

**SELECTED STUDENTS AND INSTITUTIONAL BASED FACTORS
INFLUENCING INTERNAL EFFICIENCY OF POSTGRADUATE STUDIES
IN PUBLIC AND PRIVATE UNIVERSITIES IN KENYA**

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Requirements for the Award of the Degree of Doctor of Philosophy of Education
in Educational Management of Chuka University**

CHUKA UNIVERSITY

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DECLARATION AND RECOMMENDATION

Declaration


This thesis is my original work and has not been presented for the award of a diploma or conferment of a degree in this or any other university or institution

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DEDICATION

This thesis is dedicated to my parents, Komen Chepyegon and Ruth Komen, and my siblings, whose support has been the cornerstone of my academic journey. To my dear wife, Faith, and children, Trizah Jepchirchir, Caren Jelimo, Ruth Jeruto, and Emmanuel Komen, your patience, love, and understanding were my anchors throughout this journey

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ABSTRACT

Higher education contributes to national development by generating both human and economic capital. In Kenya, the higher education sector has experienced significant growth, marked by an increase in the number of public and private universities, with a primary focus on enhancing access, quality, and relevance in response to labor market demands. Despite these efforts, the enrollment rate in higher education remains low, with high dropout and low completion rates for doctoral and master's degrees, indicating substantial levels of wastage. This study aimed to establish the influence of selected student and institutional factors on the internal efficiency of postgraduate studies in public and private universities in Kenya. It was guided by the production function theory and human capital theory. The study employed descriptive and correlational research designs. The target population was 84,983 respondents, comprising 49 graduate school directors, 3,835 academic staff, and 81,099 postgraduate students. Proportionate and simple random sampling methods were used to select 398 respondents, consisting of 15 directors, 90 academic staff, and 293 students. Data were collected using questionnaires and interview schedules. A Likert scale was utilized for closed-ended questions, and interview schedules were used to gather data from graduate school directors. Data from academic staff and postgraduate students were collected via questionnaires. The research instruments were subjected to reliability and validity tests before use. Content, face, and construct validity were confirmed before administering the instruments. A pilot study was conducted in two universities to determine the reliability coefficient of the instruments using Cronbach's Alpha, resulting in an average reliability coefficient of 0.812, which exceeded the 0.7 threshold, indicating that the instruments were reliable. The data were cleaned, sorted, and analyzed using the Statistical Package for Social Sciences (SPSS) version 26.0. Hypotheses were tested using simple linear regression at $\alpha = 0.05$. The study findings revealed that the cost of postgraduate programs, student characteristics, physical facilities, and academic staff characteristics influenced the internal efficiency of universities in Kenya. The study recommends that the government increase funding for higher education and make financial resources available in a manner similar to the sponsorship model used for undergraduate programs. Additionally, universities should be equipped with the necessary facilities, including fully functional libraries, suitable laboratories for teaching and learning, and reliable Internet connectivity. The study further suggests improving the management of research and instruction by enhancing oversight and recruiting sufficient, competent faculty members. Lastly, it advises prospective postgraduate students to balance their social and academic lives by choosing a study model that fits their schedules and effectively managing their time, priorities, roles, and responsibilities.

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LIST OF ABBREVIATIONS AND ACRONYMS

CUE	Commission of University Education
DEA	Data Envelopment Analysis
GDP	Gross Domestic Product
HEIs	Higher Education Institutions
HELB	Higher Education Loans Board
ICT	Information Communication Technology
MOE	Ministry of Education
OUK	Open University of Kenya
PhD	Doctor of Philosophy
SAGAs,	Semi-Autonomous Government Agencies
SPSS	Scientific Package for Social Sciences

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Higher education presents a wide range of benefits to society, both direct and indirect, which are achieved when citizens have access to higher education. As such, there is increased public attention on how the higher education sector is performing in areas such as efficiency, relevance, and quality (Sandy et al., 2010). Due to the high expenditure in the education sector, public and private authorities in most countries are interested in investigating the returns of higher education, particularly whether students graduate on time or drop out, and whether the competence and skills acquired are relevant in a rapidly shifting labor market (Vossensteyn et al., 2015). Higher education, as a means of economic development, helps countries build globally competitive economies by creating, applying, and spreading new ideas and technologies (Aleksandra et al., 2019). Universities, as institutions of higher learning, contribute significantly to the knowledge-based economy by providing highly qualified personnel for the job market. They also play a leading role in conducting, promoting, and supporting research and scientific endeavors. However, for these outcomes to be achieved, it is essential that higher education institutions operate efficiently, producing high outcomes with relatively low inputs.

Efficiency entails achieving maximum output from a specified set of inputs while utilizing a minimum quantity of resources. Simply stated, efficiency is realizing maximum output at minimal cost. In education, efficiency can be described as achieving the greatest amount of educational output from a given level of inputs (Johnes et al., 2017). In this context, efficiency is defined in relation to productivity, where productivity is the value assigned to the rate at which inputs are converted into outputs, and efficiency is the ranking of different values (Munoz, 2016). External efficiency refers to the extent to which an education system meets societal goals and is often measured by the quality of learning, determined by the inputs and outputs of the education system. Internal efficiency, on the other hand, refers to the extent to which an education system meets its internally set objectives, measured by the flow of students through the system with a minimum of waste (Nasib, 2017). An education system with low dropout rates, low repetition rates, and high completion rates is said to be internally efficient, and vice versa.

Wolszczac (2014) studied the efficiency and productivity of higher education institutions from an international perspective in a study titled *An Evaluation and Explanation of (In)Efficiency in Higher Education Institutions in Europe and the U.S.*. This study employed a two-stage semi-parametric Data Envelopment Analysis (DEA) and used a sample of 500 higher education institutions from ten European countries and the U.S. between 2000 and 2010. The study used different input-output sets, with inputs including total expenditure, academic staff, administration staff, and the total number of students, while outputs included the number of articles, publications other than scientific articles, and graduates. The results indicated that European and U.S. institutions were relatively inefficient, with a high degree of heterogeneity in efficiency scores both between and within countries. Additionally, inefficiency was lower for U.S. institutions compared to European ones. The study further established that the funding structure affects technical efficiency, though the direction of the effect varied between European and U.S. institutions. Greater inefficiency in universities with a larger proportion of revenue from government resources was confirmed in the European sample. Larger universities were found to be more efficient than smaller ones, which was attributed to economies of scale in both European and U.S. institutions. Furthermore, universities located in wealthier regions of Europe and the U.S. were found to be more efficient.

This study interrogated efficiency in higher education using different inputs and outputs, seeking to compare inefficiency between European and American universities, while considering different levels of inputs and university sizes. While the results showed that both European and U.S. institutions were relatively inefficient, it was established that universities with a larger proportion of revenue from government sources exhibited greater inefficiency. This raises concerns about why inefficiency was present in these institutions but not in others. This gap highlights the need for further research to explore whether the costs associated with higher education institutions influence the internal efficiencies of these institutions in Kenya.

Educational wastage is a global phenomenon. It occurs as a result of students leaving educational institutions early from their programs of study before developing their academic skills, repeating classes and courses, performing poorly academically, and stagnating (Aziajik et al., 2023). Educational wastage means not being successful in

achieving educational goals and purposes. Every factor that decreases the productivity of education in achieving its purposes contributes to educational wastage (Kayode et al., 2014). A common phenomenon observed in most developed countries is higher accomplishment in education compared to developing nations with high wastage rates. According to a World Bank report on development indicators, Britain had 2% education wastage, the United States had 11%, while Nigeria and Sudan had 41% and 67%, respectively.

A comprehensive investigation into the determinants shaping the success of PhD students was conducted (Rooij, 2021). The study involved a sample of 839 PhD students in the Netherlands and focused on examining the relationships among supervision, psychosocial factors, project characteristics, and variables such as satisfaction, progress, and quit intentions. Through regression analysis, the research revealed a negative correlation between an increased workload and both satisfaction and progress, coupled with a positive association with quit intentions. These findings align with those of Costello et al. (2017), who explored the factors contributing to doctoral candidate attrition among 724 doctoral students in the social sciences across 56 universities in Spain. Their study highlighted the significant demands inherent in doctoral programs, which disrupt the personal lives of students and exacerbate attrition rates. This literature underscores the complexity of factors influencing PhD candidates' success. Rooij's (2021) study specifically addresses supervision, psychosocial factors, and project characteristics, revealing insights into PhD candidate success and attrition. This prompts concern for further research on completion rates among postgraduate students in developing countries, as these factors likely differ in resource-constrained settings.

According to van de Schoot et al. (2013), PhD candidates in the Netherlands often succeed in finishing their studies within the stipulated period, though overall PhD attrition remains significant, with 40% to 50% of candidates not completing their programs. As Bair and Haworth (2004) and Litalien (2015) note, dropping out of a PhD program is costly, as students must devote substantial time, money, and intellectual capital from various sources. Delays in PhD completion cause long-term personnel shortages in academic institutions and promotion stagnation of academic staff, damaging a university's overall reputation. Their findings align with those of Vladimir

(2010), whose study on potential predictors of timely completion among dissertation research students at the University of Adelaide in Australia found an attrition rate of 33%. The study surveyed 1,688 doctorate students, highlighting that male, international, and scholarship-holding students in fields like Chemistry and Physics had shorter completion times. From these studies, it is evident that enormous financial and time investments are made in doctoral studies, yet high attrition rates and poor university rankings remain common challenges.

Khan's (2021) study in Bangladesh measured the efficiency of higher educational institutions and compared public and private universities using data envelopment analysis (DEA). The study involved 15 public and 20 private universities between 2008 and 2018. Public universities operated with an average technical efficiency of 56.2% to 80.7%, while private universities ranged from 49.1% to 77.6%. Only 33% of public and 25% of private universities were found to be efficient, revealing that universities in Bangladesh, on average, do not operate efficiently in resource utilization.

Bagonza (2021) conducted a correlational study in Uganda to examine the relationship between university lecturers' competence and the quality of university education. The study's sample included 424 respondents from three public and three private universities, comprising students, human resource managers, quality assurance directors, and heads of academic departments. The findings revealed a positive and statistically significant relationship between lecturers' competence and the quality of university education. These results align with those of Taylor and Harris (2013) in South Africa, who assessed the efficiency of public universities using DEA data from 22 institutions. The study emphasizes the need for universities to improve faculty quality through hiring processes, internal training, and scholarships.

Erasmus et al. (2013) evaluated the efficiency of public universities in Tanzania in using human resources to produce output, measured by internal revenue generation and the number of degrees conferred. Using DEA to estimate efficiency scores for seven public universities, the study found that while public universities were generally efficient in producing postgraduate graduates, they were inefficient in income-generating activities. This inefficiency was attributed to the underutilization of human resources in generating income from research, consultancies, and investments.

In Kenya, university education is the pinnacle of higher learning, playing a crucial role in cultivating highly qualified individuals with specialized skills. Its objective is to contribute to national development by generating human and economic capital. Since 1963, the Kenyan education system has undergone numerous policy and curriculum changes to adapt to evolving needs. The higher education sector has grown significantly, with 78 public and private universities aligned with national development goals such as Vision 2030. These efforts focus on enhancing access, equity, quality, and relevance in response to labor market demands. Despite this, the enrollment rate in higher education remains at 11.7%, below the desired benchmark of 70%.

Challenges persist in Kenyan postgraduate programs, particularly in completing doctoral and master's degrees within stipulated durations. The Commission for University Education (CUE) has identified institutional administrative challenges, funding delays, procurement issues, and supervisor-student relationship problems as key barriers. Additionally, some students enroll primarily to meet employment conditions, lacking the motivation to complete their programs. These challenges have persisted since the Ominde Education Report in 1964 and are continually addressed through committees, task forces, and policy frameworks like Education for All, Millennium Development Goals, Sustainable Development Goals, and Vision 2030.

Data from CUE reports (2018) provide a detailed examination of admissions and graduations in Kenya's public and private universities for 2016 and 2017, focusing on Master's and PhD programs as presented in Table 1. These reports reveal significant disparities in completion rates, particularly in PhD programs, highlighting a potential area for further research.

Table 1: Admissions and Graduation in Private Universities 2016-2017

Award	2016			2017		
	admission	graduated	percent	admission	graduated	percent
Master	9454	2243	23.7	10727	2636	24.6
PhD	1205	120	10.0	2822	181	6.4

Source, CUE 2018

Table 1 reveals that postgraduate completion rates are very low in Kenya. PhD students in private universities exhibit very lower completion rate at 10.0% and 6.4% in 2016

and 2017 respectively compared to Master's programs 23.7% and 24.6 % in 2016 and 2017, it implies that the wastage in postgraduate studies is very high in Kenya.

Table 2: Admissions and Graduation in Public Universities 2016-2017

Award	2016			2017		
	admission	graduated	percent	admission	graduated	percent
Master	48767	6151	12.6	50960	5305	10.4
PhD	8372	582	7.0	17619	522	3.0

Source, CUE 2018

Table 2: Indicates that postgraduate completion rates in public universities in Kenya are very low for both PhD and master. The completion rate: for Master were 12.6% and 10.4% in 2016 and 2017 respectively. For PhD the rates were 7.0% and 3.0% in 2016 and 2017 respectively. There are concerns over the factors causing postgraduate candidates in Kenya to be wasted, given the differences in completion rates between master's and PhD programs, as well as between private and public universities. To delve into this research gap, further investigation is warranted to identify and understand the specific obstacles hindering PhD programs completion. Qualitative aspects such as institutional support, funding, mentorship and program structure may play pivotal roles. Addressing this gap in research can inform targeted interventions and policy adjustments aimed at enhancing the success rates of PhD students in Kenyan universities, ultimately contributing to the overall improvement of the higher education system.

1.2 Statement of the Problem

Higher education significantly contributes to economic development worldwide. Universities play a critical role in the knowledge-based economy, as they produce graduates equipped to contribute to national development. For these institutions to achieve their objectives efficiently, they require sufficient physical, human, and technological resources. The Kenyan government has introduced policies to enhance the quality of education, including the Vision 2030 document, which emphasizes technological innovation and high-level skills in the education sector. The establishment of the Commission for University Education (CUE) to oversee university education has led to measures such as requiring all universities to implement quality assurance processes. In 2018, the Government of Kenya developed a new five-year

education plan, prioritizing investment in higher education. Some of the key priorities outlined in the national education strategy include establishing the Open University of Kenya (OUK), improving retention rates, increasing the gross enrollment ratio in university education from 7 percent to 15 percent, and creating opportunities for academic staff to obtain PhDs and enhance their pedagogical skills. Despite these efforts, universities continue to face internal inefficiencies. The benefits of education for students, communities, and nations can only be fully realized when universities operate efficiently. Therefore, this study seeks to examine the influence of selected factors on the internal efficiency of postgraduate studies in Kenya.

1.3 Purpose of the Study

The purpose of this study is to establish the influence of selected factors on internal efficiency of postgraduate studies in public and private Universities in Kenya.

1.4 Objectives of the Study

The study was guided by the following objectives

- i. To establish the influence of cost of the program on internal efficiency of postgraduate studies in public and private Universities in Kenya.
- ii. To establish the influence of student characteristics on internal efficiency of postgraduate studies in public and private Universities in Kenya.
- iii. To examine the influence of physical facilities on internal efficiency of postgraduate studies in public and private universities in Kenya.
- iv. To examine the influence of academic staff on internal efficiency of postgraduate studies in public and private universities in Kenya.

1.5 Hypotheses of the Study

The following null hypotheses were formulated and subjected to test of significance at alpha level of 0.05:

- H₀₁ There is no statistically significant influence of the cost of the program on internal efficiency of postgraduate studies in public and private universities in Kenya

- H₀₂ There is no statistically significant influence of the student characteristics on internal efficiency of postgraduate studies in public and private universities in Kenya
- H₀₃ There is no statistically significant influence of the physical facilities on internal efficiency of postgraduate studies in public and private universities in Kenya
- H₀₄ There is no statistically significant influence of the academic staff on internal efficiency of postgraduate studies in public and private universities in Kenya

1.6 Significance of the Study

The findings of this study will provide valuable insights on how internal efficiency is impacted by cost of the program, physical facilities, student characteristics, and academic staff characteristics. Through an analysis of these variables, educational institutions may optimize budgetary control and resource allocations, construct infrastructure to facilitate teaching and learning, tailor interventions to fit the needs of postgraduate students, and coordinate faculty development with institutional objectives. Eventually produces improved educational outcomes, increased institutional growth, and more efficient use of resources, evidenced by reduced time to graduate by postgraduate students to graduate, and minimize dropouts.

1.7 Scope of the Study

The study was confined to all public and private universities in Kenya. The target population of this study constituted graduate school directors, senior academic staff and all active master and PhD students, in humanities and social sciences. The selection of students in social science and humanities study area was due to the fact that most universities offer programs in them. The study focused on the selected factors influencing internal efficiency of postgraduate studies in public and private universities in Kenya, which included cost of program, student characteristics, physical facilities, and senior academic staff.

1.8 Limitations of the Study

Access to comprehensive and accurate information on postgraduate program costs, physical facilities, student characteristics, and staff attributes was limited. Were inconsistent or incomplete data could hinder the ability to draw reliable conclusions

and provide recommendations. Subjectivity and bias could arise due to the influence of subjective judgments' and biases of those conducting the study or providing input. This could affect the reliability of the findings and recommendations. These limitations were addressed by the researcher by using appropriate research designs and providing assurance of confidentiality to the respondents, also triangulation of data sources to overcome the limitations.

1.9 Assumptions of the Study

The study was based on the following assumptions

- i. Universities have clear guidelines on enrolment and graduation
- ii. Students are adequately facilitated to pursue course work and research within the stipulated timelines.

