publicly owned with most of these donors funding only public universities. This factor can thus be said to be highly regarded before a donor decides on the level of research funding to grant.

4.4.15 Awards Given to the University

The chi-square statistic computed in this factor was 8.0 versus the critical value of 9.488 implying that there was no significant difference and therefore we accept the null hypothesis that there was no significant difference among the responses obtained in this variable. This factor had all the five categories of responses. The majority (32 percent) felt this factor contributed minimally to the funding decision. It was followed by 27
percent who felt this factor had no impact on the funding decision. 16 percent felt the factor contributed to moderate extents. The conclusion drawn is that the respondents did not regard this factor highly in making their funding decision. Awards given to universities are recognitions for successful work done or for contributions towards some successful venture. Donors however are not keen on the awards given to universities and therefore do not regard this factor highly in determining the extent to which to fund research activities.

4.4.16 Previous Experience with the University

The respondents were asked to indicate the importance placed on the above factor. This factor was keen to investigate whether the previous experiences the donor had shared with the university contributed in any way to the levels of research funding that they disbursed. The chi-square statistic computed in this factor was 14.216 versus the critical value of 9.488 implying that there was a significant difference and therefore we reject the null hypothesis. This factor had all the five categories of responses with the majority feeling it contributed moderately to the funding decision. This was represented by 43 percent. 21 percent however felt that it had no impact, while 14 percent felt it did to a great extent. The inference drawn is that this factor contributed moderately to the funding decision and therefore donors used it moderately to determine the level of funding to disburse.

4.4.17 Previous Monitoring and Evaluation Exercise

The chi-square statistic computed in this factor was 23.135 versus the critical value of 9.488 implying that there was a significant difference and therefore we reject the null hypothesis that there was no significant difference among the responses obtained in this
variable. The inference drawn from this is that a majority of the respondents felt this factor contributed to the funding decision to a moderate extent. This was by 46 percent of the respondents. 30 percent of the respondents felt that this factor contributed to a great extent to the funding decision. Based on this, it can be concluded that this factor therefore plays a fairly important role in the funding decision.

4.4.18 Number of Research Activities Currently On-Going

The chi-square statistic computed in this factor was 20.703 versus the critical value of 9.488 implying that there was a significant difference and therefore we reject the null hypothesis that there was no significant difference among the responses obtained in this variable. This means that there was a significant difference between the values in the five categories of responses obtained from this variable. The majority of respondents felt this factor had no impact on the funding decision. This was represented by 46 percent. 24 percent felt this factor contributed marginally while 5 percent felt it contributed moderately. The conclusion drawn from this is that majority of the respondents felt this factor did not contribute in any way to the funding decision.

4.5 Factor Analysis

From the above analysis, it is evident that each of the factors contributes to the funding decision. This means that such a decision is a function of several factors which one may conveniently refer to as being components of the funding decision. The objective of this study, was to develop a method of extracting these components and then interpreting them with respect to their magnitude in the composition of the decision function. To do this a statistical tool known as the Principal Components Analysis (PCA) has been used. This is a method of analyzing multivariate data like the one collected in this research.
Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables. These data are usually put into a matrix form to give a matrix of observations. Eigen values are then automatically generated which give the total variance that explains each individual component. The sequence from the most important factor to the least important factor that influences a particular decision function is then obtained. Percentage values of each of the factor variances are then obtained after which the cumulative totals are shown. This allows easier analysis and interpretation. Eigen values for the 18 factors identified were generated and were arranged sequentially from the most to the least influential. The component with the highest variance is the most important factor while that with the least variance is the least considered factor in the decision function. Table 4.3 below shows these findings.

The interpretation of the table is that factor 1 (research meeting donor’s overall objective/theme) has an initial Eigen value of 6.92. This figure as a percentage of the total is 38.679. This essentially means that the most important factor contributes 38.679% (approximately 39%) of the total variations in the decision to fund. Again, 12.1055% (approximately 12%), of the total variations in the decision to fund is explained by Component 2 which is having an acceptable proposal, budget and time frame. This is the second most important factor considered by donors out of the 18 identified ones. The third most important factor based on the total eigen value is the research meeting the donor’s financial requirements. This has a total eigen value of 1.711. It represents 9.5 percent (approximately 10 percent) of the total variations in the decision to fund. The
previous monitoring and evaluation exercise follows in the order of importance with a total eigen value of 1.419 or 7.889 percent (approximately 8 percent) of the total variation in the decision to fund being explained by this factor.

Table 4.3: Total Variance Explained Using Eigen Values

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Total</th>
<th>% of Variance</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Research meeting donor's overall objective/theme</td>
<td>6.962</td>
<td>38.679</td>
<td>38.679</td>
<td></td>
</tr>
<tr>
<td>2 Having an acceptable proposal, budget and time frame</td>
<td>2.179</td>
<td>12.105</td>
<td>50.784</td>
<td></td>
</tr>
<tr>
<td>3 Research meeting donor's financial requirements</td>
<td>1.711</td>
<td>9.504</td>
<td>60.287</td>
<td></td>
</tr>
<tr>
<td>4 Previous monitoring and evaluation exercise</td>
<td>1.419</td>
<td>7.882</td>
<td>68.169</td>
<td></td>
</tr>
<tr>
<td>5 Type of university, public or private</td>
<td>1.043</td>
<td>5.793</td>
<td>73.962</td>
<td></td>
</tr>
<tr>
<td>6 University resources</td>
<td>0.947</td>
<td>5.261</td>
<td>79.223</td>
<td></td>
</tr>
<tr>
<td>7 University management support</td>
<td>0.803</td>
<td>4.459</td>
<td>83.682</td>
<td></td>
</tr>
<tr>
<td>8 University leadership style</td>
<td>0.592</td>
<td>3.288</td>
<td>86.97</td>
<td></td>
</tr>
<tr>
<td>9 Previous experience with the university</td>
<td>0.481</td>
<td>2.675</td>
<td>89.645</td>
<td></td>
</tr>
<tr>
<td>10 University's past involvement in research activities</td>
<td>0.422</td>
<td>2.346</td>
<td>91.991</td>
<td></td>
</tr>
<tr>
<td>11 Location of the university</td>
<td>0.384</td>
<td>2.134</td>
<td>94.125</td>
<td></td>
</tr>
<tr>
<td>12 University's involvement in income generation</td>
<td>0.322</td>
<td>1.791</td>
<td>95.916</td>
<td></td>
</tr>
<tr>
<td>13 Awards given to the university</td>
<td>0.232</td>
<td>1.291</td>
<td>97.207</td>
<td></td>
</tr>
<tr>
<td>14 Size of the university</td>
<td>0.175</td>
<td>0.971</td>
<td>98.177</td>
<td></td>
</tr>
<tr>
<td>15 Number of research activities currently on-going</td>
<td>0.106</td>
<td>0.588</td>
<td>98.765</td>
<td></td>
</tr>
<tr>
<td>16 Government research financial support</td>
<td>0.103</td>
<td>0.573</td>
<td>99.338</td>
<td></td>
</tr>
<tr>
<td>17 Level of research funding by other external donors</td>
<td>0.061</td>
<td>0.337</td>
<td>99.675</td>
<td></td>
</tr>
<tr>
<td>18 Period of university existence</td>
<td>0.059</td>
<td>0.325</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

The fifth most important factor is the type of university with a total eigen value of 1.043. This represents 5.793 percent (approximately 6 percent) of the total variations in the decision to fund. Each factor's total variation in the decision to fund is shown by the percentage value of each component. Cumulatively, the five leading factors contribute nearly three quarters of the total decision to fund (73.962%). Using the Principal
Components Tool, the cumulative percentage figures help in identifying which factors are the most crucial. The contributions of the 13 remaining factors from the above analysis are negligible. It is convenient thus to say that in as much as they are factors, statistically, they are insignificant.