1.10 Operational Definition of Terms

The operational definition of terms is as follows

Academic staff	Includes personnel whose primary assignment is Lecturing / Instruction, research, for this study they comprise of full professors, associate professor, senior lecturer, assistant Lecturer in a University.
Academic staff characteristics	Refers to the attributes possessed by academic staff considered in the study include: qualification, experience, responsibilities and availability.
Administrative staff	Includes personnel whose primary assignments are admissions, research, library, laboratory and graduation processes, for Masters and PhD students. Their roles include admission of students, processing of academic and financial reports and
Availability of resources	Refers to the extent to which the human, physical and e-resources required are accessible and ready for utilization and the universities capacity to allocate and utilize them effectively
Time taken to graduate	Time taken to complete the program for both Master and Doctorate level, a master's degree usually takes 2 years full-time while 4 years' part-time. a PhD lasts for 3 years full-time and 6 years part-time
Cost of the program	Refers to the total expenses incurred for enrolling into university to pursue doctoral or master programs, are divided into social and private costs. They include the cost of personnel, facilities, materials, tools and program costs. includes salaries, expenses on purchasing equipment and buildings and infrastructure
Social Cost	Refers to the costs that are incurred by the society, and or government in providing education, they include salaries to (teaching and non-teaching staff), government grants, scholarships, bursaries. It also include productivity and tax revenue foregone

Private cost	Refers to the expenses incurred by a student for enrolling into a university to pursue a master or doctoral degree. it includes tuition fees, learning materials, travelling and living expenses and the opportunity cost.
Internal efficiency	Internal efficiency of an education system refers to best possible method of utilization of resources (inputs) to produce outputs. For this study it refers to how universities use inputs: senior teaching staff, physical resources and funds to produce graduates with minimum wastage produce graduate
Physical facilities	Physical facilities are all the structures within in a University they, include all instructional and non-instructional facilities such as Libraries, Laboratories, Lecture Halls and Internet Infrastructure
Postgraduate studies	Refers to education undertaken after a bachelor's degree, for this study it comprises of both Master and Doctorate studies, A master's degree usually takes 2 years full-time while 4 years part-time. A PhD takes 3 years full-time and 6 years part-time
Selected Factors	For this study, these factors include the cost of the program, student characteristics, physical facilities and academic staff.
Student Characteristics	Refers to the different student attributes being considered for the study including, age, gender, residence, work, family responsibilities and other responsibilities apart from the core work.
Wastage	This refers to the inability of the postgraduate student attaining the qualifications they had enrolled for, arising from repetition or dropout. For this study it is the inability to graduate on the stipulated time or dropping out altogether.

CHAPTER TWO

LITERATURE REVIEW

2.1 Internal Efficiency of Postgraduate Studies in Public and Private Universities

An educational system's internal efficiency refers to how well its resources (inputs) are used to produce its outputs. Internal efficiency assessments are usually conducted for a particular educational level, such as primary university. The most basic measure of internal efficiency is the cost per unit of producing an educational output, which could be a student who has completed a certain level of education or a graduate of that level.

Kyvik and Olsen (2014) investigate the evolving landscape of master and doctoral training between 1980-2010, highlighting significant improvements in completion rates and time-to-degree. Their analysis reveals that the proportion of doctoral candidates with fellowships achieving their degrees within five years surged from 30% in 1980 to 60% by 2005, while those graduating within ten years rose from under 50% to nearly 80%. Despite these advancements, disparities across academic fields persist, and concerns remain about the overall duration of doctoral programs and high non-completion rates. The authors delve into the factors contributing to this enhanced efficiency, drawing on a broad spectrum of international research to contextualize their findings and underscore both the successes and ongoing challenges in doctoral education.

According to Łukasz (2020), Data Envelopment Analysis (DEA) approach to measure the effectiveness of public and private Polish universities and to investigate the effects of specific elements. To determine how environmental factors affected institutions' efficiency, a shortened regression analysis was carried out. The study analyzed the efficiency of educational activities of public and private universities, both in terms of the number of graduates and the quality of education and in the context of the labour market. The analysis also considers the level of graduate earnings. The study found that public universities were more efficient in terms of the number of graduates they produced but less efficient when considering the level of graduate salaries. The private institutions on the other hand were less efficient in the number of graduates produced but more efficient on the level of graduate salaries. The level of efficiency was affected by variables related to specific universities and the socio-economic situation of the region in which they operate.

The efficiency of a specific university is given by a relation between supplied inputs such as costs, students and faculty, and produced outputs such as graduates and profit, Boeziet al., (2023). A study in 2015 to measure the efficiency of public European Higher Education Institutions (HEIs) using non-parametric approaches, consisted of 457 Higher Educational Institutions from 15 countries revealed that the proportion of women as a substitutive input that has positive effect on the production process

A study by Meneses and Marlon (2020) provide a comprehensive scoping review of literature addressing dropout rates in online higher education from 2014 to 2018, highlighting the persistent and multifaceted nature of this issue. Analyzing 138 articles and dissertations, the authors identify a lack of standardized definitions and models within the field, which complicates understanding dropout phenomena. The review categorizes the predominant focus on risk factors, emphasizing the significance of course and program elements, student characteristics such as motivation and time management, and environmental influences like financial constraints. The authors advocate for future research to establish consistent terminology, refine methodological approaches, and develop effective intervention strategies, ultimately aiming to enhance the understanding of dropout dynamics in online education. Limitations of the current study and its implications for future research directions are also discussed, underscoring the need for a more organized and evidence-based framework to address dropout challenges.

A study by Agasisti, et al., in 2016 to analyse the technical efficiency of Italian public and private universities used Data Envelopment Analysis on the universities (2007–2011). The inputs were the total number of students and faculty staff, while the outputs are the total number of graduates and the revenues from scientific research. It revealed differences related to the type of universities; private universities are efficient than public ones, and that geographical area also influences efficiency of universities. The Northern universities were found to be relatively more efficient than those of the South and central using Malmquist index, to compare different years showed that the overall efficiency of Italian universities has increased in between 2007-2011.

According to Robin et al (2018) efficiency of universities is a general source of concern for the education community. Operating efficiency is often measured using data

envelopment analysis (DEA), a non-parametric method for efficiently handling multiple inputs and outputs. However, most DEA studies conducted to date have ignored shared input resources. In order to solve the gap with a focus on teaching and research operations, this article estimates the operating efficiency of 52 Chinese institutions using an upgraded two-stage network DEA technique using a data set from 2014. The main findings indicate that approximately one-third of the 52 institutions assessed for operating efficiency are efficient, while the other two thirds are inefficient.

Postgraduate education has become increasingly crucial for nations in recent years, contributing to scientific, technological, and social progress. However, high dropout rates may undermine the benefits of postgraduate education. The study sought to identify specific variables that influence attrition at master and doctoral level from, academic, socio-economic, and institutional variables. The study adopted a scoping review. Using the PRISMA-ScR method, 40 research articles were analysed for bibliometric insights. The study specifically examined explanatory variables for postgraduate dropout. Within the individual determinant, explanatory variables include nationality, gender, age, marital status, family support, family and work obligations, and motivation levels. Socio-economic variables encompass the student's income, employment status, and the national macroeconomic environment. In the academic context, key variables comprise prior knowledge, academic performance, student satisfaction, autonomy, self-efficacy, and research interest. The study concluded that insufficient financial resources, institutional policies, teacher-student interaction, student support, academic infrastructure, and curriculum design influenced attrition of postgraduate students. (Castelló et al., 2017)

An exploratory study conducted at a research-intensive university in New Zealand by Rachel et al (2018), which sought to ascertain the length of PhD completions and the factors taken into consideration to effect PhD completions. From 2000 to 2012, cohorts at the University of Otago had their completion data computed. There were 2770 pupils in the study's sample. In order to ascertain if factors such as age at entry, citizenship, gender, enrollment status, academic field, and scholarship status affected completion, survival models were employed. The impact of the research environment and the PhD program were also taken into account. 83% of the cohorts submitted their theses for review, with 17% opting out. For full-time students, the average submission period was

3.4 years, and the average degree award completion period was 4.1 years. Further it concluded that completion can be enhanced by having full-time candidates, recruiting a large international cohort, and providing scholarships. Health science candidates had the highest submission percentages, while commerce candidates submitted in the fastest times. The study revealed only a negligible effect of gender and age at admission. Other factors contributing to high submission rates were recruiting quality candidates, close monitoring during candidature, provision of research training, a vibrant research culture, a personal performance coach, high-quality supervision and funding incentives for candidates who submit in less than four years.

Dropout of postgraduate students is a problem in higher education in many countries it has a major negative impact on students, universities and society at large (Nurmalitasari, et. al., 2023) consequently, preventing educational dropouts is a considerable challenge for higher education institutions. Therefore, finding the factors influencing student dropout is an important step in preventing students from dropping out. A study in Indonesia sought to find the factors influencing student dropout. This study used a mix of qualitative and quantitative approaches. The findings of this study according to Nurmalitasari, et. al. (2023) reveals that there are four-dimensional factors that influence dropout of students, including personal economic factor (individual income and employment status), academic satisfaction factor (relationship with lecturer and supervisor and lecturer quality satisfaction), academic performance factor (CGPA and program study interest), and economic family factor (parents income and marital status).

According to a study by Khozaeiet al. (2015) every year, many students from the Middle East depart their nation to seek higher education overseas, despite the region's serious problems, which include war and declining exchange values. This report aims to increase awareness of the kind of obstacles these students encounter in finishing their studies by elucidating the challenges they encounter when conducting research in a foreign nation. A series of unstructured interviews were used to gather data, eliciting details about significant instances that typified the kinds of challenges that students faced while conducting their research. NVivo, a qualitative software program, was used to further analyze the data (QSR International, 10). The content analysis of the interviews revealed six major themes, including the supervisor's role, student

characteristics, financial difficulties, family obligations, psychological issues, and research barriers. These themes paint a comprehensive picture of the views of students on the variables influencing the advancement of their research. Although the challenges these students faced may have been mentioned in previous research, this report contends that the respondents mentioned experiencing psychological barriers that were not described in earlier studies, such as the state of mind they were in as a result of being worried for family members due to war or violence in their home countries, drop in currency exchange rates and difficulties in acquiring money due to international sanctions imposed against their countries. This study provides important insights on the factors that affect the progress of PhD students from the Middle East, while at the same time revealing a serious gap in supervisors' role which contributes contribute to the delay in the research progress of PhD students.

In "Massification in Higher Education Institutions in Africa: Causes, Consequences and Responses," Mohamedbhai (2014) examines the phenomenon of massification within African higher education, attributing it to historical factors that have led institutions to exceed their enrolment capacities. While this surge in student numbers has contributed to greater equity in access, it has simultaneously produced detrimental effects on educational quality, as evidenced by persistently low graduation rates. The author notes that, although corrective measures have been implemented by institutions—such as the establishment of new universities and the introduction of quality assurance systems—challenges remain, particularly in ensuring equity in student success. Additionally, the article highlights that Sub-Saharan Africa has the lowest tertiary enrolment rates globally, exacerbating its developmental challenges and necessitating increased enrolment to accommodate a growing population of secondary school graduates. To address these issues, the growth of regulated and quality-controlled private higher education is presented as a potential solution to alleviate pressure on public institutions.

Higher education institutions worldwide continue to be deeply concerned about postgraduate student dropout rates, student retention rates, and throughput rates (Khauoe, 2020). Because the economic crisis heavily depends on knowledgeable and skilled personnel to push nations toward developmental goals, higher education institutions are always looking for ways to enable the various stakeholders to make critical decisions that will ensure acceleration of throughput rates among postgraduate

students at these institutions. When accommodations are made to fill positions, industries that depend on competent workers are frequently let down by the lack of qualified candidates, which makes the industry as a whole worse. The most prevalent variables influencing postgraduate student throughput rates both internationally and in South African higher education were identified by this study. A systematic questionnaire was given to Masters' students who have registered at the university since 2012 in order to obtain the results. A structured questionnaire was employed in conjunction with a mixed-methods strategy, encompassing both qualitative and quantitative research, to gather data for this study. The results of this study have brought to light a number of issues that impacted the throughput rate of postgraduate students at the University of Technology; including work dedication, supervisor relationships, poor time management, and the fact that research is a gray area. Based on the study's results and conclusions, it is advised that students who are having difficulty juggling their work responsibilities receive additional help, that supervisor-student relationships be strengthened.

Herman (2011) investigates doctoral attrition in South Africa by comparing the perceptions of attrition held by doctoral students and PhD programme leaders, utilizing secondary data from two large studies on doctoral education. The article reveals significant gaps in the narratives of both groups, highlighting a lack of in-depth understanding of the underlying causes of attrition. By applying attribution theory, Herman argues that these misunderstandings may exacerbate the problem of attrition and emphasizes the need for further research to address these issues and improve doctoral education.

A study in Zimbabwe by Garwe, (2014) sought to explain the quality challenges and opportunities faced by private universities. Data was collected by document analysis, direct observation and participant observation by the researcher. The findings showed that financial constraints and poor corporate governance were the major factors leading to failure by private universities to maintain high quality standards. The study also highlighted the need for oversight to ensure that only institutions with the necessary financial, material and human resources are allowed to operate as private universities.

The purpose of this study, according to Samuel et al. (2014) was to look at the master's program graduation rate at Makerere University Business School. As potential constraints, we looked at curriculum, administrative procedures, research lag, and student difficulties. The study's foundation was the perspectives of former students on potential tactics for raising graduation rates. The Master of Business Administration (MBA) and the M.Sc. Accounting and Finance (Ms. AF) were the subjects of the study. The study was cross-sectional and used both qualitative and quantitative data. A sample size of 211 students was used, which included those who completed their masters within a two-year period and those who could not complete it in the same period. The results showed that the master's degree completion rate was still very low. The primary cause identified was, among other things, the delay in the return of research comments by both external reviewers and the Office of the Graduate and Research Center. This finding found support in the literature. The study recommends management to improve the research and teaching environment

According to Sulo et al. (2012) the importance of research to a university cannot be overemphasized; It leads to the generation of new knowledge, brings about innovations, improves the quality of teaching staff, increases the reputation of an institution and its economic status. However, there was a low level of research production and a decline in participation in research activities at Moi University, as a result, it was important to understand the factors that influence the research productivity of university staff. The aim of this study was to examine the factors that influence research performance at Moi University. Specifically, the study sought to determine the relationship between the accessibility of research funds, the time allocated to research, the qualifications of researchers and the research environment with the research performance of staff. The study used a descriptive survey design to collect relevant data. The target group consisted of all 1424 academic staff at Moi University. A combination of stratified and simple random sampling methods was used to select 242 respondents. Using a stratified sample, university teaching staffs were divided into categories according to their level of employment. A random sample was then used to select respondents proportionally from each category. Data was collected using structured questionnaires. The data collected was analyzed using descriptive and inferential statistics

A study to examine and compare the efficiency of public and private universities in Tanzania between 2012 used two stages Data Envelopment Analysis. First, technical and scale efficiency of universities was measured using data envelopment analysis. Secondly, factors that influence efficiency were examined using Tobit regression model for both public and private universities. The findings from the model showed that the efficiency of the two University categories varied significantly but, public University average efficiency is found to be higher than that of private universities although public universities are inefficient in research and publications, private universities efficiency is determined by enrolment, academics staff and consultancy services.

A study on the status of Kenyan universities was carried out by CUE. (2016) in an effort to pinpoint the challenges associated with offering excellent post-graduate research and training. Twelve universities, public and private, young and old, made up the study's sample. A descriptive research design was adopted in the study. Receiving data from the institutions posed the largest barrier for the exercise. Despite this, a data study showed that: graduation for master's students occurred within the allotted time frames; nevertheless, graduate timelines for PhD students had serious issues. Because there are not enough faculty members to support the amount of students, 21.7% and 27.9% of the faculty from the selected institutions are supervising students above the Masters and PhD CUE guidelines, respectively. The study's conclusions showed that the majority of post-graduates work full-time jobs, attend classes part-time, and attend them on the weekends and in the evenings. This is in contrast to the majority of industrialized nations, where students attend classes full time, mostly as a result of receiving scholarships. Students are forced to devote all of their time to their post-graduate work as a result. The report suggests that government money be made accessible in a manner akin to that of undergraduate government-sponsored programs, and that a post-graduate equivalent program be developed.

The amount of time needed to finish a master's degree and a PhD varies between universities and countries. In Kenya, a part-time degree should take four years, whereas a doctorate and master's degree should be finished in three and two years, respectively. A master's degree can be obtained in the UK part-time in as little as 24 months or full-time in nine to twelve months. A full-time Master's degree program in South Africa can

be finished in as little as 24 months, whereas a PhD program can take up to 8 years to complete, according to Amehoe (2013).

2.2 Cost of the Program in Postgraduate Studies in Public and Private Universities

The estimated expense of attending a university for a single academic year is known as the cost of attendance. It pays for both tuition and necessities. It incorporates the potential cost as well. It consists of two categories of expenses: direct and indirect. The elements that show up on a student's university bill are known as direct costs. These include living expenditures, tuition, and fees. Although indirect costs are not listed in the tuition schedule, they are expected expenses related to attending college that go into the student's budget and include things like books, travel, and personal expenses.

The impact of financial incentives and aid on students' timely graduation has been the subject of research. Glocker. (2011) investigated the impact of financial assistance on the length of study for students from low-income households in higher education institutions in Germany. According to the study's findings, student financial aid reduces the likelihood of dropout, yet the impact on length of study was only marginally significant. The present study's results are consistent with those of Facchini et al. (2020), who examined the potential impact of student subsidies on the timely graduation and dropout rates of Italian students.

The study by Arce et al. (2015) investigates the persistent issue of high university dropout rates in Spain, particularly focusing on the region of Galicia. The authors highlight that approximately 20% of students leave their studies, with a notable trend indicating higher dropout rates during the economic expansion period (2001-2007) compared to the crisis (2007-2011). Galicia, while generally experiencing higher dropout rates than the national average from 2006 to 2009, showed a decline in the 2009/2010 academic year. The research categorizes dropout reasons into six factors: psycho-educational, evolutionary, family, economic, institutional, and social, with primary motivations including work-study incompatibility and challenges related to the university environment. The economic implications of these dropouts are significant, as they impose a cost of approximately 5,772 euros per student annually, contributing to a broader economic burden exceeding 1.5 billion euros for early dropouts. In response, the Spanish Ministry of Education has initiated an action plan aimed at

increasing enrollment in higher education to mitigate these rates and foster economic growth

Most (2008) investigated the influence of graduate student financial support on completion rates and time-to-degree among PhD students across four fields over a 25-year period at a prominent university. Utilizing competing risk duration models, the study reveals that the type of financial support significantly affects both completion rates and the duration of time to completion or dropout. Specifically, students receiving fellowships or research assistantships demonstrate higher completion rates and shorter times-to-degree compared to those funded through teaching assistantships, tuition waivers, or self-support. Notably, the research highlights that the type of financial support has a more pronounced effect on the overall completion rates than on the average durations of time to degree or dropout

Hwang et al. (2015) addressed the critical issue of doctoral degree non-completion, highlighting its economic, social, and personal ramifications. The study employed a fully mixed sequential research design to investigate perceived barriers faced by doctoral students, collecting both quantitative and qualitative data from a sample of 205 participants through a Reading Interest Survey questionnaire. The analysis identified six emergent themes: "external obligations" (36%), "challenges to doctoral-level researchers" (34%), "practical/logistical constraints" (23%), "emotional concerns" (15%), "program structure" (9%), and "support for completion" (8%). Additionally, three meta-themes "dissociation," "external/internal barriers," and "institutional/personal barriers" were established to elucidate the relationships among these primary themes. The study's implications suggest a need for addressing these barriers to enhance doctoral completion rates.