A Scree plot as shown in Figure 4.3 gives a diagrammatic representation of the Eigen value plotted against the variance associated with each factor starting with the most influential. It is used to determine how many factors should be kept. Typically the plot shows a distinct break between the steep slope of the large factors and the gradual trailing of the rest (the scree).

**Figure 4.3: Scree Plot Showing Total Variance Explained Per Component**
From Figure 4.3 above, the 18 factors have been plotted from the most influential to the least important variable in the decision function. Based on the highest eigen value to the lowest we are able to see the most important factor considered by donors in the funding decision. As discussed earlier, the first 5 components are the most crucial. At this point, the slope is very steep but there after it almost flattens. The most important factor considered by donors in the funding decision is the research meeting the donor’s overall objective or theme. This has a percentage variance of 39% meaning that 39% of the total variation of the decision to fund is explained by this factor. This is followed by having an acceptable proposal, budget and time frame. This contributes 12 percent of the total variation in the decision to fund. The diagram also shows that the third factor is crucial in the funding decision as the slope is still steep at this point. The factor represented at this point is the research meeting the donor’s financial requirements with an eigen value of 1.711 and cumulatively giving a percentage value of 60.287 (approximately 60 percent). The fourth and fifth components respectively each contribute approximately 8 percent and 6 percent. Cumulatively, 73.962 percent (approximately 74 percent) of the total variations in the decision to fund are explained by the first five factors and this can be observed in the diagram where at this point the slope is very steep. From the sixth component, that is the university resources, the slope starts to flatten all the way to the eighteenth component. The period of university existence is the least considered factor with 0.325% of the total variation to fund being explained by this factor.
5.1 Introduction
This chapter concludes the study. It gives an overview, and discusses the findings of the study. It also cites various limitations encountered in the course of the study and gives direction for future research in the area or university research funding.

5.2 Summary of Findings of the Study
The objective of the study was to identify the factors that influence the levels of research funding to Kenyan public universities. A summary of the major findings is discussed here.

5.2.1 Actual Allocations for Research Funding
It was established that the seven Kenyan public universities differed in the funding levels received from the non-governmental agencies. Of the seven public universities in Kenya, UoN received the highest amount and this was significantly larger than what is received by the other six public universities. This can be attributed to several factors chief among them being that UoN was the first university to be established in Kenya and therefore it has a long standing record with several donors. It is currently the largest in Kenya with the highest number of schools and colleges offering numerous science-based courses where a lot of research is conducted.

Unlike UoN where research funders are many, and whose research activities are very diverse, the other six public universities' research funding is significantly less. Moi, KU, JKUAT, Egerton, MSU and MMUST follow UoN in terms of percentages of the total...
research funding received at between 4% and 15%. This is much lower than UoN’s. One factor responsible for this is the type of courses offered in these universities. KU and MSU have fairly large Arts, Humanities and Social Sciences programmes and thus researches in these fields are very few as compared to UoN which has the highest number of Pure and Natural Sciences, Applied Sciences and Medical related courses. Science fields have several funded and on-going researches. JKUAT and Egerton also have many science and technology oriented courses but their sizes and members of staff are much less than that of UoN’s. MMUST’s levels of funding are much less compared to the rest, the major reason perhaps being its fairly recent establishment. It was a constituent college of Moi until recently when it officially became a fully fledged university.

By and large, the funding approach employed by the non – governmental agencies to allocate funds to Kenyan public universities is one that invariably considers many key factors. It rewards universities that have significantly more science related courses and have a long standing history with donors among a myriad of factors. Again, it is worth noting that not all donors fund all the seven public universities. Some donors fund a few of them while others fund all.

Overall, all the seven Kenyan public universities receive research funding from the external non – governmental institutions although to varying degrees. Some universities receive much more than others, an indication that they are able to better satisfy the conditions put in place in order to receive funding or that they conduct more research activities than their counterparts.
5.2.2 Provisions for Research Funding

From the research findings, it can be concluded that for virtually all the seven Kenyan public universities, the research funding received by them was not the whole amount that was budgeted or allocated to them by the external non-governmental agencies. Figure 4.2 in the previous chapter showed the mean scores of the actual research funding received as a percentage of the amount projected as from 2002/2003 through 2006/2007. As initially indicated, the graph showed that research funds set aside for public universities in Kenya have not been fully disbursed. UoN has over the five year period received the highest amount of the projected funds. It can thus be said to have attained a measure of success in as far as securing the maximum research funding as compared to the other six universities is concerned. The yearly percentage actual funding over projected funding was however not steady. The year on year analysis showed variations in the actual funding as a percentage of the projected funding in virtually all the universities in each subsequent period. Overall, all the seven Kenyan public universities receive research funding from the external non-governmental institutions but none of them has received the full disbursement provided or budgeted for them. This suggests that they have probably not been able to fully satisfy the conditions put in place in order to receive full funding.

5.2.3 Criteria for Research Funding

From the results obtained from the study, it can be concluded that several factors influence the level of research funding disbursed to public universities in Kenya. However, these factors vary in that they do not all influence the decision to fund to the
same degrees. Some are more influential than others. 18 factors were identified and the non-governmental agencies were asked to state the level of importance placed on each. An analysis of the eighteen factors in their order of importance was then obtained.

The ability of the research to meet the donors' overall theme and objective was the most influential of the eighteen factors identified. A majority (67.6 percent) of the respondents identified this factor as contributing to the funding decision to a very great extent. The remaining 32.4 percent felt it contributed to a great extent. This more or less confirms that all donors do consider this factor very seriously. Statistically, approximately 39 percent of the variations in the decision to fund were explained by this variable. This represents a very high percentage considering eighteen factors were identified. It can thus be concluded that external non-governmental donors are keen to observe whether the research that is being conducted is in line with the donors overall objective or theme. Donors themes are mainly concentrated along eradicating poverty, exploring clinical ways of effectively managing and treating diseases, natural resources conservation techniques and scientific and technological advancements. They mainly focus on devising ways and means of generally bettering and improving the lives of citizens. Researches conducted in public universities must therefore be in line with these objectives for them to secure maximum funding from the non-governmental agencies.

The next most influential factor was having an acceptable proposal, budget and time frame. The majority of the respondents here (64.9 percent) felt this factor influenced their decision to fund to a very great extent. The remaining 35.1 percent felt this factor influenced their decision to fund to a great extent. Again, this confirms that donors place
a lot of importance on this. In the hierarchy order, this factor came second with 12 percent of the variations in the decision to fund being explained by it. Universities are required to submit an acceptable work plan to donors that clearly outlines how the proposed research is to be conducted as well its expected output. A work plan will also basically have the number of persons that will be involved in the research with each person's role being clearly articulated. This must include budgets which clearly show how much money is required for each planned activity. Examples here include the items that will require to be purchased, stipends that will need to be paid to the research assistants and honoraria payments upon successful completion. These amounts must be justified in order for them to be acceptable. Besides a proposal and a budget, the donors also require the time frame which proposes the amount of time within which the research will be conducted.

The factor that came third in the hierarchy of those that influence the decision to fund is the universities' ability to meet the donors' financial requirements. Approximately 10 percent of the variations in the decision to fund are explained by this factor. Donors' financial requirements vary from one donor to another but generally include such specifications as opening a separate bank account where the funds will be transferred to. Other requirements include having a dollar account and ensuring accounting for the disbursed amounts is done in a specific format. This allows easier monitoring and evaluation.

The previous monitoring and evaluation exercise followed by the type of university were the fourth and fifth factors respectively. Donors are keen to observe how the previous
disbursements were utilized. They do this in the monitoring and evaluation exercises whose outcome then will determine the level of research funding to disburse next. It was also established that donors favor public universities significantly more than the private universities. Having resources such as laboratories and libraries came next followed by the support received by the university’s management. The style of leadership was next contributing 3 percent of the total decision to fund. This was closely followed by the donors’ previous experience with the university at 2.6 percent. The university’s past involvement in successful research activities and the location of the university followed with 2.3 and 2.1 percents respectively. It can thus be seen that although these factors somewhat contribute to the funding decision, their extent is minimal and almost statistically insignificant. The last seven in their order of importance are the university’s extent of involvement in income generating activities to supplement government funds, the awards given to the university, the size of the university, the number of research activities currently going on, the amount received from the government to support research activities, the level of research funding by other non – external donors and finally the period of university existence.