An empirical efficiency analysis of fifty-eight Italian public institutions and thirteen Dutch public universities is conducted in a study (Agasisti et al., 2016) to investigate the relationship between public higher education finance schemes and academic achievement at universities in the Netherlands and Italy. The findings show a substantial relationship between the relative efficacy of Dutch and Italian institutions and the policy viewpoint selected. It turns out that Dutch universities perform better when the goal is to create a big number of graduates with the least amount of resources

while achieving the European goals. However, Italian institutions fare much better when cost-cutting for a particular level of activity like the number of students is the main concern.

As stated by Wollast et al. (2018) many nations have well-documented issues regarding the high dropout rates in PhD programs. The variables linked to non-US Americans' completion of their PhDs, however, are the subject of very few studies. This study therefore seeks to examine the interactions of factor and their influence on postgraduate students dropout, the factors include: study funding, research area, master's degree, and marital status. By analyzing the population of doctorate students across all disciplines from the two main universities in the French-speaking Community of Belgium (N = 1509), the current effort aims to address these restrictions. The specific focus was on the following variables: gender, country, marital status, master's degree, whether or not students continued their education at the same university after transferring to a doctorate, and whether or not they stayed in the same. The findings show that when all four variables are taken into account in the same model, the dropout rate is directly correlated with the following four factors: funding, research area, master's degree, and marital status. Moreover, the findings imply that several of these variables, like gender and married status, interact. Furthermore, we've discovered that a build-up of risk variables causes a sharp rise in dropout rates. Ultimately, a time course analysis revealed that the biggest dropout rate, which is associated with a lack of money or scholarships, happens during the first two years of study.

In their comprehensive study on dropout and completion rates in European higher education, Vossensteyn et al. (2015) identify key concerns surrounding student retention and degree attainment, emphasizing the diverse objectives pursued by national governments and institutions. They categorize these objectives into three main areas: completion rates, time-to-degree, and retention, highlighting the significance of explicit goals and targeted policies in enhancing study success. The authors reveal that effective policy instruments fall into three categories: financial incentives, information and support mechanisms for students, and organizational improvements within institutions. Their findings suggest that countries with clear, consistent, and comprehensive policies achieve greater success in reducing dropout rates and improving completion rates. They advocate for a holistic approach that integrates study

success into the information provided to prospective students, financial frameworks, quality assurance processes, and educational pathways. Additionally, the study underscores the importance of increasing institutional accountability in fostering student success through practices such as effective selection, mentoring, and integration into academic life. To further advance the discourse on study success, the authors call for systematic international comparative data and rigorous analyses of existing policies, thereby contributing to a more informed policy debate and improved outcomes in higher education across Europe.

In his study, Harman (2003) explores the experiences of international PhD students at two prominent Australian universities, revealing a nuanced landscape of financial support, educational satisfaction, and career aspirations. While many students benefit from scholarships that include stipends, a notable minority face financial challenges and insufficient research resources. Despite these hurdles, the overall sentiment among international students is one of high satisfaction with their coursework, although concerns arise regarding supervision quality, workspace availability, and research project guidance. Language barriers and cultural differences complicate their adjustment to a more autonomous academic environment, yet these students remain optimistic about their career prospects, demonstrating greater confidence than their Australian counterparts. A significant portion anticipates pursuing research careers, viewing their PhD as a pivotal asset for future professional opportunities.

A study conducted in China by Xie et al. (2023) sought to determine whether increased investment improves university performance and whether other factors influence university productivity. This study examined the total factor productivity (TFP) of 60 Chinese institutions between 2006 and 2016 using the data envelopment analysis methodology. According to the study, TFP readings were generally constant and ranged from 0.950 to 1.050. The Chinese government's increased investment in universities did not improve their performance, despite the widespread notion that it would. However, the research discovered evidence that the productivity of universities is positively impacted by human resources (such as the postgraduate to faculty ratio), physical resources (such as campus area), and political issues (such as presidential tenure and mergers).

According to a study conducted in Bangladesh by Rashed et al. (2018), which sought to determine the factors, influencing undergraduate dropout rates in Bangladesh's private universities. A combination of qualitative and quantitative methodologies was used to accomplish the study's goal. The aim of the dropout survey study was to identify the variables that affect university program attrition among students. One hundred dropped students were asked to elucidate their reasons for leaving school. The respondents were conducted over the phone or in person. The survey established that financial difficulties and study pressure were the main causes of student dropouts.

In a study by Mkhai (2023) to examine the causes of slow completion among postgraduate students of the Information Studies Program at the University of Dar es Salaam. The study used both quantitative and qualitative research approaches. It included 61 respondents, of which 56 postgraduate students participated in a questionnaire survey and 5 lecturers were interviewed. The results showed that the majority of students took more than the time prescribed by the university to complete their studies. Responsible factors include students' inability to understand comments from supervisors, poor student-supervisor relationships, multiple roles and a poor research environment. Incompetence in research skills and financial constraints were also found to contribute to slow completion. The study concludes that slow completion among students is not due to an individual factor is attributable. Consideration of these factors is crucial to improving the timely completion of studies. Accordingly, this study recommends that the program should create a supportive learning environment for its students in order to improve learning outcomes.

A study conducted by Wamala et al (2012) in Tanzania by found that although student persistence in graduate programs is widely recognized as an important topic in the higher education literature, much of this work focuses on degree completion. The study examines the dynamics of attrition that lead to delay or non-completion of doctoral studies. Administrative data from 294 PhD students from Makerere University in the 2000 to 2005 enrollment cohorts were analyzed. The total time from the first enrollment to the submission of a thesis or a final copy was used as a measure of completion time. Multinomial logistics were used to assess the likelihood of graduation and extended candidacy rather than withdrawal five years after initial enrollment in the doctoral program. In the results, the estimated rates of extended candidacy (48.6%) and

withdrawal (36.4%) indicate a low rate of on-time graduation of PhD students at Makerere. The observed relationships, modeled by a range of candidate, candidacy and institutional variables, including department, suggest the need to establish measures to promote progress in doctoral studies in the early stages of entry and throughout the candidacy process

As noted by Mugendi & Githae (2021) in research conducted in Kenya, it is not uncommon for kids to drop out of school in many parts of the world. Many reasons for this problem have been cited, including institutional and individual reasons such as financial ability, gender, and motivation to complete a degree. Psychological distress has been cited as one of the issues leading to graduation failure, although it has not been thoroughly studied. The aim of the study was to determine the frequency of dropouts among postgraduate students in selected public universities in Kenya. Weiner attribution theory (1985) served as the basis for the study. The study is based on a correlational research design and was conducted at two selected public universities in Uasin Gishu and Nairobi counties with a target population of 945 graduate students. A sample of (N=273) was obtained from the two selected public universities through systematic random sampling. The study used questionnaires, focus group discussions and document analysis to collect data. The reliability of the questionnaire was determined using the split-half method from a pilot study conducted in Uasin Gishu County. The statistical package for the social sciences SPSS 23 was also used to analyze the data. Descriptive statistics analyzed demographic data while Pearson correlation was used to test the association between psychological distress and noncompliance. Regression analysis was used to clarify the nature of the relationship with the variable. Findings indicated an average non-completion rate of 2.5 years with most students citing financial constraints as the primary cause of their non-completion. Findings concur with those of Gérard et al. (2010) in a study in Spain, who concluded that financial support has a significant and positive impact on time-to-completion. The study recommended that students who wished to further their studies should first establish financial abilities for the education journey before they registered for their studies. This would ensure that they would not drop out of due to a lack of fees. The study further recommended that students should choose a study model that would favour their schedules to ensure that they did not go through a lot of stress trying to accomplish several tasks simultaneously

As study conducted in Kenya sought to determine the impact of research financing on research outcomes at multiple public universities in Kenya. It sought to determine how the qualities of academic researchers affect research outcomes in a subset of Kenyan public universities; it looked into how industry participation affects research outputs in a subset of Kenyan public universities; and how institutional governance structures affected research outputs in a subset of Kenyan public universities. The study discovered a knowledge gap after going over past research on the topic. This study's problem was investigated using a descriptive research design. The 161 researchers were academics from public universities in Kenya, such as the University of Nairobi, Kenyatta University, and Jomo Kenyatta University of Agriculture and Technology, (Adoyo, 2015). The results indicate that research outputs of selected public universities in Kenya is influenced by research funding, industrial involvement, university researchers characteristics and also by institutional administrative structures. The study concludes that research funding, university researcher characteristics, industrial involvement and institutional factors influences research outputs in public universities in Kenya.

The Government of Kenya is committed to ensuring that no child is left behind in terms of access to quality education the education sector is financed to about 5.4% of Gross Domestic Product (GDP), Republic of Kenya (2022). The financial allocation made to universities is essential so as to ensure sufficient staffing and physical resources. Considerations of resources include the total amount available nationally for higher education, as well as effective allocation and equitable distribution between and within institutions However; in Kenya resource levels have not reached even a minimum acceptable level. The funding gap has been worsening by the rapid increase in enrolments without corresponding investment, leading to a drop in the level of resource per student.

A study in Kenya Mobegi (2022) to investigated the effectiveness of the financing methods and their implications on students' access, completion rates, and quality education based on students' experiences at the University. Descriptive survey design was adopted for the study. The target population was 950 education students who were in their third and fourth years of study. Stratified random sampling was used to select 315 students to participate in the study. Questionnaires and interview schedules were

used to collect data. Documents were also analyzed. The study found that the most of the students relied on HELB and households support to finance their education. The amount of HELB loans allocated to students was inadequate hence other sources of funding are required to meet the full costs of education. Students from poor backgrounds resorted to menial jobs which affected class attendance and learning outcomes. Other students deferred their examinations affecting academic progression. The study concluded that the current methods of funding university education were not reliable as they negatively affected students' access, academic progression, completion rates, and quality of learning outcomes. The study recommended for an alternative financial system for students from poor families to complete their studies on schedule.

2.3 Student Characteristics in Public and Private Universities in Kenya

Results of a survey conducted in 56 Spanish universities on the justifications offered by students for thinking about giving up on their doctoral degrees. For this study the sample comprised 724 doctoral candidates in social sciences. A set of questions with an open-ended format was used to collect the data. Data showed that one-third of the sample the youngest, female, and mostly part-time participants reported having intended to drop out. The most often cited reasons for considering dropout were struggling to find a balance between work and home life and social concerns (Castelló et al., 2017).

As stated by Maddox (2017) at the start of their studies, the majority of PhD candidates want to complete their degree. But almost half of those who enroll in PhD programs never finish them. Using attribution theory, this dissertation investigates the following research question: Why do PhD students choose to leave their studies at universities on their own volition? Interviewing fifteen participants who had chosen to drop out of the PhD program, the study determined four criteria that were involved in that decision: Absence of direction and oversight, program contradiction with participant objectives, degree of inflexibility, and individual traits.

PhD Dropout is a persistent and challenging problem in higher education with significant impacts on individual students, academic institutions and society at large. The purpose of this study is to investigate the factors and their relationships that influence PhD students' decisions to drop out. The findings imply that a number of

important issues, including work-life balance, family obligations, social isolation, poor supervision, inadequate academic preparation, and financial restrictions, are accountable for school dropouts. The relationships between these variables and the ways in which the policies and culture of the academic institution may mitigate their impacts are also illustrated by these findings. This study's conclusions are consistent with those of Manevpreet et al., (2023). Among the things he discovered were work-life balance, family obligations, social isolation, poor mentoring, inadequate academic preparation, and lack of social support, contribute significantly to dropout rates, further revealed that these factors are interrelated, and their effects can be mitigated by the academic institution's policies and culture.

This paper evaluated graduate students' experiences pursuing doctorates at private universities. With ATLAS's assistance, 20 key informants were chosen and thoroughly interviewed using the case study design to get their opinions on the issue being investigated. In order to address the study questions, the data was subjected to a thematic analysis utilizing Ti version 8.0 software. The PhD degree's relevance to the students' current careers as well as their experiences with coursework, research projects, and student assistance were all highlighted. The findings also demonstrated that students are aware of the fundamental principles of reliable academic research. Nevertheless, it is not feasible for them to utilize the knowledge they have gained when writing their thesis because, at the time of program admission, their prior research knowledge was inadequate. The data suggests that students had different reasons for participating in the program. While those in academia needed the qualifications to successfully advance their careers, students from other sectors wanted to secure post-retirement opportunities. Finding a balance between academic and social life is the biggest challenge for graduate students (Inkinen et al., 2013). Therefore, striving to achieve balance requires intentional management of time, priorities, roles and responsibilities, and stress levels (Martinez et al, 2013)

The study "Factors Affecting Graduate Students' Decisions to Drop Out" by Amartayakul (2014) addresses a crucial gap in the literature on doctoral attrition, particularly within the realm of educational administration. The author conducts a two-phase analysis to explore the limited research on the factors contributing to the program failure of doctoral candidates. In the first phase, regression analysis is employed to

examine independent variables such as age, undergraduate GPA, GRE scores, and students' educational backgrounds to identify predictors of degree completion. The second phase involves surveying 152 PhD students from a mid-sized university in the Midwest, focusing on their personal perceptions of success and the reasons behind their decisions to either persist or withdraw from their programs.

In his 2019 study, Regis explored the intricate dynamics of doctoral student persistence and attrition, articulating a predictive model grounded in self-determination theory (SDT). The research reveals that perceived competence is pivotal in influencing dropout intentions, with autonomous and controlled regulations shaping this competence. Through a dual-method approach, involving a retrospective analysis of 422 completers and no completers and a prospective study of 1,060 enrolled PhD students over two trimesters, Regis uncovers that the support received from advisors and faculty significantly impacts students' motivational processes, ultimately affecting their likelihood of completing their programs. The findings emphasize that fostering perceived psychological needs through supportive academic relationships can enhance doctoral students' resilience, thereby reducing attrition rates and promoting successful completion of their degrees

Higher educational dropout represents a critical challenge in Hungary, where graduation rates significantly lag behind the OECD average, potentially attributable to persistent dropout rates from higher education programs. Despite extensive international research on this issue, existing methodologies for assessing dropout ratios remain inadequate due to a lack of consensus among experts, resulting in imprecise data that underscores the urgent need for further investigation. This study aimed to uncover the underlying reasons for delayed graduation and dropout through qualitative research grounded in established theories, analyzing seven individual interviews and a focus group with ten participants using a semi-structured interview format. The findings revealed that factors such as a misaligned choice of institution or course, the demands of employment during studies, commitments to competitive sports, and the influence of peers with negative attitudes toward education contribute to these challenges. The analysis not only illuminates these nuanced causes but also lays the groundwork for a broader, questionnaire-based study targeting a representative sample, enhancing the

understanding of dropout dynamics in the context of Hungarian higher education (Bocsi et al., 2019).

Cornér, et al. (2020) conducted a study examining how individual variations in interest among doctoral students in Denmark and Finland relate to experiences of burnout and intentions to drop out. Utilizing exploratory factor analysis, K-means cluster analyses, and various statistical tests, the research involved 365 respondents from social sciences and humanities disciplines through a Cross-Cultural Doctoral Experience Survey. The study identified several interest profiles: High interest, Moderate interest, Developmental research and impact, and Development and impact. While all profiles showed high developmental interest, they differed in the emphasis placed on instrumental and research interests. Notably, students in the Moderate interest profile exhibited signs of burnout and were more likely to consider dropping out, with similar tendencies noted in the Development and impact profile. The findings suggest that actively identifying and supporting students' interests is crucial, as interest is not static and a combination of research, development, and impact interests correlates with a lower risk of burnout and dropout.

This study aimed to identify both quantitative and qualitative factors influencing doctoral students' persistence to degree conferral in educational administration, conducted in two phases at a medium-sized Midwestern university. The first phase involved a survey of 152 doctoral students enrolled from 1986 to 2000, focusing on their perceptions of success and barriers to graduation. The second phase analyzed various independent variables—such as GRE scores, age, undergraduate and master's GPA, the type of institutions attended, and fields of study—using regression analysis to pinpoint predictors of program completion. Findings revealed minimal differences in graduate GPA and age between those who graduated and those who did not, but notable variances in GRE scores, particularly across gender. Students with undergraduate degrees from baccalaureate institutions exhibited the highest graduation rates, often coupled with master's degrees from research-focused institutions. An appendix provides the detailed survey instrument used in the study (Malone et al., 2001).

Vlado et al. (2024) highlight a significant oversight in higher education literature: the lack of attention to master's degree student attrition compared to undergraduate dropout rates.

Despite the availability of dropout statistics, there is a notable absence of predictive models specifically addressing this issue, leaving a critical gap as enrollment in postgraduate programs continues to rise. Their multi-method research combines administrative data from The Hebrew University of Jerusalem with insights from a survey of former students, revealing a 12% dropout rate among master's candidates. Utilizing a hierarchical logistic regression model, the study identifies academic performance as a stronger predictor of attrition than background variables, though much variance remains unexplained. Furthermore, exploratory factor analysis uncovers five key factors contributing to dropout: harassment, employment responsibilities, institutional challenges, family obligations, and the economic viability of the degree. The authors argue that addressing these specific issues is crucial for developing effective retention strategies.

The study by Pyhältö et al. (2012) investigates the multifaceted challenges faced by doctoral students, highlighting that despite their selectivity, many do not complete their Ph.D. programs. By surveying 669 students across various disciplines including Arts, Medicine, and Behavioural Sciences the research identifies key problem areas including general working processes, domain-specific expertise, supervisory relationships, integration within the scholarly community, and resource availability. Importantly, the findings reveal a significant correlation between students' well-being and their level of engagement in their studies, suggesting that addressing these challenges is crucial for enhancing doctoral education. The authors advocate for the implementation of more effective support mechanisms to help students navigate the complexities of their academic journeys.

Kipsha et al., (2013) in a study in Tanzania which sought to evaluate the effectiveness of Tanzania's state universities in utilizing its human resources to produce results, as demonstrated by the quantity of degrees awarded and internal revenue earned. The study determined the efficiency scores of the seven national governmental institutions using data envelopment analysis (DEA). The study's findings show that public

universities in Tanzania use human resources to generate output with an average degree of efficiency, based on the number of undergraduate and graduate students. This shows that public colleges are fulfilling their primary goal of transferring knowledge to society for the benefit of the country. It was also found that public universities are not effective in producing revenue when it comes to making money from investments, fees, research, and consulting, they do not make effective use of the human resources at their disposal. The study suggests that in order to lessen their reliance on the government and donors, public universities should increase their internal revenue generating.