In summary, although several factors influence the decision funding, the degree to which each factor contributes is different.

5.3 Recommendations

To universities: Research funding from external non - governmental agencies is extremely important to them. It increases their funding base and so helps them carry out many more researches unlike when they have to rely solely on the government. They should therefore aim at satisfying all the conditions that determine the decision to fund by
external donors. They will thus be able to receive all the money that had been budgeted for. Again, they should source for even more donors, that is the untapped sources in order to diversify their research revenues base.

**To donors:** The amounts disbursed to public universities are extremely useful to the recipients. It helps them achieve one of their core functions which is conducting research. Donors should strive to allocate and disburse more funds to universities so that more research activities can be conducted. They should encourage more universities to apply for funds and disburse to them provided they meet their requirements. Donors should also follow keenly how their funds are utilized to ensure they are not misused or channeled elsewhere.

**Government of Kenya:** The Government of Kenya should encourage more research to be conducted in public universities in Kenya by increasing the research funds that they disburse to them.

### 5.4 Suggestions for Further Research

Given the broad nature of the subject of determining the factors that influence the levels of research funding to Kenyan public universities by external non-governmental agencies, it was not possible to study the subject in greater depth and breadth. These, together with the findings of this study have obvious implications that call for further research. First, considering the differences in terms of institutional successes in receiving research revenue from the non-governmental agencies, it would be interesting to carry out further in-depth case studies to investigate the experiences of an individual public university with a number of donors, or all the public universities with one individual donor. Such studies will help establish important trends in donor funding. This study
focused on the seven public universities in Kenya. A study on the factors that influence donor funding to private universities in Kenya could be done in future. Again, this study was limited to public universities in Kenya. It would be useful to do a comparative study of public universities in Kenya and other public universities outside the country, say in East Africa or elsewhere across the globe.

This study confined itself to institutional conditions for granting the levels of funding to public universities. A study could thus be done seeking to interrogate other major issues, for instance, the adequacy of donor funding towards supporting research activities in public universities, the problems experienced by these agencies while granting research funding, or in cases of insufficient funding the subsequent implications that are likely to be blamed on funding scarcity. Similarly, it would be important to establish the factors that limit public universities from achieving full allocations of research funding from donors. The study therefore will focus on the public universities and not the donors.

The study focused on external non-governmental agencies. The study could be further extended to all other internal private sector agencies or institutions that donate funds to universities and do not necessarily have any other relationship with universities. Such industries are the banking sector, the communications sector and so forth. Lastly, one of the yardsticks used to determine university ranking is through involvement in research. It would be interesting to do a study on the extent to which donor funding has determined the ranking of universities in Kenya or elsewhere.

5.5 Limitations of the Study

The study focused on the area of research funding by non-governmental agencies to
public universities in Kenya where confidentiality is highly important especially with regard to the amounts disbursed. Most information concerning the finances is treated by donors as very confidential. In the light of this, the researcher was limited by the selectivity of financial information that could honestly be divulged by the funding institutions. Another critical shortcoming is the limited number of prior studies that have been done on this particular subject area of study. Gathering sufficient and relevant information to form a review of past literature was consequently restrictive.
REFERENCES


http://www.uon.ac.ke/donors.php

http://www.uon.ac.ke/uon_research.php

http://www.mu.ac.ke/research/internalization.ppt

http://www.ku.ac.ke/top50_research_rank.html

http://www.ku.ac.ke/sch_rank.html

http://www.ku.ac.ke/dept_rank.html

http://www.jkuat.ac.ke/administration/rpe.php


Dear Respondent:

This questionnaire is designed to collect data on the factors that determine the levels of research funding that you give to Kenyan public universities. This questionnaire is divided into 3 parts. Section A, B and C. Kindly answer the questions in each section. The information given will be used STRICTLY for academic purposes and will be treated with OUTMOST confidence. Your answers will remain anonymous and strictly confidential and in no instance will your institution be mentioned in the report.

SECTION A

GENERAL INFORMATION

A. (Please Tick (√) where appropriate)

1. Name of the Institution

2. Year started

3. Location
   (1) Within Kenya
   (2) Outside Kenya

4. Respondent
   (1) Director in-charge of Research and Development
   (2) Management
   (3) Research officer in-charge of disbursement
   (4) Other (specify)
5. Which universities do you provide funding to?

(1) Public universities only
(2) Private universities only
(3) Both Public and private universities

6. How many public universities in Kenya are you currently funding?

(A) 1
(B) 2
(C) 3
(D) 4
(E) 5
(F) 6
(G) 7

7. Which universities are these?

(1) Nairobi University
(2) Moi University
(3) Kenyatta University
(4) Jomo Kenyatta University
(5) Egerton University
(6) Maseno University
(7) Masinde Muliro University

8. How long have been funding university research?

(1) 1 year
(2) 2-5 years
(3) 5-10 years
(4) More than 10 years
SECTION B

FINANCIAL INFORMATION

9. How much funding have you been granting these respective universities in the last 5 years? Kindly indicate the currency you have used.

N/B: Actual funding refers to the amounts actually funded, while projected funding refers to the amounts you had set aside for funding to the respective universities.

(A) NAIROBI UNIVERSITY

<table>
<thead>
<tr>
<th>Actual Funding</th>
<th>Projected Funding</th>
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(B) MOI UNIVERSITY

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(C) KENYATTA UNIVERSITY

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(D) JOMO KENYATTA UNIVERSITY

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### (E) EGERTON UNIVERSITY

**Actual Funding**

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**Projected Funding**

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<th>Amount</th>
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### (F) MASENO UNIVERSITY

**Actual Funding**

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<th>Year</th>
<th>Amount</th>
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<td>2005/2006</td>
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<td>2003/2004</td>
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**Projected Funding**

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<th>Amount</th>
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### (G) MASINDE MULIRO UNIVERSITY

**Actual Funding**

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<th>Year</th>
<th>Amount</th>
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**Projected Funding**

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</table>
**SECTION C**

10. Please indicate (√) the extent to which you have used the following factors to determine your level of funding to public universities research. Use a five point scale where: (1) Not at all (2) Little Extent (3) Moderate Extent (4) Great Extent (5) Very Great Extent

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at All (1)</th>
<th>Little Extent (2)</th>
<th>Moderate Extent (3)</th>
<th>Great Extent (4)</th>
<th>Very Great Extent (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having an acceptable proposal, budget and time frame</td>
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<tr>
<td>Research meeting donor’s overall objective/theme</td>
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<tr>
<td>Period of university existence</td>
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<tr>
<td>Research meeting donor’s financial requirements eg. accounting procedures, opening separate donor bank account</td>
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<tr>
<td>Location of the university</td>
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<tr>
<td>Size of the university</td>
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<tr>
<td>University's past involvement in successful research activities</td>
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<tr>
<td>Level of research funding by other external donors</td>
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<tr>
<td>University management support</td>
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<tr>
<td>University leadership style</td>
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<tr>
<td>University's resources eg library, Laboratories</td>
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<tr>
<td>Government research financial support</td>
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<tr>
<td>Extent of university's involvement in income generating activities to supplement governmental funds</td>
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<tr>
<td>Type of university, public or private</td>
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<tr>
<td>Awards given to the university</td>
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<tr>
<td>Previous experience with the university</td>
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<tr>
<td>Previous monitoring and evaluation exercise</td>
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<tr>
<td>Number of research activities currently ongoing</td>
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</tbody>
</table>