Rong'uno (2016) examined the effect of institutional and student -related factors on Doctoral Studies completion rates in Education at selected Public Universities in Kenya. A descriptive survey design was used. The total number of participants was 115. The number of doctoral students who participated was 388 registered between 2009 and 2013. A questionnaire, document analysis guide and interview guide were used to collect data for the study. The study found out that about 50% of the teaching staff at the selected public universities were tutorial fellows, who cannot supervise PhD hence inadequate staff. Libraries lack adequate, relevant teaching and learning resources and ICT connectivity. Family responsibility, job commitment and lack of adequate writing skills derail most candidates.

Academic discipline and mode of the study did not appear to be a significant influencing factor. The universities' policies are that a doctoral degree course should take a minimum of three and a maximum of five years. The five factors studied (institutional administrative factors, supervision process, teaching/learning resources, different study programs and student -related factors) contributed 65.7% of the effects of institutional and student-related factors influencing doctoral studies completion rates. The study concluded that key factors influencing doctoral completion rates were program requirements, inadequate number of supervisors and individual student factors, including socio economic and lack of thesis writing skills.

2.4 Physical Facilities in Universities in Kenya

Quality of higher education is dependent on adequate physical environment and specific teaching resources. Most Universities report minimal equipment available in lecture halls lack of specialized equipment in laboratories. ICT resources are also inadequate

for students to partake in individual study outside class time (Allais, 2014). Only a handful of elite private universities have relatively adequate facilities and equipment, with projectors in each classroom, broadband access for students and classrooms with an adequate layout to allow for interaction and discussion. A study by Ngware et al. (2011) on quality of primary school inputs in urban settlements in relation to benchmarks of education quality indicators in Kenya indicated that, quality of education in government schools was better than private owned in respect to availability of both human physical resources. According to Fuller et al. (1999) the condition of school buildings is related to higher student achievement after taking into account student's background

In two Ghanaian public universities offering postgraduate research degree programs, Attakumah et al. (2023) conducted a study with the goal of identifying endogenous input uses that predict internal efficiency. Three hundred and eighteen research students and graduates from sixteen humanities departments and nine applied science departments made up the sample for this study. The study's participant sample was drawn using stratified random and snowball sampling approaches. The data was provided by questionnaires and document analysis guidelines. Utilizing reading materials from departments and libraries, faculty and student interactions, use of study spaces, and endogenous inputs that explained a large amount of variation in graduation rates were found to be significant predictors of students' outcomes. Policy should be developed with the goal of expanding endogenous input uses at universities, according to the study's recommendations.

A study in Uganda by Kyolaba (2011), on the relationship between learning environment and educational efficiency. Ex-post facto, descriptive comparative and correlation designs were employed. The population of the study comprised of three hundred eighty-seven teachers and third year students, who were selected through purposive and stratified random sampling. a checklist on internal efficiency was used. Frequency tables and percentage distributions, t-test, Pearson's Correlation Coefficient and Analysis of Variance were utilized to statistically analyze the data. The findings revealed that there was no significant difference in the levels of learning environment between private and public universities, however there was a significant difference in the level of teacher attributes between the teachers and students. The level of learning

environment was found not to be correlated to the level of educational wastage. The level of educational wastage was not significantly different between private and public universities. The study therefore concluded that the learning environment was not correlated with internal efficiency.

According to a 2013 study by Orodho et al, Books and other learning resources are important and reasonably priced additions to the learning process, in addition to other elements, Insufficient educational resources, such as buildings and instructional materials, can lower learning quality and render instruction ineffective (Vegas, 2007). Furthermore, Chiu and Khoo (2005) note that physical resources in schools are among the educational resource elements that have been shown to have a substantial impact on academic attainment.

2.5 Academic Staff

According to Rosemary (2005), the nature and quality of planned educational inputs significantly determine the outcome of educational provision. The inputs include: Educational Personnel include teachers /lecturers and the non-teaching staff. But teachers are the principal factor in educational provision and thus affect quality of education in a significant way. In an attempt to have effective learning and quality teaching, there is no dispute that selection and training of teachers who will foster performance is critical (World Bank, 2010). Qualification of teachers to a large extent influences their behavior positively (Wenglinsky, 2000).

A study conducted by Cepni et al. (2018) on the challenges faced by postgraduate students during their education involved 10 students who had previously obtained Master's degrees from different departments at Karabuk University Institute of Social Sciences. The students were chosen using convenient sampling in order to include as many departments as possible. Data for the study were gathered through a semi-structured interview form developed by the researchers. Data was analyzed through content and descriptive analyses. The findings revealed that the students encountered problems related to the supervisors more frequently, other problems related to housing, finances, difficulty in finding thesis subject, transportation problems, foreign language, and unnecessary procedures in thesis writing process and finally social pressure they reported that these problems decreased their motivation

The review paper titled "The PhD Experience: A Review of the Factors Influencing Doctoral Students' Completion, Achievement, and Well-Being" seeks to fill a significant gap in existing literature by focusing on the unique experiences of doctoral students, which have been largely overlooked in favor of undergraduate research. Analyzing 163 empirical articles, the study categorizes both external factors (such as supervision, social support, departmental culture, and financial resources) and internal factors (including motivation, writing skills, self-regulatory strategies, and academic identity) that collectively influence doctoral students' success, satisfaction, and well-being. By synthesizing these findings, the paper aims to inform stakeholders—students, faculty, and support staff—about optimal practices to enhance academic achievement while prioritizing mental and emotional health. It highlights prevalent issues such as declining well-being, financial strain, and challenges in balancing personal and academic responsibilities, contributing to a broader societal discourse on the realities of doctoral education. Ultimately, the paper advocates for a student-centered approach that not only recognizes the challenges faced by doctoral candidates but also promotes a supportive academic environment, thereby enhancing the perception of doctoral education as a rigorous yet rewarding journey (Sverdlik et al., 2018).

Meirani et al. (2021) states that although there are more lecturers at private institutions in Indonesia than at public universities, the purpose of this research is to examine why the former group is still trailing behind in terms of publications. It was created with a mixed-methods research approach that combines quantitative and qualitative techniques. While qualitative research is conducted through interviews to support the findings of quantitative research, quantitative research is conducted by means of a questionnaire. Two hundred and eight 208 instructors responded to the quantitative study using a basic random sampling technique. Eight informants were interviewed for qualitative study. The outcomes of the conjoint analysis show that the most crucial characteristics are motivation and instructional burden.

In their 2019 study, Tentsho, McNeil, and Tongkumchum examine the determinants of student dropout at Prince of Songkla University's Pattani campus, highlighting the growing global concern regarding student attrition. Analyzing data from 10,377 students enrolled between 2007 and 2011, the researchers found an overall dropout rate of 23.9%, with a notable decline in dropout rates from the second semester onward.

Employing a logistic regression model, the study identifies significant associations between student dropout and variables such as admission year, gender-religion, faculty, and first semester GPA. This research contributes to the extensive body of literature addressing student dropout, offering insights that could inform strategies to improve student retention in higher education institutions.

The study by Tsepiso et al. (2024) delves into the critical role of postgraduate supervision as an intense academic partnership aimed at fostering students' scholarly development. Through in-depth semi-structured interviews with 12 doctoral and master's students across two universities, the research examines how students perceive the guidance offered by their supervisors, emphasizing the importance of networking and motivational support throughout their research journey. Findings reveal a mix of strengths and weaknesses in supervisory support, with many students expressing a need for more direct assistance in research methodology and writing, alongside a noticeable gap in effective career mentoring. The study advocates for targeted training programs for supervisors, focusing on enhancing skills in writing guidance, networking, and motivational support, ultimately aiming to enrich students' academic experiences and improve their career preparedness. Effective communication is critical for successful postgraduate supervision, yet research by Cornér et al. (2020) highlights that cultural, racial, and educational disparities between supervisees and supervisors complicate this process, leading to challenges in attracting and retaining students in universities. The study aims to explore the impact of communication on postgraduate supervision in South African and Lesotho universities, employing an interpretive paradigm and qualitative case study design. Through face-to-face interviews and latent thematic analysis, the findings identify significant barriers to effective communication, such as cultural dominance, lack of mutual respect, inadequate training, and unprofessional behavior. To address these challenges, the study advocates for pairing students with experienced supervisors and emphasizes the importance of fostering two-way communication and comprehensive training to enhance respectful relationships between supervisors and students.

The characteristics of research mentorship offered to post-graduate students in universities in Southern Nigeria were the subject of a study undertaken by Olibie and Uzoehina (2015). Proportionate stratified sampling technique was used to select 180

post graduate students for the study. Questionnaire was used to collect data while frequencies and percentages were used to analyse the data. The findings indicate that setting of unrealistic deadlines and expectations, research mentoring across institutions was mainly characterized by supervisor's criticisms without providing insights; this resulted to erosion of students' self-esteem the findings concur Cepni (2018) et.al whose study recommended the need for focus on improving technical research skills, communicating high expectations to the students, self-monitoring processes, encouraging supervisor- research; curricular. A study by Momanyi, (2022) established that Supervision process is positively and significantly related to completion rate. The study adopted the descriptive research design with a population 3618 doctoral students. To achieve a high completion rate, supervisors and the students have a flexible schedule of when to meet. Feedback from the supervisors and supervisors to allow students to consult anytime if a concept is not well understood

Kipsha and Msigwa (2013) conducted a study with the aim of evaluating the efficiency of Tanzania's public universities in utilizing human resources to generate output, as demonstrated by the number of degrees granted and internal revenue generated, (2013). The study estimated the efficiency scores of the seven public institutions in the nation using data envelopment analysis (DEA). Based on the number of undergraduate and graduate students, the study's conclusions demonstrate that public universities in Tanzania use human resources to produce output with an average level of efficiency. This suggests that the main objective of public universities, which is to transfer knowledge to society for the advancement of the nation, is met. We discovered, however, we discovered that public colleges are ineffective in producing revenue. When it comes to making money from investments, fees, research, and consulting, they do not make effective use of the human resources at their disposal. The report suggests that in order to lessen their reliance on the government and donors, public universities should increase their internal revenue generating. Due to more expenditure in technology, improved revenue generation will support both the expansion of institutions and higher-quality outputs.

According to McKenzie and Santiago (2004), teacher education programs in many developing nations continue to be of poor quality and don't adequately address the needs of schools. Attributes of concern include number of teacher's available, pupils-

teacher ratios, and the personal characteristics of the individual teachers, these personal characteristics include academic qualification, pedagogical training, content knowledge, ability or aptitude and years of experience (Ankomah et al., 2005). The most evident manifestation of poor quality higher education in Kenya is large class sizes. (Foley et al., 2014). These relate mainly to undergraduate teaching, but there are also staff shortages at the postgraduate level: although class sizes are generally smaller for Masters and PhD student, there is a critical lack of supervisors in most cases (Ouma, 2007). In Kenya, lectures represent the only form of teaching, with few opportunities or tutorials or breakout seminar groups. Very high student lecturer ratios are evident across public institutions in Kenya, with an average of one lecturer for 70 students (Chege, 2015). According to (Ouma 2008) lack of qualified candidates with capacity compounds the low turnover of new PhDs in the country, and the loss of many highly qualified staff through brain drain; According to Odhiambo (2013), universities have difficulty recruiting students who are sufficiently qualified. Many institutions have also adopted a large percentage of part-time employees due to challenges in finding full-time employees and the associated costs.

2.6 Theoretical framework.

The study will be guided: Production Function Theory advocated by Coleman, (1966) and Human Capital Theory as advocated by Schultz (1961)

2.6.1 Production Function Theory

The education production function theory was developed in 1966 by a James S. Coleman, and promoted by Eric Hanushek. Then theory compares education to a firm. Where inputs undergo a process to become outputs. As such education production function refers to the process by which education inputs are converted to education outputs. If all the factors are kept constant the output will remain constant. The inputs of an education system constitute all financial, human resource, physical, time and opportunity cost. The outputs of education constitute the graduates produced by the system. The independent variables include cost of program, student characteristics, physical resources and academic staff; all these constitute the inputs which will influence the dependent variables or outputs. These outputs include the number of Graduates, Time taken to graduate, enrolment rates and dropout rates and wastage.

When examining the influence of postgraduate students and institution-based factors, the production function theory helps to elucidate how these inputs interact and contribute to the overall educational experience. For instance, student characteristics students' career objectives, responsibilities, nature of work of the student, family obligations time management and gender are vital inputs in this educational production function. The theory encourages a comprehensive analysis of how these student attributes can optimize or hinder educational outcomes.

Institution-based factors, on the other hand, encompass a range of variables including academic staff characteristics, availability and adequacy of physical facilities and cost of the postgraduate program. These factors can be seen as the organizational context in which the educational production function operates. By applying production function theory, synergy between student characteristics and institutional resources can be investigated. It can either facilitate or impede the internal efficiency of postgraduate studies. For instance a well-resourced institution with a strong faculty can enhance the learning experience, thus improving student performance and retention rates. Conversely, if the institution lacks adequate support systems or if students are not sufficiently motivated, even the best resources may fail to translate into effective learning outcomes. This interplay underscores the importance of optimizing both student and institutional inputs to achieve desirable outputs. Using this theory, the study will show how different inputs can produce different levels of outputs. from this theory, the study will seek to explain how cost of program, student characteristics, availability and adequacy of physical Resources and availability of Academic and Administrative staff influence internal efficiency of selected universities in Kenya

2.6.2 Human Capital Theory

Human capital theory was pioneered by Theodore W. Schultz in 1961 and promoted by Gary Becker. It advocates that higher educationist both a public and private investment decision for governments and its people. The theory posits that knowledge and skill are a form of capital, and that this capital is a product of deliberate investment. It posits that human beings can increase their productive capacity through greater education and skills training. The human capital theory emphasizes the need for significant allocation of resources to the expansion of educational systems. The provision of formal education is seen as an investment in human capital, the positive returns from this investment will

significantly outweigh the costs. Wahrenburg et al. (2007) argue that as a public investment, education leads to economic growth through increased productivity, social stability, and healthier lifestyles. Likewise, as a private investment choice, investment in education leads to; access to better paying jobs; reduced time spent in the unemployment market; faster transitions to enhanced career prospects and eventually increased lifetime earnings for those with more years of schooling.

Human capital theory serves as a foundational lens through which to examine the interplay between selected students and institutional factors that impact the internal efficiency of postgraduate studies in both public and private universities. Human capital theory posits that investments in education and training enhance an individual's skills, knowledge, and productivity, ultimately contributing to economic growth and personal advancement. This perspective underscores the importance of understanding how both student characteristics and institutional frameworks combine to influence educational outcomes.

In the context of postgraduate studies, selected students bring varying levels of human capital to their academic pursuits. Factors such as prior academic performance and professional experience are critical components of this human capital. These elements not only affect individual learning trajectories but also shape overall program effectiveness. Such as, students with robust academic backgrounds may navigate complex coursework more efficiently, thereby enhancing their educational experience and reducing dropout rates. Conversely, those with less preparation may struggle, affecting the overall internal efficiency of the program.

Simultaneously, institutional factors play a crucial role in facilitating or hindering student success. Public and private universities often differ in their resource allocation, support services, and availability of physical facilities, all of which influence how well students can leverage their human capital. For instance institutions with strong mentorship programs, access to research opportunities, and responsive faculty can significantly enhance student engagement and learning outcomes. These supportive environments not only optimize the educational experience for students but also contribute to higher retention rates and graduation rates, reinforcing the internal efficiency of the programs.

Additionally, the interplay between student attributes and institutional characteristics is significant. A highly motivated student may thrive in an institution that offers ample resources and support, while another student with similar motivation might falter in a less accommodating environment. Thus, understanding the synergies between selected students factors such as funding, infrastructure, and academic staff attributes is essential for assessing internal efficiency. Ultimately, human capital theory enriches the study of postgraduate education by revealing how selected student factors and institutional characteristics coalesce to influence internal efficiency

2.7 Conceptual Framework

This study has been conceptualized to show selected factors influence on internal efficiency of university education.

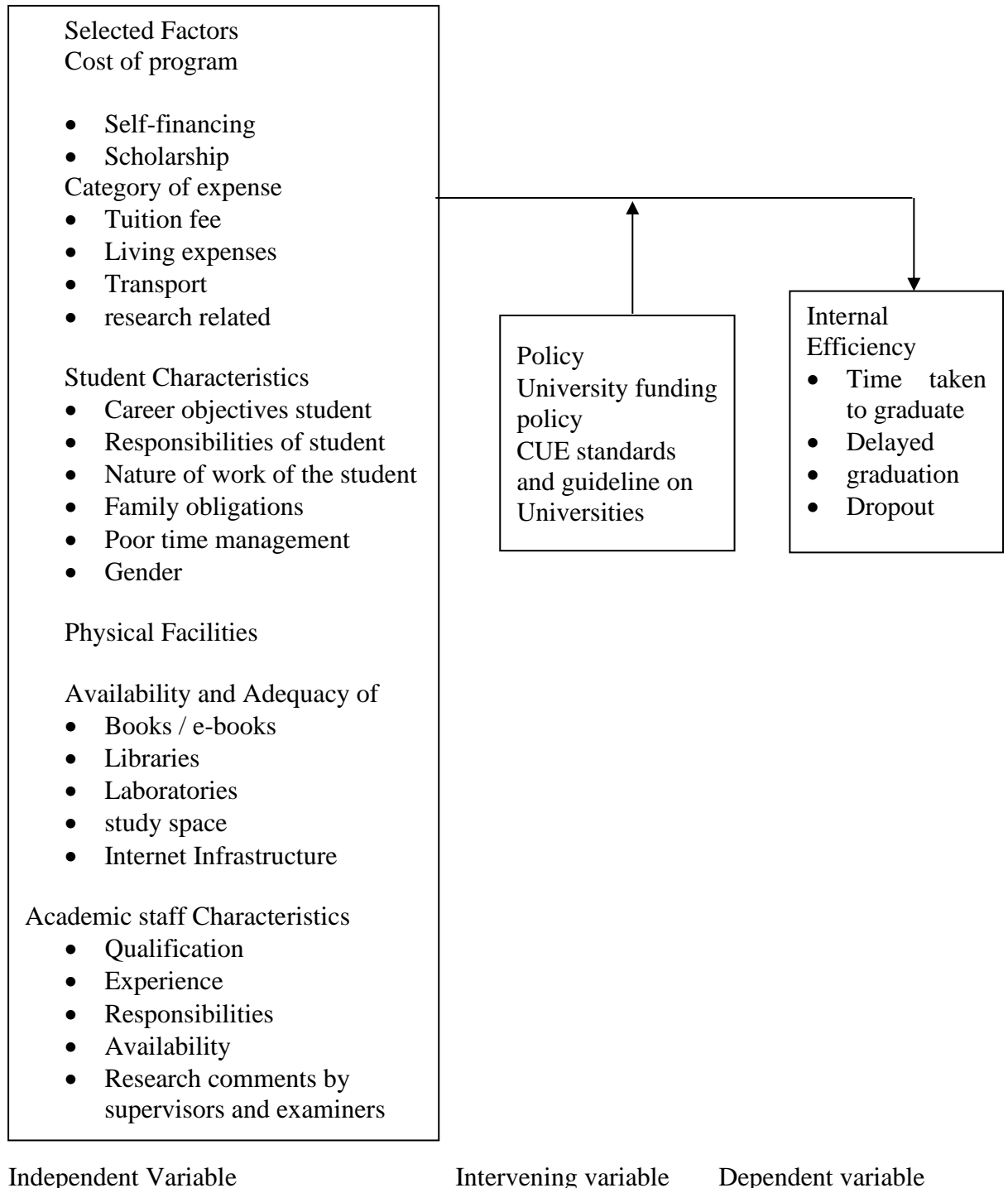


Figure 1: Conceptual Framework.

Selected factors are the independent variable of this study. Selected factors are comprised cost of the program, student characteristics, physical facilities and academic

staff. Cost of the program includes parameters such as social cost and private cost of higher education. Student characteristics include age of the student, residence of the student during studies nature of work and other responsibilities not related to employment. Physical facilities encompass libraries, laboratories lecture halls and internet infrastructure. Academic staff entails their qualification experience availability and adequacy. The dependent variable addresses internal efficiency with indicators including, number of graduates, studies completion time and wastage which is addressed by dropout, delayed graduation and repetition. Policy variable intervene the two variables and is indicated by university funding policy and CUE standards and guidelines on university education.

CHAPTER THREE

METHODOLOGY

3.1 Location of the Study

This study was conducted in Kenya, located in East Africa. The research focused on both public and private universities across the country, specifically in fifteen selected institutions. These universities were chosen due to ongoing issues of wastage, which are evident in delayed graduations and high dropout rates at the postgraduate level. The study aimed to investigate the influence of selected student and institutional factors on the internal efficiency of postgraduate studies in Kenya's public and private universities.

3.2 Research Design

The study adopted both descriptive and correlational research designs to establish the influence of selected factors on the internal efficiency of postgraduate studies in Kenya. The descriptive survey design was ideal for gathering data from the natural environment and enabled the generalization of the findings to actual situations (Raselimo, 2017). This design provided a detailed description of the influence of selected factors on the internal efficiency of postgraduate studies in universities in Kenya. It was also time-efficient and generated hypotheses for further investigation. According to Bhandari (2021), a correlational research design investigates relationships between variables without the researcher controlling or manipulating any of them.

3.3 Population of the Study

The target population is the entire group of subjects to which the findings of the study are generalized (Creswell, 2016). The target population of the study was 84983 comprising of 49 graduate schools' directors, 3835 senior teaching staff and 81099 masters and PhD students from forty nine 49 universities in Kenya chartered by 2016.

3.4 Sample Size Determination

To obtain the sample, the study used the formulae by Yamane (1967) as indicated below:

$$n = \frac{N}{1+N(e)^2}$$

Where n = represents sample size

e = level of precision at 0.05

N = population

$$n = \frac{84983}{1+84983 (0.05)^2}$$

= 398 sample

3.5 Sampling Procedures.

A sample is a subset of individuals from a larger population chosen in a way to ensure representation of the entire population (Cooper & Schindler, 2012), while Borg and Gall (2003) posits that at least 30% of the total population is a representative sample size for a scientific study. A total of fifteen (15) universities were selected for this study which represents 30% of the total number 49 of universities chartered by 2016 in Kenya. Proportionate sampling was used to apportion all the fifteen universities into two categories of public and private. Public universities will provide nine (9) while private produced six (6) universities. From the formulae developed by Yamane in (1967) a population of 84983 generates a sample of 398 respondents, therefore the sample for this study was 398 respondents. The sample comprised of 15 Directors, each university provided 6 academic staff, making a total of 90 senior teaching staff, and the balance of 293 constituted the postgraduate students. To obtain the number of postgraduate students 293 was divided by 15 universities giving 20 postgraduate students for each university. Purposive sampling was used to select the graduate school directors because each university was assumed to have one director. Simple random sampling was used to obtain the number of academic staff. A list of all the academic staff who teaches postgraduate students was obtained from the graduate school office and 20 academic staff members were chosen randomly. Again simple random sampling was used to obtain the postgraduate school student respondents, similarly a list of postgraduate students was obtained and 20 postgraduate students were picked randomly. The sampling matrix is presented in Table 3.

Table 3: Sampling matrix

	Population	Sample		Total
		Public	Private	
Students	81099	176	117	293
Senior teaching staff	3835	54	36	90
Directors	49	9	6	15
Total	84983	239	159	398

3.6 Research Instruments

The research used two research instruments for data collection, comprising of questionnaires and interview schedules (Appendix II & III)

3.6.1 Questionnaires

The questionnaires comprised both closed and open ended questions. For the closed ended questions, the Likert scale was used. Two questionnaires, each for graduate senior teaching staff, masters' and doctoral students were used. Use of questionnaires in data collection allowed greater uniformity in the way questions were asked and hence ensured greater comparability in the process. The entire questionnaires were divided into six sections. Section A will consisted of background information on respondents, section B contain questions on internal efficiency, section C collected data on cost of the postgraduate program, sections D; student characteristics, section E gathered data pertaining to physical facilities and section F collected data on academic staff characteristics.

3.6.2 Interview Schedule

Interview schedule was used to collect data for graduate school directors. Interview method of collecting data is often viewed as superior than other instruments because it creates rapport between the respondent and the researcher (Creswell, 2012). The study used structured interviews with open ended test items to gather qualitative data from the graduate school directors. Orodho (2012) posits that unlike questionnaires, interview schedules take more time and one should use a manageable number which is representative of the population. The interview schedule for postgraduate school directors had four items in line with the objectives of the study. Item one captured issues regarding the issues on the cost of postgraduate Studies. Item two focused on postgraduate students' characteristics, item three delved on physical facilities available

in the universities. Finally, item four captured information on academic staff characteristics.

3.7 Piloting

Piloting was conducted in two universities one public and the other private in this case, Technical University of Kenya a public University and Kabarak University a private University were chosen. The pilot study was conducted to test the suitability of the research instruments and evaluate their efficacy. Ismail et al. (2018) postulates that piloting helps to refine research questions, to figure out the best methods for pursuing such questions, and to estimate the time and resources that will be required to complete the larger version of the study According to Krause (2015) a reliable statistical representation requires a sample size of 10% of the total population, therefore for this study the sample composed of 40 students, 14 senior academic staff and 2 graduate school directors

3.7.1 Validity Test

Validity research instruments determines whether the items selected measured what they were intended to measure (Mwituria, 2015). The research instruments were validated by the help of the supervisors who are experts in the Faculty of Education and Resources Development of Chuka University. They checked face and content validity of the questionnaires. Interview schedule and the questionnaires were checked to confirm whether they were adequate to determine the influence of the selected student and institutional factors on internal efficiency of postgraduate studies in universities in Kenya. To determine the validity of the instrument, pilot study was conducted in two universities in Kenya. After piloting, the questionnaires were scrutinized to identify items that were unclear or ambiguous to respondents. This process improved the face validity of the instruments.

3.7.2 Reliability Test

Reliability is a measure of the degree to which research instruments yield consistent results after repeated trials (Mugenda & Mugenda, 2003). The reliability of this study was computed using Cronbach Alpha coefficient method. Leach (2013) posits that Cronbach coefficient is used to test internal consistencies of research instrument with Likert type of scales. For this study the correlation coefficient for each of the two

questionnaires was computed. Table 4, displays the reliability coefficient of the questionnaires given to the academic staff and postgraduate students.

Table 4: Reliability coefficient for academic staff and postgraduate student's questionnaires

Respondents	Number of Items	Reliability Coefficient
Academic staff	54	0.799
Postgraduate students	48	0.824
Average		0.812

Information shown on table 4 indicates the reliability coefficient for the study as 0.812. This correlation coefficient was calculated by finding the mean of the reliabilities of academic staff 0.799 and that of postgraduate students 0.824. According to Borg and Gall (2003) the reliability coefficient of 0.7 and above is acceptable for a scientific study, therefore the instruments were considered reliable for the study.

3.8 Data Collection Procedures

The researcher sought consent to collect data from the selected universities. Before data collection day the researcher trained the research assistants on how to collect the required data. On the data collection day, the researcher and the assistants requested a list of the postgraduate students and academic staff in the university. Simple random sampling technique was used to select 20 students and six academic staff from each university. Questionnaires were administered to the respondents who were present while a google link containing the questionnaires in google forms were sent to those not in the University for them to fill. The respondents who filled the questionnaires manually were given one week after they were collected. Similarly, the directors were interviewed as the other respondents were filling the questionnaire; directors who were not available during the data collection day were interviewed online.

3.9 Data Analysis

To collect qualitative and quantitative data the researcher used questionnaires and interview schedules.

3.9.1 Qualitative Data

The qualitative data from the interview schedules were carefully analyzed and organized into themes aligned with the study's objectives. Directors' responses were captured through verbatim reporting to maintain the authenticity of their perspectives. For example, one director remarked, "Supervisory delays are a major challenge," while another noted, "We lack adequate funding to support research." These excerpts were presented as part of the thematic analysis to provide insight into the experiences shared by the respondents

3.9.2 Quantitative Data

Questionnaires were used to collect quantitative data. Data was cleaned, coded, tabulated and assigned numerical values to help in analysis. Inferential and descriptive statistics were used to analyse these data using Scientific Package for Social Sciences (SPSS) version 26.0. Descriptive statistics involved presenting data using frequencies, percentages, mean and standard deviation. Quantitative data was analysed using Linear regression models. Regression analysis at 95% confidence level ($\alpha=0.05$) was conducted and a regression equation was used to approximate the degree at which internal efficiency was predicted by the cost of the program, student's characteristics, physical facilities and academic staff in universities in Kenya.

$$y = \alpha + \beta X + e$$

Where

- y: Dependent variable (Internal Efficiency)
- X: Independent Variable; X₁ Cost of the program
X₂ students Characteristics
X₃ Physical facilities
X₄ Academic staff
- α : alpha (constant) this is the y intercept, it represents the value of the dependent variable when the independent variable is zero.
- B Beta (constant) regression coefficient of the independent variable which represents change in the dependent variable for a unit change in the independent variable.
- e Error term represents unexplained variability or random error in the model

In this study, the Likert scale data were analyzed using descriptive statistics, focusing on the average ranks of responses to draw conclusions. The five-point Likert scale was treated as an interval scale, with the following categories and values: Strongly Disagree (1), Disagree (2), Undecided (3), Agree (4), and Strongly Agree (5). Since the Likert scale is assumed to have equal distances between points, it is treated as an interval measurement, making it suitable for parametric statistical tests such as simple linear regression.

Table 5: Likert Scale Interpretation of Data Analysis

Likert Scale	Mean Interpretation
Strongly Disagree	1.00 - 1.79
Disagree	1.80 - 2.59
Undecided	2.60 - 3.39
Agree	3.40 - 4.19
Strongly Agree	4.20 - 5.00

Example of Interpretation:

- A mean score of 4.30 would be interpreted as Strongly Agree, indicating that respondents strongly support the statement or factor being measured.
- A mean score of 2.45 would suggest Disagree, meaning respondents generally do not support or agree with the statement.

This framework for interpreting Likert scale data allows for a clear and structured way to draw conclusions about the responses. It provides an objective means to assess the level of agreement or disagreement within the data set, making it easier to identify trends or patterns that can be further analyzed using regression and other statistical techniques.

3.10 Ethical Considerations

The researcher obtained an ethical clearance letter from Chuka University Ethics Committee (Appendix VII) and submitted it to the National Commission for Science, Technology and Innovation to obtain a research permit to collect data. After obtaining the research permit from NACOSTI (Appendix VIII), In conducting this study, the researcher adhered to rigorous ethical standards to ensure the integrity of the research process and the protection of participants' rights. Ethical considerations were addressed by following key principles, beginning with informed consent. Each participant was

fully informed about the nature, purpose, and procedures of the study before providing consent. The researcher ensured that all participants understood their voluntary involvement, their right to withdraw at any stage without any penalty, and the potential risks and benefits associated with their participation. Prior to data collection, the researcher sought and obtained ethical approval from Chuka University's Ethics Committee. This approval involved a thorough review of the study's methodology, ensuring that it met ethical standards, particularly concerning the protection of human subjects. The researcher was granted a data collection clearance letter, which was presented to relevant authorities and respondents to legitimize the study's activities. To safeguard the respondents' privacy, confidentiality was strictly maintained. The researcher assured all participants that their personal information and responses would be handled with the utmost discretion. Data was anonymized, and identifying details were excluded from the final research outputs to protect participants' identities. Additionally, the researcher adhered to the principles of objectivity and non-discrimination, ensuring that all responses were treated with equal importance, free from bias or prejudice. Furthermore, academic freedom was respected throughout the study. The researcher maintained an open and respectful dialogue with respondents, allowing them to express their views and opinions without fear of retribution. It was made clear to participants that the data they provided would be used solely for the purposes of this study and academic research. The researcher also took steps to ensure that the research findings were presented honestly, without manipulation or distortion of the data. Overall, the researcher demonstrated a strong commitment to upholding ethical research standards, respecting participants' rights, and ensuring the responsible use of the data collected.

Table 6: Summary of the of Data Analysis

	academic staff and postgraduate students	Independent Variable	Dependent Variable	Test statistic
H ₀₁	There is no statistically significant influence of the cost of the program on internal efficiency of postgraduate studies in public and private universities in Kenya	Cost of the program	Internal efficiency	Simple Linear Regression
H ₀₂	There is no statistically significant influence of the student characteristics on internal efficiency of postgraduate studies in public and private universities in Kenya	Student Characteristic	Internal efficiency	Simple Linear Regression
H ₀₃	There is no statistically significant influence of the physical facilities on internal efficiency of postgraduate studies in public and private universities in Kenya	Physical facilities	Internal efficiency	Simple Linear Regression
H ₀₄	There is no statistically significant influence of the academic staff on internal efficiency of postgraduate studies in public and private universities in Kenya	Academic staff	Internal efficiency	Simple Linear Regression

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 General Overview

This study inquired into the internal efficiency of postgraduate studies in both public and private universities in Kenya. The primary objective is to examine how various factors, including program costs, student characteristics, physical facilities, and academic staff attributes, impact the timely completion and overall success of postgraduate students.

The study underscores the crucial role of higher education in driving economic development and the importance of universities in producing graduates who are prepared to contribute to the nation's advancement. Despite the Kenyan government's efforts, which include policy frameworks such as Vision 2030 and the establishment of the Commission for University Education (CUE), challenges remain in attaining the desired levels of efficiency within the higher education sector.

Findings indicates several factors that contribute to inefficiencies in postgraduate programs, including high dropout rates and delayed graduation timelines. Notably, these inefficiencies are more pronounced in PhD programs, where completion rates are significantly low. The report highlights the necessity for targeted interventions to mitigate barriers to efficiency in Kenya's higher education system, thereby ensuring that students, institutions, and society at large can fully benefit from postgraduate education.

4.2 Response Rate

Three hundred and ninety-eight questionnaires were distributed to 293 postgraduate students and 90 academic staff in 15 universities in Kenya. In addition, interview were conducted with 12 directors of graduate schools. **Table 7** illustrates the response rate.

Table 7: Response rates of Respondents

	Response		Non Response	
	Frequency	Percentage	Frequency	Percentage
Students	257	87.71	36	12.29
Academic staff	79	87.77	11	12.22
Directors of graduate schools	12	80.00	3	20.00
Total	348	87.43	50	12.56

Information presented in table 6 shows that 87.71% of the postgraduate students' and 87.77% academic staff filled the questionnaires respectively. The researcher as well interviewed twelve graduate school directors representing 80% of the target. As a result the overall response rate was 87.43%, while non-response rate was 12.56%. According to Draugalis et. al., (2009), a response rate exceeding 80% is considered sufficient and reliable if data is intended to be generalized.

4.3. Demographic Information

This section presents the demographic characteristics of the study's respondents, which include academic staff, postgraduate students, and directors of graduate schools. Understanding the demographic profiles of these groups is crucial for contextualizing the study's findings and drawing meaningful conclusions about the factors influencing internal efficiency in postgraduate studies. The demographic data provides insight into the composition and diversity of the participants, allowing for a more informative analysis of how individual and institutional characteristics may impact the efficiency and effectiveness of postgraduate education in both public and private universities in Kenya. The analysis begins with the academic staff, followed by the postgraduate students, and concludes with the directors of graduate schools.

4.3.1 Demographic Information of Academic Staff

The researcher sought to examine the gender distribution among academic staff in the study. The findings regarding the gender of academic staff are presented in Table 8.

Table 8: Gender Distribution of Academic Staff

Gender	Frequency	Percent	Cumulative Percent
Male	57	72.2	72.2
Female	22	27.8	100.0
Total	79	100.0	

From the data presented in Table 8, the percentage of male academic staff who participated in the Research was 72.2% while the female respondents were 27.8%. Therefore, both genders were represented though males were approximately three times more than the female respondents.

The researcher sought to examine the age distribution among academic staff in the study. The findings regarding the age of academic staff are presented in Table 9.

Table 9: Age of Academic Staff

Age brackets	Frequency	Percent	Cumulative Percent
Below 30yrs	2	2.5	2.5
31-40 years	19	24.1	26.6
41-50 years	17	21.5	48.1
51-60yrs	39	49.4	97.5
above 60yrs	2	2.5	100.0
Total	79	100.0	

Findings in Table 9, reveals a significant concentration of academic staff within the age group of 51 to 60 years, comprising nearly half of the total staff at 49.4%. This suggests a workforce that is aging, which may raise concerns about the potential loss of experience and institutional knowledge in the near future. The next largest group, those aged 31 to 40 years at 24.1%, indicates a younger cohort that could be positioned to step into leadership roles, but their relatively smaller proportion may not sufficiently offset the impending retirements of their older colleagues.