Source: own composition

THANK YOU FOR YOUR CO-OPERATION

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APPENDIX II

WORK PLAN

1. April - July, 2008
   Proposal writing

2. July 15 – August 15, 2008
   Proposal correction

3. August 16 - August 30, 2008
   Pilot study

4. September 1 - September 30, 2008
   Data collection

5. October 01 - October 15, 2008
   Data analysis

   Compiling of the report

7. November 1, 2008
   Submission of the report.
## APPENDIX III

### BUDGET

<table>
<thead>
<tr>
<th>Budget Item</th>
<th>Cost (KSHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typing and printing proposal</td>
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<tr>
<td>Photocopy and Binding</td>
<td>3,500</td>
</tr>
<tr>
<td>Stationery</td>
<td>2,000</td>
</tr>
<tr>
<td>Transport to the study area</td>
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</tr>
<tr>
<td>Communication</td>
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</tr>
<tr>
<td>Computer analysis</td>
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</tr>
<tr>
<td>Project typing</td>
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<tr>
<td>Project photocopying and binding</td>
<td>7,000</td>
</tr>
<tr>
<td>Allowance for research assistants</td>
<td>6,000</td>
</tr>
<tr>
<td>Contingencies</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>55,000</strong></td>
</tr>
</tbody>
</table>
APPENDIX IV

LETTER OF INTRODUCTION:

Dear ________________________

I am a student pursuing a post graduate degree at the school of Business, Kenyatta University. The title of my study is, ‘FACTORS INFLUENCING LEVELS OF RESEARCH FUNDING TO KENYAN PUBLIC UNIVERSITIES BY NON GOVERNMENTAL AGENCIES’. You are selected to participate in this study as a categorical respondent in your institution’s population because of your role in administration activities. The questionnaire attached asks questions about your institution’s activities, processes and practices. Your participation is essential to this study and will enhance our knowledge on research funding and the factors that influence the levels of research funding in the higher education arena.

I also wish to inform you that the information you will provide will only be used for academic purposes. If you would like, we can send to you the report of the findings on request.

My address is provided below.

Thank you.

Linda Josephine Etyang,
Kenyatta University,
School of Business,
P. O. Box 43844,
NAIROBI, KENYA.
APPENDIX V

EXTERNAL RESEARCH DONORS TO THE SEVEN KENYAN PUBLIC UNIVERSITIES

1. Action Against Hunger
2. AERC
3. African Institute for Capacity Development
4. African Vegetable Research Project
5. Association of African Universities
6. Association for Strengthening Agricultural Research in Eastern and Central Africa
7. AVOIR
8. BECANET
9. BIO-EARN
10. Centre for Disease Control
11. CIAT
12. Colombia University
13. Computerisation Fund
14. Concern Worldwide Kenya
15. DAAD
16. DANIDA
17. Earthwatch Institute
18. Family Health International
19. FAO
20. Flemish University
21. Florida University
22. Ford Foundation
23. Forum for African Women
24. GBSN
25. German Foundation (DSW)
26. GTASBY Charitable Foundation
27. IAAF
28. IAVI
29. IDRC
30. IITA
31. International Aids Vaccine
32. International Development Research Centre
33. International Foundation for Science
34. IPGRI
35. Isotopic Nuclear Techniques
36. JICA
37. KAAD
38. Lake Victoria Research Initiative Fund
39. Lake Victoria Tourism Trust Fund
40. Lund University
41. NUFU
42. Organization for Social Science Research in Eastern and Southern Africa (OSSREA)
43. Partnership for Higher Education in Africa
44. Pathfinder International
45. Rockefeller
46. RPSUD
47. RUFORUM
48. SAREC
49. SIDA
50. Southern & Eastern Africa Network for Analytical Chemists (SEANAC)
51. Tangaza College
52. Trust Africa
53. UNESCO
54. United Nations Development Program (UNDP)
55. United Nations Environmental Program (UNEP)
56. United States State Department
57. University of Cambridge
58. USAID
59. USHEPIA
60. VLIR
61. Volkswagen Foundation
62. Wageningen University
63. WAITRO
64. World Bank
65. World Health Organisation (WHO)