The presence of just 2.5% of staff under 30 years and above 60 years each highlights a possible gap in both entry-level talent and experienced staff, which could affect the institution's ability to innovate and adapt to changing educational demands. This demographic imbalance underscores the importance of strategic recruitment and mentorship programs aimed at cultivating younger faculty members, ensuring a smooth transition and continuity of knowledge within the academic environment. Generally, the data calls for proactive planning to address the aging workforce and to foster a more balanced age distribution among academic staff. The researcher aimed to investigate the categorization of academic staff based on the type of university they are affiliated with. The findings related to the category of university of academic staff are presented in Table 10

Table 10: Distribution of Academic Staff by Category of University

Category	Frequency	Percent	Cumulative Percent
Public	48	60.8	60.8
Private	31	39.2	100.0
Total	79	100.0	

According to data in Table 10, the majority (60.8%) of academic staff members was employed by public universities, while 39.2% by private ones. The differences in characteristics between academic staff in public and private institutions could also highlight variations in teaching methodologies, research focus, and support systems. For instance, public universities often have access to more substantial funding and resources, potentially leading to more robust support for academic staff and students alike. In contrast, private universities rely on alternative funding sources and exhibit different operational dynamics that can impact their internal efficiency

Further the researcher, sought the distribution of academic staff by qualification. The findings are presented in Table 11.

Table 11: Distribution of Academic staff by Qualification

Qualification	Frequency	Percent	Cumulative Percent
Assistant Lecturer	10	12.7	12.7
Lecturer	46	58.2	70.9
Senior Lecturer	9	11.4	82.3
Associate Professor	4	5.1	87.3
Professor	10	12.7	100.0
Total	79	100.0	

Information on Table 11, regard the academic staff characteristics and their influence on the internal efficiency of postgraduate studies reveal several important implications. Notably, the majority of the academic staff comprises lecturers, accounting for 58.2% of the total. This dominance suggests that the foundational level of instruction and mentorship in postgraduate programs is heavily reliant on this group. Their prevalence may indicate a need for more structured support and development opportunities to enhance their teaching methodologies, as they play a pivotal role in shaping the academic experience for postgraduate students.

In contrast, Assistant lecturers and professors each represent 12.7% of the academic staff. This relatively small proportion may limit the diversity of perspectives and expertise available to postgraduate students, who often benefit from a variety of teaching styles and research orientations. Furthermore, the presence of senior lecturers and Associate professors at 11.4% and 5.1% respectively highlights a potential gap in advanced mentorship and research guidance, which are crucial for fostering a robust

academic environment. The implications of these distributions suggest that the efficiency of postgraduate studies may be hindered by the current composition of academic staff. A more balanced representation of experienced faculty, particularly at higher ranks, could enhance research collaboration, provide richer academic guidance, and foster an environment of innovation. Therefore, institutions may need to consider strategies to recruit and retain a more diverse array of academic staff, especially those in senior roles, to strengthen the internal efficiency of their postgraduate programs. Such initiatives could ultimately lead to improved academic outcomes and a more enriching educational experience for students.

The researcher sought to understand the distribution of academic staff based on their years of supervision experience for master's students. The findings are presented in Table 12.

Table 12: Distribution of Academic Staff by Years of Supervision Experience of Master's Students

Years	Frequency	Percent	Cumulative Percent
0-2yrs	17	21.5	21.5
3-5yrs	21	26.6	48.1
6-8yrs	18	22.8	70.9
9-11yrs	5	6.3	77.2
Above 12yrs	18	22.8	100.0
Total	79	100.0	

The findings in Table 12 regarding the supervision experience of academic staff offer valuable insights into the internal efficiency of postgraduate studies. With 26% of academic staff having 3 to 5 years of supervision experience, there exists a substantial cohort of faculty members who are likely familiar with the intricacies of guiding master's students through the completion of their programs. This level of experience can contribute significantly to the effectiveness of supervision, fostering an environment where students feel supported and guided through their academic journeys. Additionally, the presence of 22.8% of staff with 6 to 8 years of experience suggests a healthy continuity of mentorship that can enhance the quality of postgraduate education. More experienced supervisors often bring a depth of knowledge and refined strategies that can help students navigate challenges, ultimately leading to higher completion rates and more efficient program progression.

Conversely, the 21.5% of staff who have supervised master's students for only 0 to 2 years may represent a potential gap in experience within the academic staff. This group might face challenges in providing the depth of guidance that less experienced students require, which could hinder the overall efficiency of postgraduate studies. The presence of faculty with limited supervision experience might necessitate additional support structures, such as mentorship from more seasoned colleagues or professional development opportunities aimed at enhancing their supervisory skills.

Furthermore, the relatively small percentage of respondents with 9 to 11 years and over 12 years of experience indicates that there might be a ceiling effect, where a significant portion of experienced faculty may be retiring or transitioning, potentially impacting the continuity of quality supervision in the future. This situation highlights the importance of institutional strategies to retain experienced faculty and to cultivate a pipeline of future supervisors through training and professional development. Consequently, these findings underline the critical role of academic staff characteristics in shaping the internal efficiency of postgraduate studies. A well-distributed mix of supervisory experience among faculty can enhance the learning environment, improve student outcomes, and ultimately contribute to the success of postgraduate programs. Institutions may need to consider these dynamics when planning for staff development and resource allocation to ensure that all students receive the level of support they require to thrive in their academic pursuits.

The researcher sought to analyze the distribution of academic staff based on their years of supervision experience with doctoral students. The findings related to the years of supervision experience of academic staff supervising doctoral students are presented in Table 13.

Table 13: Distribution of Academic Staff by Years of Supervision Experience of Doctoral Students

Years	Frequency	Percent	Cumulative Percent
0-2yrs	29	36.6	36.6
3-5yrs	17	20.5	57.1
6-8yrs	13	16.4	73.5
9-11yrs	11	13.9	87.4
Above 12yrs	10	12.6	100.0
Total	79	100.0	

The findings in Table 13, indicate that a significant portion of academic staff, specifically 36.6%, have only 0-2 years of experience supervising doctoral students to completion. This relatively low level of experience may impact the effectiveness of guidance and mentorship that students receive during their critical years of study. In contrast, those with 3-5 years of experience account for 20.5%, and their greater familiarity with the nuances of the doctoral process can contribute positively to student outcomes. Meanwhile, the cohort of academic staff with 6-8 years of experience, making up 16.4%, likely possesses even deeper insights into the challenges faced by doctoral candidates, enhancing their ability to provide targeted support and resources.

The numbers further illustrate a decline in the percentage of staff with more extensive supervisory experience; only 13.9% have supervised for 9-11 years, and a mere 12.6% for over 12 years. This trend suggests that institutions may face challenges in retaining experienced supervisors, which could affect the overall quality of supervision available to students. The implications of these characteristics are weighty. Inexperienced supervisors may lack the strategies and understanding necessary to navigate the complexities of doctoral research, potentially leading to longer completion times and decreased student satisfaction. Conversely, a robust mix of experience levels can foster a mentoring environment where less experienced supervisors can learn from their more seasoned colleagues, thereby improving the overall efficiency of the postgraduate program.

Ultimately, ensuring a balanced distribution of supervisory experience among academic staff is essential for enhancing the internal efficiency of postgraduate studies. Institutions should consider strategies to support the professional development of younger supervisors, as well as retention efforts for those with extensive experience, to create a nurturing academic environment that facilitates timely and successful student completion.

4.3.2 Demographic Information of Postgraduate Students

Demographic information sought on postgraduate students included age, gender, level of study, category of university, fees payment, time taken since enrolment and program status.

The researcher sought to explore the age demographics of postgraduate students. The findings concerning the age distribution of these students are illustrated in Table 14.

Table 14: Distribution of Postgraduate Student's by Age

Age brackets	Frequency	Percent	Cumulative Percent
Below 24yrs	8	3.1	3.1
25-34 years	128	49.8	52.9
35-44 years	83	32.3	85.2
45-54yrs	29	11.3	96.5
Above 55yrs	9	3.5	100.0
Total	257	100.0	

Table 14 present findings on postgraduate students' age distribution. A significant portion of respondents falls within the age brackets of 25-34 years (49.8%) and 35-44 years (32.3%), indicating that the majority of these students are likely to possess some level of professional experience and maturity. This demographic profile suggests that they are often balancing multiple responsibilities, such as work and family commitments, alongside their studies.

The presence of older students 11.3% aged 45-54 and 3.5% above 55 further enriches the academic environment, bringing diverse perspectives and life experiences that can enhance collaborative learning. However, the relatively small percentage of younger students (3.1% below 24 years) may point to a trend where postgraduate education is predominantly pursued after some initial years in the workforce, which can affect the dynamics of peer interactions and group projects.

These characteristics imply that the internal efficiency of postgraduate studies is influenced by the maturity and experience of the student body. Mature students may be more self-directed and better equipped to manage their time, fostering a more focused and productive academic environment. However, they may also require flexible learning options that accommodate their varied schedules. In contrast, the lower representation of younger students could indicate a need for programs that attract and support this demographic, ensuring a balanced academic community. Overall, understanding these age-related characteristics is essential for institutions aiming to enhance the internal efficiency of postgraduate studies, as they highlight the need for

tailored support systems and curriculum designs that cater to the diverse needs of their students.

Further, the researcher aimed to investigate the gender distribution of postgraduate students. The findings regarding the gender composition of these students are summarized in Table 15.

Table 15: Gender Distribution of Postgraduate Students

Gender	Frequency	Percent	Cumulative Percent
Male	140	54.5	54.5
Female	117	45.5	100.0
Total	257	100.0	

Table 15 presents data on gender distribution of postgraduate students. The gender distribution among postgraduate students was 54.5% male and 45.5% female suggests a fairly balanced representation of both genders, which can have significant implications for the internal efficiency of postgraduate studies. The interplay between gender and student characteristics, such as motivation, engagement, and academic performance, can shape the overall educational experience and outcomes.

For instance, male and female students may approach their studies with differing perspectives and strategies. Research often indicates that gender can influence learning styles, with female students typically demonstrating collaborative and communicative approaches, while male students may lean towards competitive and independent methods. These differences can affect classroom dynamics, group work, and peer interactions, ultimately impacting the learning environment and the effectiveness of educational practices. Furthermore, gender may also influence how students engage with academic resources and support systems. Female students, for instance, might seek out mentorship and collaborative study groups more frequently than their male counterparts, potentially leading to stronger networks of support. This difference in engagement can have cascading effects on retention rates, completion times, and overall academic success, which are critical components of internal efficiency in postgraduate education.

However, it is also essential to consider the potential for gender biases that may affect perceptions of competence and academic ability. Stereotypes can influence faculty expectations and student self-perceptions, which might impact performance and participation. Ensuring an inclusive and equitable environment is crucial for maximizing the internal efficiency of postgraduate programs, as it allows all students to thrive regardless of gender. The fairly even representation of male and female students in postgraduate studies holds the potential to enrich the academic experience. By recognizing and addressing the implications of gender on student characteristics, institutions can foster an environment that enhances internal efficiency, benefiting all students and contributing to their overall success.

The researcher aimed to explore the level of study among postgraduate students. The findings related to the levels of study of these students are presented in Table 16.

Table 16: Level of Study among Postgraduate Students

Level of Study	Frequency	Percent	Cumulative Percent
Masters	173	67.3	67.3
Doctorate	84	32.7	100.0
Total	257	100.0	

Table 16 presents data on the level of postgraduate students; a substantial majority of participants were at the Master’s level, comprising 67.3%, while 32.7% were pursuing doctoral degrees. This distribution highlights a crucial aspect of educational dynamics.

Master’s students often engage in coursework that emphasizes practical applications of knowledge, which may foster a collaborative and goal-oriented environment. Their relatively shorter program duration often necessitates a focused approach to time management and resource utilization, potentially leading to more immediate internal efficiencies within their programs. Additionally, their diverse backgrounds and motivations can enrich classroom discussions and collaborative projects, further enhancing the learning experience.

In contrast, doctoral students, who represent nearly a third of the participants, typically engage in more independent research. Their focus on original contributions to knowledge often involves navigating complex academic landscapes and undertaking

extensive projects that require significant time and resource investment. While this can lead to innovations and breakthroughs, the demands of such research can sometimes slow down the pace of program progression, impacting overall efficiency.

Moreover, the differences in academic maturity and experience between these two levels can influence peer interactions, mentorship dynamics, and the allocation of institutional resources. Master’s students may benefit from structured guidance, while doctoral candidates may require more autonomy and support tailored to their research needs. Ultimately, the varying levels of postgraduate students not only shape their individual experiences but also collectively influence the internal efficiencies of their programs. Understanding these dynamics can help educational institutions better tailor their support systems and curricular offerings, ultimately enhancing the overall effectiveness of postgraduate education.

The researcher further examined the category of university attended by postgraduate students, highlighting the distinctions between public and private institutions. The findings related to the category of university are presented in Table 17.

Table 17: Distribution of Postgraduate Students by Category of University

Category	Frequency	Percent	Cumulative Percent
Public	190	73.9	73.9
Private	67	26.1	100.0
Total	257	100.0	

Results presented in Table 17 illustrate the category of the universities. The category of the university public versus private plays a significant role in shaping the internal efficiency of postgraduate studies, influencing both student experiences and the educational environment. Public universities, which comprised 73.9% of the postgraduate students surveyed in the research, typically offer more extensive resources, funding opportunities, and access to established faculty. These factors can contribute to a more robust academic experience, facilitating research endeavors and enhancing learning outcomes. In contrast, the 26.1% of students from private universities may encounter different challenges and advantages. Private institutions often prioritize smaller class sizes and a more personalized approach to education, which can foster closer relationships between students and faculty. However, they may

also face resource constraints that can impact the availability of facilities and support services.

The disparity in student demographics between public and private universities highlights the importance of understanding how institutional characteristics influence postgraduate education. Students in public universities may benefit from greater institutional support, while those in private settings might navigate unique challenges that shape their academic trajectories. Thus, examining the interplay between university type and the internal efficiency of postgraduate studies can provide valuable insights into how to optimize educational outcomes for all students, regardless of their institutional affiliation. This nuanced understanding is essential for policymakers and educators aiming to enhance the quality and effectiveness of postgraduate education across diverse institutional landscapes.

The status of a postgraduate program, whether full-time or part-time plays a significant role in shaping the internal efficiency of students' educational experiences. Each mode of study brings distinct dynamics that affect various factors influencing academic success, resource utilization, and overall satisfaction.

The researcher further explored the program status of postgraduate students, distinguishing between part-time and full-time enrollment. The findings related to the program status of postgraduate students are presented in Table 18.

Table 18: Enrollment Status of Postgraduate Students by Program Type

Program	Frequency	Percent	Cumulative Percent
part time	111	43.2	43.2
Fulltime	146	56.8	100.0
Total	257	100.0	

Findings in Table 18, reveals that part time postgraduate students were 43.2% while fulltime students were 56.8%. Full-time students are more committed in their studies, dedicating significant time to coursework, research, and engagement with faculty and peers. This engagement fosters a stronger academic community, facilitating collaboration and enhancing access to resources like libraries, laboratories, and mentorship opportunities. However, the pressure to perform within a shorter timeframe

may also heighten stress levels, potentially affecting their mental health and academic performance.

In contrast, part-time students often balance their studies with professional responsibilities or personal commitments, which can lead to a more flexible, though fragmented, educational experience. This mode may promote greater diversity in the classroom, as part-time students bring varied perspectives and real-world experiences that enrich discussions. However, the need to juggle multiple responsibilities can detract from their ability to engage fully with the academics, limiting networking opportunities and access to support services. Additionally, part-time students may face challenges in maintaining momentum in their studies, leading to prolonged completion times that can affect motivation and academic outcomes. Finally, the influence of program status on the internal efficiency of postgraduate studies is multifaceted. While full-time programs can provide a more integrated and focused academic experience, part-time options offer valuable flexibility that can accommodate diverse life circumstances. Understanding these dynamics is crucial for educational institutions striving to optimize support and resources for all postgraduate students, ensuring that both pathways lead to successful outcomes.

Financing of postgraduate studies plays a crucial role in shaping the internal efficiency of educational outcomes. The researcher further examined the financing of postgraduate students' studies, categorizing the various sources of financial support. The findings related to the financing of postgraduate student studies are presented in Table 19.

Table 19: Sources of Financing for Postgraduate Students

Source of Finance	Frequency	Percent	Cumulative Percent
Self	212	82.5	82.5
Parent	30	11.7	94.2
Scholarship	15	5.8	100.0
Total	257	100.0	

Data presented in Table 19 shows that a significant majority, 82.5% of postgraduate students, are self-sponsored, while 11.7% receive financial support from their parents, and 15% benefit from scholarship programs. This distribution of funding sources has

profound implications for students' academic experiences and overall success. Self-sponsored students often face unique challenges. With the burden of financing their education independently, they may experience heightened stress and time constraints, which can detract from their academic focus and engagement. The necessity to balance work with study commitments can lead to reduced availability for research opportunities, networking, and participation in academic events—all vital components of a robust postgraduate experience. Consequently, this financial pressure may impede their ability to fully immerse themselves in their studies, potentially affecting their academic performance and time they take to graduate.

In contrast, students funded by their parents may experience less financial strain, allowing them to dedicate more time and energy to their academic pursuits. However, this arrangement can also introduce external expectations and pressures, as familial financial investment often comes with demands for high performance. Such dynamics can create a complex interplay between support and stress, influencing students' academic motivation and outcomes.

Scholarship recipients represent a distinct group, often selected for their academic merit or specific potential. These students may benefit from enhanced resources and networks that scholarships often provide, contributing to an enriched educational experience. However, if the scholarship is tied to specific conditions or performance metrics, it can lead to a heightened focus on grades rather than holistic learning. Ultimately, the financing model adopted by postgraduate students significantly influences their academic journey. The overwhelming prevalence of self-sponsorship raises critical questions about accessibility and the sustainability of postgraduate education. As institutions continue to evolve, understanding these dynamics is essential for fostering an environment that supports all students in achieving their academic goals efficiently and effectively.

The researcher further investigated the duration of time taken by postgraduate students since their enrollment, as this metric significantly contributes to understanding the internal efficiency of postgraduate studies. The findings regarding the number of years since enrollment for postgraduate students are presented in Table 20.

Table 20: Duration of Enrollment for Postgraduate Students

Yrs. since enrollment	Frequency	Percent	Cumulative Percent
less than one	23	8.9	8.8
1-2yrs	95	37.0	45.9
3-4yrs	93	36.2	82.1
5-6yrs	30	11.7	93.8
above 6yrs	16	6.2	100.0
Total	257	100.0	

Majority (37%), of the students had enrolled for between 1-2 years whereas 36.2% had enrolled for 3-4 years and 11.7% had enrolled for between 5-6 years. The percentages of those enrolled for less than 1 year and above 6 years were 8.9% and 6.2% respectively.

Data presented in Table 20 reveals that a considerable portion of students, 37%, completed their studies within 1-2 years, which suggests that this timeframe is indicative of an efficient academic structure that supports timely progress. The fact that nearly 36.2% of students took 3-4 years raises questions about potential delays in the educational process, whether due to the complexities of research, challenges in course load, or other personal circumstances. Moreover, the smaller percentages of students graduating in less than a year (8.9%) and those extending their studies beyond 6 years (6.2%) highlight a spectrum of experiences. The low percentage of students who graduate quickly may indicate a selective advantage for those who are particularly well-prepared or have fewer external obligations, while those who take longer could be facing significant barriers, such as financial constraints, work commitments, or difficulties in their research topics.

These variations in graduation timelines reflect on the internal efficiency of postgraduate programs. A high percentage of students graduating within a reasonable timeframe suggests that the institution likely has robust support systems, effective academic advising, and manageable workloads. Conversely, the notable fraction of

students who take longer may point to systemic issues, such as inadequate resources, lack of mentorship, or insufficient course offerings, which hinder timely graduation. Finally, the implications of these graduation timelines underscore the importance of examining the factors that contribute to both the successes and challenges faced by postgraduate students. By addressing the underlying causes of prolonged studies, institutions can enhance their programs, fostering an environment that promotes not only academic excellence but also timely completion of degrees. This would not only benefit the students but also the institutions themselves, as a higher graduation rate typically correlates with better institutional reputation and funding opportunities.

4.3 Diagnostic Tests

Before data was analysed their suitability was evaluated by various diagnostic tests to ensure their adequacy for analysis. The tests included, normality, multicollinearity, autocorrelation, and homoscedasticity tests

4.3.1 Normality Test

The normality test used Shapiro- Wilk test and the results are presented in table 20, from the data, Shapiro- Wilk statistic obtained ranged between 0.823 ($p=0.240$) for academic staff to 0.989 ($p=0.027$) for the cost of the program. When Shapiro- Wilk test statistic gives a non-significant result (with a sig value greater than 0.05), the data is taken to be normally distributed, (Tabachnick et Al., 2007). Consequently, the variables tested pass the normality test based on the Shapiro- Wilk test and hence it can be inferred that the data set was normally distributed. In this case the null hypothesis is not rejected.

Table 21: Normality Test

Variable	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	df	Sig
Internal Efficiency	0.262	336	0.200	0.849	336	0.134
Cost of program	0.060	336	0.027	0.989	336	0.051
Student Characteristics	0.251	336	0.014	0.850	336	0.092
Student Characteristics	0.206	336	0.111	0.865	336	0.210
Academic staff	0.071	336	0.240	0.823	336	0.089

a. Lilliefors Significance Correction

4.3.2 Multicollinearity test

Multicollinearity occurs when two or more independent variables have a high correlation with one another in a regression model, which makes it difficult to determine the individual effect of each independent variable on the dependent variable. VIFs between 1 and 5 suggest that there is a moderate correlation, but it is not severe enough to warrant corrective measures. VIFs greater than 5 represent critical levels of multicollinearity where the coefficients are poorly estimated and the p-values are questionable. As stipulated by Greene (2008) multicollinearity does not exist if the VIF falls between 1 and 10. Based on the findings in Table 22, the VIF values ranged from 1.268 to 1.698. All these values are less than 5. Implying there was no multicollinearity problem.

Table 22: Multicollinearity test

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	Collinearity Statistics	
	B	Std. Error	Beta	t		Tolerance	VIF
1 (Constant)	0.353	0.040		8.816	0.000		
Cost of program Student Characteristics	0.185	0.008	0.301	22.606	0.000	0.702	1.424
Physical facilities	0.189	0.010	0.229	18.205	0.000	0.788	1.268
Academic staff	0.249	0.010	0.378	26.012	0.000	0.589	1.698
	0.265	0.009	0.397	28.814	0.000	0.655	1.526

a. Dependent Variable: Internal Efficiency

4.3.3 Autocorrelation Test

Auto-correlation was assessed based on the Durbin- Watson test; the findings are represented in Table 22. The outcome of the Durbin-Watson test ranges from 0 to 4. An outcome closely around 2 means a very low level of autocorrelation. An outcome closer to 0 suggests a stronger positive autocorrelation, and an outcome closer to 4 suggests a stronger negative autocorrelation.

Based on the findings in Table 23, the Durbin Watson statistic is 2.011 which is approximately equal to 2 and further falls within the range of critical values, $1.5 < d < 2.5$ hence it was inferred that there was no autocorrelation.

Table 23: Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.984 ^a	0.969	0.968	0.08947	2.011

a. Predictors: (Constant), Academic staff, Cost of program, Student Characteristics, Physical facilities

b. Dependent Variable: Internal Efficiency

4.3.4 Homogeneity Test

The test for homogeneity of variables was done using the Kolmogorov Smirnov test. The test was aimed at determining whether the distribution of variables was same across all categories of universities namely; public and private. Based on the outcome in Table 24, it is apparent that the distribution of internal efficiency, cost of program, student characteristics, physical facilities and academic staff is the same across all categories of universities ranged from 0.115 for student characteristics to 0.874 for internal efficiency. The results indicated that the p- values for all the models constructs were insignificant therefore the likelihood of homogeneity occurring was dismissed

4.4 Internal Efficiency of Postgraduate Studies.

The study sought to examine the participant's opinions regarding internal efficiency of postgraduate studies in Kenya. The indicators were evaluated using a range of questions based on a five point Likert scale. The study first sought to examine the postgraduate students' completion and dropout rates from postgraduate students.

Table 24: Completion and Dropout Rates of Postgraduate students, (Postgraduate Students' opinions)

Statement	N	Mean	Std. Deviation	Interpretation
Students complete postgraduate studies within the expected period]	190	2.78	1.174	N
Students drop out of the postgraduate program before completion	190	3.27	1.177	N
Students in my postgraduate program experience delays in graduating]	190	3.11	1.353	N
Duration of my postgraduate program is appropriate for the course work and research requirements	190	3.91	1.239	N
The number of students who graduate later than expected is high	190	3.53	1.304	A
postgraduate program is efficiently structured to facilitate timely completion]	190	3.49	1.250	A

Information presented in Table 25 on Opinions of students regarding internal efficiency of postgraduate studies in Kenya, reveal that postgraduate program is efficiently structured to facilitate timely, (mean =3.49, SD=1.250), according to postgraduate students. However they also reported that the number of students who graduate later than expected is high, implying that in most students take longer time to graduate compared to the stipulated time (mean =3.53, SD=1.304). The findings concur with those of a study in Tanzania by Mkhai, (2023), who sought to examine the causes of slow completion among postgraduate students at the University of Dar es Salaam. The results of the study showed that the majority of students took more than the time prescribed by the university to complete their studies. Postgraduate students were undecided whether the duration of their postgraduate program is appropriate for the course work and research requirements. (mean =3.9, SD=0.696),

Further study sought to examine the postgraduate students' completion and dropout rates from the academic staff. The findings are presented in Table 26.

Table 25: Completion and Dropout Rates of Postgraduate Students (Academic Staff opinions)

Statement	N	Mean	Std. Deviation	Interpretation
Students complete postgraduate studies within the expected period	67	2.72	1.178	N
Students drop out of the postgraduate program before completion	67	3.22	1.204	N
Students in my postgraduate program experience delays in graduating	67	3.34	1.409	N
Duration of my postgraduate program is appropriate for the course work and research requirements	67	4.03	0.696	A
The number of students who graduate later than expected is high	67	3.48	1.146	A
postgraduate program is efficiently structured to facilitate timely completion	67	3.60	1.207	A

Information presented in Table 26 on Opinions of academic staff regarding internal efficiency of postgraduate studies in Kenya, show that postgraduate program is efficiently structured to facilitate timely, (mean =3.60, SD=1.207), they also reported that the duration of the postgraduate program is appropriate for the course work and research requirements(mean =4.03, SD=0.696), however the academic staff were not decided whether the postgraduate students in Kenya dropped out of the postgraduate program before completion, (mean =3.22, SD=1.204).

The study further sought to examine the academic staff opinions regarding percentage completion and dropout between public and private universities from postgraduate students based on percentage completion or dropout rates.

Table 26: Completion and Dropout Rates of Postgraduate Students (Postgraduate Students opinions)

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
Students complete postgraduate studies	16.3	30.4	17.9	31.5	3.9	2.7626	1.1734

within the expected period							
Students drop out of the postgraduate program before completion	5.8	27.2	17.1	34.6	15.2	3.2607	1.1817
Students in my postgraduate program experience delays in graduating	14.4	23.3	13.2	29.2	19.8	3.1673	1.3690
Duration of my postgraduate program is appropriate for coursework	6.2	7.0	7.8	44.7	34.2	3.9377	1.1232
The number of students who graduate later than expected is high	7.4	17.9	17.5	30.4	26.8	3.5136	1.2627
Postgraduate program is efficiently structured to facilitate timely completion	9.3	12.1	19.5	35.4	23.7	3.5214	1.2376

Data presented in Table 26 reveals that majority 59.1% of respondents (academic staff and postgraduate student's postgraduate agree that the program is efficiently structured to facilitate timely completion, 19.5% were undecided while 21.4% disagreed. On whether the duration of my postgraduate program is appropriate for the course work and research requirements, a majority 78.9% agreed, 7.8% undecided while 13.2% were undecided. According to 49.8% of the respondents students drop out of the postgraduate program before completion of their studies, 17.1% were undecided and 33% disagreed with the statement. Postgraduate students complete postgraduate studies within the expected period was not supported by 46.7% of the respondents, 17.9% were undecided while 35.4 agreed.

The study further sought to examine the academic staff opinions regarding percentage completion and dropout between public and private universities. (Academic Staff) based on percentage completion or dropout rates.

Table 27: Percentage Completion and Dropout in Public and Private Universities. (Academic Staff opinions)

Measure	University Category	percent					Total
		0-20%	21-40%	41-60%	61-80%	Above 80%	
What percent of your universities fulltime masters students complete in 2-3 years	Private	74.2	12.9	3.2	3.2	6.5	31
	Public	66.7	12.5	16.7	4.2	0.0	48
	Total	69.6	12.7	11.4	3.8	2.5	79
What percent of your universities part time masters students complete in 4-6 years	Private	64.5	16.1	0.0	19.4	0.0	31
	Public	54.2	20.8	16.7	4.2	4.2	48
	Total	58.2	19.0	10.1	10.1	2.5	79
What is the dropout rate of your universities part time masters students	Private	93.5	3.2	0.0	3.2	0.0	31
	Public	54.2	33.3	8.3	4.2	0.0	48
	Total	69.6	21.5	5.1	3.8	0.0	79
What is the dropout rate of your universities fulltime masters students	Private	87.1	12.9	0.0	0.0	0.0	31
	Public	54.2	33.3	4.2	8.3	0.0	48
	Total	67.1	25.3	2.5	5.1	0.0	79

Information presented in Table 27 indicate that majority 69.6% of academic staff, comprising of (74.2%), and (66.7%) respectively from private and public universities revealed that between 0-20% of the fulltime postgraduate students complete their studies between 2-3 years. Further (69.6%)indicated that the part time students complete their studies between 4-6 years, these academic staff comprised of (54.2%) and (64.5%)from public and private universities respectively. They also indicated that 0-20% of the fulltime postgraduate students' drop out of their studies, implying that more that 80% do not drop out. The respondents further indicate that between 0-20% of fulltime postgraduate students dropped out, this was according to (67.1%) of academic staff comprising of (54.2%) and (87.1%) from public and private universities. Thirty-two point nine percent of the academic staff indicated that a cumulative of at least 80% students continued with their studies. From the information obtained from the academic staff reveals that a higher percent of both part time and fulltime postgraduate students do not complete on the stipulated time, however a majority representing 0-20%of students a complete on the stipulated time. This concurs with the findings of a study in Tanzania according to Samuel et al. (2014) who posits that graduation rates are very low. Similar results were obtained in a study in New Zealand where 83% of PhD students completed their studies, with 17% opting out. The average degree completion period was reported as 4.1 years. The findings contradicted those from a study in Britain as reported by Amehoe (2023). Indicating that a master's degree can be obtained within 24 months part-time and full-time in nine to twelve months

4.5 Results and Discussion of the Objectives of the study

The study was guided by four objectives which included; the influence of cost of the program on internal efficiency, influence of student characteristics on internal efficiency, influence of physical facilities on internal efficiency and influence of academic staff characteristics on internal efficiency of postgraduate studies in universities in Kenya. This section presents findings: in order first with descriptive findings, hypotheses testing, qualitative findings and discussions and finally each objective. The respondents: academic staff and students were requested to respond to items on their extent of agreement or disagreement on a five point likert scale where 1- Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly Agree. Table 29 provides the standards for judging the means derived from the likert scale.

The first objective was to ascertain the influence of the cost of program on internal efficiency. The academic staff and students were requested to respond to items on the extent of agreement or disagreement on items on the cost of the program as pertains to mode of financing, tuition fees, living expenses, research related costs, financial counseling services and value of the program to student. The findings from the descriptive statistics and regression analysis are as shown in this section.

4.5.1 Students views on the influence of the Cost of the program

Students opinions on the influence of the cost of the program were sought and analysed as presented in Table 28

Table 28: Descriptive Statistics on Cost of Program-Students

Statement	N	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
The University offers sufficient financial aid and opportunities e.g. Scholarships, grants, loans% to support postgraduate students	257	35.4	37.4	11.7	7.8	7.8	2.15	1.210
The tuition fees for my postgraduate program are reasonable and reflects the quality of education provided	257	6.6	14.4	19.8	38.5	20.6	3.52	1.163
The payment options for tuition fees are flexible to accommodate financial situation	257	9.3	14.4	12.8	37.7	25.7	3.56	1.271
The university provides adequate support and resources for postgraduate students to find part-time work or assistantship to help manage costs	257	18.3	28	13.6	28.4	11.7	2.87	1.324
The accommodation provided by the University is affordable for postgraduate students	257	13.6	20.2	24.9	24.5	16.7	3.11	1.287
Additional costs associated with postgraduate program E.g books, lab fees, field trips% are communicated clearly and are manageable	257	8.9	19.8	21	29.6	20.6	3.33	1.255
The overall value of the postgraduate program justifies the cost	257	5.1	9.7	20.2	38.5	26.5	3.72	1.111
The financial counseling services provided by the university are helpful in managing and planning my educational expenses	257	10.1	30.7	17.5	29.6	12.1	3.03	1.223

Opinions of students about the influence of the cost of the program are shown in Table 28. The majority of students 72.8% held that the universities do not offer sufficient financial aid, opportunities such as scholarships, grants and loans to support postgraduate students in their studies while 11.7% were unsure. 15.4% of the students were in agreement with the assertion. Regarding whether the tuition fees for postgraduate program were reasonable and reflects the quality of education provided majority 59.1% were in agreement, 19.8% were unsure while 21% disagreed. Additionally, payment options for tuition fees are flexible to accommodate financial situation of the students, this is according to 63.4% of the students while 23.7% disagreed.

Majority of the students 46.3 disagreed with the statement that universities provides adequate support and resources for postgraduate students to find part-time work or assistantship to help manage costs. Thirteen percent were unsure whereas 40.1% agreed. Additional costs associated with postgraduate program like books, laboratory fees, and field trips are communicated clearly and are manageable this is according to 50.2% of the postgraduate students however 20.7% disagreed as 21% were not sure. Opinions on whether the financial counseling services provided by the universities were helpful in managing and planning students' educational expenses were varied since 40.8% disagreed while 41.7% agreed and 17.5% were undecided. The findings of this study reveal that majority of students were paying fees on their own and were not on scholarship hence they were at risk of dropout or taking longer to graduate, these findings agree with those of Natash, et al 2011% in a study designed to investigate financial predictors of student success in higher education established that Institutional scholarships are strong predictor of student persistence, progression, and timely graduation.

4.5.2 Academic staff views on the influence of the Cost of the program

Academic staff opinions on the influence of the cost of the program on internal efficiency of postgraduate studies in universities in Kenya, were in addition sought and presented in Table 29

Table 29: Descriptive Statistics on Cost of Program-Staff

Statement	N	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
The university offers sufficient financial aid opportunities e.g., scholarships, grants, loans to support postgraduate students.	79	34.2	40.5	5.1	16.5	3.8	2.13	1.178
The tuition fees for postgraduate program are reasonable and reflect the quality of education provided	79	5.1	16.5	5.1	55.7	17.7	3.65	1.109
The payment options for tuition and fees are flexible and accommodate postgraduate students financial situation	79	12.7	19.0	16.5	32.9	19.0	3.27	1.317
The university provides adequate support and resources for postgraduate students to find part-time work to help manage costs	79	12.7	26.6	13.9	25.3	21.5	3.16	1.372
The accommodations provided by the university is affordable for postgraduate students	79	41.8	20.3	8.9	17.7	11.4	2.34	1.460
Additional costs associated with the postgraduate program e.g., books, lab fees, field trips% are communicated clearly and are manageable.	79	8.9	34.2	13.9	36.7	6.3	2.97	1.154
The overall value of the postgraduate program justifies the cost	79	5.1	20.3%	26.6	31.6	16.5	3.34	1.131
The financial counseling services provided by the university are helpful in managing and planning postgraduate student's educational expenses.	79	5.1	46.8	8.9	30.4	8.9	2.91	1.157
Average Scores	79						2.97	1.235

The findings on Opinions of academic staff regarding the influence of the cost of the program are summarized in Table 29. The majority of academic staff 74.7% believed that the universities do not offer sufficient financial aid, opportunities such as scholarships, grants and loans to support postgraduate students in their studies while 5.1% were undecided. 20.3% of the academic staff were in agreement with the assertion. Additional costs associated with postgraduate program like books, laboratory fees, and field trips are communicated clearly and are manageable, according to 43% of the academic staff, 43.1% disagreed while 13.9% were not sure. Majority of the academic staff 51.9% disagreed while 39.3% agreed while 8.9% were not sure when asked whether the financial counseling services provided by the universities were helpful in managing and planning students' educational expenses.

Regarding whether the tuition fees for postgraduate program were reasonable and reflects the quality of education provided majority 73.4% were in agreement, 5.1% were undecided while 21.6% disagreed. On whether payment options for tuition fees are flexible to accommodate financial situation of the students, majority 51.9% of the academic staff respondents were in agreement though 31.7% disagreed and 16.5% were non-committal. Majority of the academic staff 46.8 agreed with the assertion that universities provides adequate support and resources for postgraduate students to find part-time work or assistantship to help manage costs, 13.9% were unsure whereas 39.3% disagreed. Generally, majority of the Academic staff noted that the cost of the program influenced the duration the postgraduate students take to graduate or dropout since the disagreed with a mean of 2.97. The study findings were in agreement with a study in Spain by Gérard et al 2010% which concluded that financial support has a significant and positive impact on time-to-completion. This study further recommended that students who wished to postgraduate studies should first evaluate their financial abilities for the education journey before they registered. This would guarantee that they would not drop out of due to a lack of fees.

4.5.3 Interview Schedule findings on the cost of Postgraduate Program and Internal Efficiency.

The opinions and views of graduate school directors were sought on influence of cost of the program on internal efficiency of postgraduate studies in universities in Kenya. The responses to the interview questions are presented in excerpt1.

Excerpts 1:

Researcher

In your own opinion how does the cost of postgraduate studies influence, the duration postgraduate students take to complete their studies?

In his response interviewee 1 observed that;

Respondent 1

Research requires a significant financial investment; the program's cost has an impact on later years that are primarily intended for research rather than the amount of time students spend on coursework. Students who receive scholarships complete their coursework faster because they afford the requisites. However, students who are self-sponsored require more time since they must spend what little money they have and put off their studies while they seek out additional

Additionally interviewee 2 on her part observed that

Respondent 2

the cost of the postgraduate studies does not influence the time students take to graduate, because students intending to pursue postgraduate studies plan for its cost before enrolling

According to Interviewee 3,

Respondent 3

The university do not offer sufficient financial aid and links to opportunities to organizations that provide scholarships, grants, loans to support postgraduate students financially. Hence postgraduate students find it difficult to complete their studies on the stipulated time.

Respondent 4, added that

Respondent 4 *The university provides adequate support and resources for postgraduate students to find part-time work to help manage costs hence; they have ample time to study in so doing completing their studies on time.*

The study findings from the directors correlate with a study in Bangladesh by Rashed et al. (2018), which sought to determine the factors, influencing undergraduate dropout rates in Bangladesh's private universities, the study established that financial difficulties and study pressure were the main causes of student dropouts. The responses reflect a spectrum of experiences among postgraduate students and suggest that while financial constraints can significantly impact academic efficiency, proactive institutional support and planning can mitigate these effects. The directors' views collectively indicate that addressing financial issues is crucial for enhancing the internal efficiency of postgraduate studies in Kenya, emphasizing the need for universities to invest in comprehensive support systems for their students.

4.5.4 Hypothesis testing for the cost postgraduate studies program.

Objective one examined the influence of the cost of the program on internal efficiency of postgraduate studies in universities in Kenya. The null hypothesis HO1 stated that: The cost of the program has no statistically significant influence on internal efficiency of postgraduate studies in public and private universities in Kenya. This hypothesis was tested by conducting a regression analysis at 95% confidence level $\alpha = 0.05\%$. Cost of the program as the dependent variable was regressed against the dependent variable internal efficiency.

Table 30: Regression Model for Postgraduate Students on the Cost of the Program

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	df1	df2	Sig. F Change
1	0.701 ^a	0.491	0.489	0.35831	246.140	1	255	0.000

a. Predictors: Constant%, Cost of program

From the findings in Table 30, the correlation coefficient R% is 0.701 while the Coefficient of determination R square% was 0.491. It can therefore be inferred that the relationship between the cost of the program and internal efficiency is strong. R square was calculated as 0.489 which indicates that 48.9% of the variable change in internal efficiency is explained by the cost of the program. There is therefore a significant relationship between the cost of the program and internal efficiency. The linear regression model of postgraduate students' responses on internal efficiency was computed and the results obtained are shown in Table 31.

Table 31: Regression Coefficients for cost of the program

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	Constant	2.218	0.093		23.813	0.000	2.035	2.402
	Cost of program	0.416	0.028	0.674	14.640	0.000	0.360	0.472

a. Dependent Variable: Internal Efficiency

The findings in Table 31, reveal that P-value is 0.000 which is <0.05, this implies that the internal efficiency was significantly influenced by the cost of the program. The t value was 14.640 and is > 2 further confirming that the cost of the program had a significant influence on the internal efficiency. The coefficient B was found to be 0.416, it infers therefore that 1% variation the cost of the program makes the dependent variable cost of the program to vary by 0.416% the regression equation becomes

$$Y = 0.416X_1 + 2.218$$

Internal efficiency + 0.416 cost of the program% + 2.218

Where, 2.218 is the constant

The results show that the cost of the program had a statistically significant influence on internal efficiency. The alternative hypothesis that there is a statistically significant influence of the cost of the program on internal efficiency of postgraduate studies in Kenya is accepted, and the null hypothesis that there is no statistically significant influence of the

cost of the program on internal efficiency of postgraduate studies in Kenya is therefore rejected.

Information obtained from postgraduate students was triangulated with data obtained from academic staff so as to validate the reliability.

Table 32: Regression Model for Postgraduate Academic staff on the cost of the program

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	df1	df2	Sig. F Change
1	0.650 ^a	0.422	0.415	0.39974	56.243	1	77	0.000

a. Predictors: Constant%, Cost of program

From the findings in Table 32, the correlation coefficient R% is 0.650 while the Coefficient of determination R square% was .415. It can therefore be inferred that the relationship between the cost of the program and internal efficiency is strong. R square was calculated as 0.489 which indicates that 41.5% of the variable change in internal efficiency is explained by the cost of the program. There is therefore a significant relationship between the cost of the program and internal efficiency. The linear regression model of postgraduate students' responses on internal efficiency was computed and the results obtained are shown in Table 33.

Table 33: Regression Coefficients for cost of the program

Model		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	Constant%	2.125	0.193		11.012	0.000	1.741	2.510
	Cost of program	0.457	0.061	0.650	7.500	0.000	0.335	0.578

a. Dependent Variable: Internal Efficiency

According to the findings in Table 33, the P-value is 0.000 which is <0.05, this implies that the internal efficiency was significantly influenced by the cost of the program. The t value was 7.500 and is > 2 further confirming that the cost of the program had a significant

influence on the internal efficiency. The coefficient B was found to be .0.457; it infers therefore that 1% variation the cost of the program makes the dependent variable cost of the program to vary by 0.457%. The null hypothesis stated as: the cost of the program has no statistically significant influence on internal efficiency of postgraduate studies in Kenya is rejected. The regression equation to approximate internal efficiency becomes.

$$Y = 0.457X_1 + 2.125$$

where, 2.125 is the constant

The results in Table 33 show that the cost of the program had a statistically significant influence on internal efficiency. The alternative hypothesis that there is a statistically significant influence of the cost of the program on internal efficiency of postgraduate studies in Kenya is accepted, and the null hypothesis that there is no statistically significant influence of the cost of the program on internal efficiency of postgraduate studies in Kenya is therefore rejected. Information obtained from postgraduate students was triangulated with data obtained from academic staff so as to validate the reliability. According to the results postgraduate students had the highest percentage of R square at 48.9% while the academic staff had 41.5%. The study therefore concludes that the cost of the program has a major influence on internal efficiency of postgraduate studies. The results concur with those of Mugendi et al (2021) in a study conducted in Kenya. According to the study an average non-completion rate of 2.5 years with most students citing financial constraints as the primary cause of their non-completion. The study recommended that students who wished to further their studies should first establish financial abilities for the education journey before they registered for their studies. Similarly, Mobegi (2022) found that the majority of students relied on household support and HELB to pay for their education. Since there were insufficient loans available, additional financing sources were needed to cover the entire cost of schooling. Due to this, students from low-income families were compelled to take up menial jobs, which had an impact on their attendance in class and influencing the time they take to graduate.

4.6 Student Characteristics and Internal Efficiency

The second objective was to ascertain the effect of the student characteristics on internal efficiency. The findings from the descriptive statistics and regression analysis are as shown in this section.

4.6.1 Students views on the Influence of the Student Characteristics

Students opinions on the influence of the students characteristics were sought and analysed as presented in Table 34

Table 34: Students response on the influence of Student Characteristics on Internal Efficiency

Statement	N	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
Balancing postgraduate studies with personal and professional responsibilities is challenging	257	3.8	3.5	10.5	42.8	39.3	4.10	0.989
Interacting and collaborating with peers of different age groups in the postgraduate program is easy.	257	4.7	25.7	11.7	44.4	13.6	3.37	1.137
My family obligations do not hinder my progress in postgraduate studies	257	10.1	33.1	10.1	26.8	19.8	3.12	1.337
The objectives of my postgraduate program align with my personal academic and career objectives	257	1.9	3.9	8.9	42.4	42.8	4.20	0.900
My gender has no impact on my ability to succeed in postgraduate studies	257	2.3	7.8	5.1	30.4	54.5	4.25	1.022
The nature of my work allows me to balance it with my postgraduate studies	257	9.3	15.6	19.5	36.2	19.5	3.40	1.231
I manage my time effectively to meet the demands of postgraduate studies.	257	1.6	15.2	17.5	42.8	23.0	3.68	1.037
Average Scores	257						3.73	1.093

Information presented in Table 34 Shows that majority of the postgraduate students respondents 82.1%% agreed that balancing postgraduate studies with personal and professional responsibilities is challenging. The percentage of unsure postgraduate students was 10.5% while 7.3% disagreed. Similarly, the majority of respondents 46.2% agreed that family obligations do not hinder their progress in postgraduate studies. Similarly, 43.2% Disagreed and 10.1% had no opinion. The findings concur with those of Mkhai whose study in Tanzania in 2023 found that the majority of students took more than the time prescribed by the university to complete their studies. Due postgraduate students having multiple roles. A significant majority 85.2% of respondents agreed, while 5.8% disagreeing that the objectives of their postgraduate degree program aligns with their personal academic and career objectives while 8.9% were non-committal. According to a majority 84.9% of respondents alluded that gender has no impact on their ability to succeed in postgraduate studies 39.2% disagreed while 5.2% were unsure. The nature of postgraduate students work allows them to balance it with their studies postgraduate studies as reported by the majority 55.7% the postgraduate students who agreed, however a significant proportion 24.9% disagreed while 19.5% were not sure. On whether postgraduate students manage their time effectively to meet the demands of postgraduate studies most 65.8% of the students agreed, 17.5% were not sure while 16.8% disagreed.

4.6.2 Academic Staff views on the influence of the Student Characteristics

Students opinions on the influence of the students characteristics were sought and analysed as presented in Table 36

Table 35: Academic staff response on the influence of Student Characteristics on Internal Efficiency

Statement	N	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
Postgraduate students find it challenging to balance personal and professional responsibilities with postgraduate studies	79		7.6	13.9	35.4	43	4.14	0.930
Postgraduate students find it easy interacting and collaborating with peers of different age groups in the postgraduate program.	79	1.3	30.4	21.5	38	8.9	3.23	1.025
Postgraduate students family obligations do not hinder their progress in postgraduate studies	79	50.6	19	7.6	17.7	5.1	2.08	1.328
The objectives of postgraduate program align with postgraduate students personal academic and career objectives	79	7.6	27.8	12.7	45.6	6.3	3.15	1.133
Postgraduate students gender has no impact on their ability to succeed in postgraduate studies	79	6.3	32.9	19	26.6	15.2	3.11	1.209
The nature of postgraduate students work allows them to balance it with postgraduate studies	79	7.6	45.6	10.1	29.1	7.6	2.84	1.159
Postgraduate students are able to manage their time effectively to meet the demands of postgraduate studies.	79	16.5	48.1	11.4	19	5.1	2.48	1.131
Average Scores	79						3.00	1.131

Information presented in Table 35, reveals that majority 88.4% of academic staff respondents agreed that Postgraduate students find it challenging to balance their personal and professional responsibilities with postgraduate studies. However 7.6% disagreed while 13.9% were not sure. On the statement that postgraduate students' family obligations do not hinder their progress in postgraduate studies, majority 69.6% of academic staff respondents disagreed, 22.8% agreed while a paltry 7.6% were unsure. Majority 69.6% of academics' staff respondents disagreed that Postgraduate students' family obligations do not hinder their progress in postgraduate studies, 22.8% agreed with the assertion but 7.6% were not sure. On whether the objectives of postgraduate program align with postgraduate students personal academic and career objectives many 51.9% of the academic staff agreed, 12.7% were undecided while 35.4% disagreed. Majority 41.8% of the academic staff agreed that postgraduate students gender has no impact on their ability to succeed in postgraduate studies, 39.2% disagreed while 19% were undecided. The findings also revealed that 53.2% of academic staff disagreed that the nature of postgraduate students work allows them to balance it with their postgraduate studies, 24.1% agreed while 10.1% were not sure. On whether postgraduate students are able to manage their time effectively to meet the demands of postgraduate studies, majority 64.6% disagreed, 24.1% agreed while 11.4% were undecided.

4.6.3 Interview findings on the influence of student characteristics on Internal Efficiency of Postgraduate Studies.

The opinions and views of graduate school directors were sought on influence of student characteristics on internal efficiency of postgraduate studies in universities in Kenya. The responses to the interview questions are presented in excerpt2

Excerpts 2:

- Researcher** In your own opinion what is the percentage completion rate and number of years taken to graduate of your postgraduate students?
- Respondent 1** *The completion rate of our master's and doctorate students is low, approximately 30% for masters and 40% for doctoral students. While*

the average time students take to graduate is 4 years and 6years for master's and doctorate respectively.

Respondent 2 *The completion rate of our master's and doctorate students is low, approximately 50% for masters and 58% for doctoral students. On average students take more than the stipulated time of 2year and 3 years for master's and doctorate degrees respectively. Masters students take averagely 4 years while doctorate students take 5 years.*

Researcher **In your own opinion explain how the following student characteristics influence the time take by postgraduate students take to graduate?**

Respondent 3 *The age of students influences the duration students take to complete their postgraduate studies. Younger students take a shorter time than their older counterparts to graduate, this attributed to the fact that the younger students do not have other issues to take care of compared the older ones who have so many responsibilities such employment, family related. They also have many financial obligations while the gender of the students do not influence the time they take to graduation.*

Respondent 4 *Work status influence of students influences the time they take to graduate or dropout. The working students find it difficult to attend classes or engage in research whereas the unemployed ones have ample time to study.*

Respondent5 *Students working in professions which are prone to transfers like police, administrators take long to graduate and even many dropout due to disruptions of their studies.*

Respondent 6 *Married students and those taking care of their families find it difficult to graduate on time due to family obligations, such that they have to share time with raising children and taking care of their families. This also put a strain in their finances too since they share the resources with their studies eventually they take longer time to graduate compared to the ones who are not married or have less family obligations.*

Respondent 7 *The nature of research impacts on the time postgraduate students take to graduate, students doing research using secondary data take less time to graduate compared to those who have to collect primary data and perform experiments in laboratories. Students who undertake research using laboratories facilities and those whose projects must be conducted during certain seasons take longer to graduate because these facilities are expensive and favorable seasons to conduct research may fail, prolonging the time these students take to graduate.*

The findings by a majority of the postgraduate students respondents was that balancing postgraduate studies with personal and professional responsibilities was challenging, they further revealed, family obligations hinder their progress in postgraduate studies. These findings corroborated those of the academic staff. These finding were supported by the directors of postgraduate schools who reported that work status, family obligations, nature of research of the postgraduate students influenced the time they take to graduate or dropout. The study findings are consistent with those of Manevpreet *et al.* (2023) noted that among other things work-life balance, family obligations, social isolation, poor mentoring, inadequate academic preparation, and lack of social support, contribute significantly to dropout rates, further revealed that these factors are interrelated, and their effects can be mitigated by the academic institution's policies and culture.

4.6.4 Hypothesis testing for the student characteristics of the program on internal efficiency

The second objective was to examine how the students' characteristics influenced internal efficiency of postgraduate students in universities in Kenya. The null hypothesis H_{02} stated that: there is no statistically significant influence of students' characteristics on internal efficiency of postgraduate studies in Kenya. This hypothesis was tested using regression analysis with a 95% confidence level, $\alpha = 0.05\%$ was conducted. Independent variable, students' characteristics was regressed against the dependent variable internal efficiency. The findings for postgraduate students are shown in Table 37.

Table 36: Regression Model for postgraduate students on Internal Efficiency

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	df1	df2	Sig. F Change
1	0.609 ^a	0.371	0.368	0.40082	152.049	1	255	0.000

a. Predictors: Constant%, Student Characteristics

Source: Research Findings 2024

The results in Table 36, shows that the value of Pearson correlation coefficient R was 0.609 which indicates that there was a strong positive correlation. This implies that the degree of correlation between the independent and dependent variable is strong. The coefficient of determination R square was calculated as 0.371. After adjustment the R Square becomes 0.368. As stated by Greene 2008%, R Square helps in explaining the percentage of changes in dependent variable due to a unit change in the predictor variable. Therefore it can be inferred that 36.8% of the changes in internal efficiency is explained by change in student characteristics. There is therefore a strong relationship between students’ characteristics and internal efficiency.

Table 37: Regression Coefficient for Postgraduate Students on Internal Efficiency

Model		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	Constant%	1.652	0.155		10.654	0.000	1.347	1.957
	Student Characteristics	0.506	0.041	0.609	12.331	0.000	0.425	0.586

a. Dependent Variable: Internal Efficiency

The data in Table 37 shows that the p- value is 0.000 which is < 0.05. This implies that the students’ characteristics had a significant influence on internal efficiency of postgraduate studies in Kenya. The value as computed was 12.331 which is >2. This implies that the students’ characteristics had a significant influence on internal efficiency. The B calculated

value was determined 0.506. It implies therefore that for every 1% increase on students characteristic the dependent variable internal efficiency% increased by 0.506%. From the findings, the student characteristics has a positive and significant effect on internal efficiency $r=0.506$, $p<.05\%$, it therefore makes the null hypothesis rejected. The implication is that with improved students' characteristics the level of internal efficiency improves significantly

The regression equation to approximate the internal efficiency becomes

$$Y = 0.506X_1 + 1.652$$

where, 1.652 is the constant

Further the regression was performed was on internal variable student characteristics% against the dependent variable internal efficiency%. The findings from the academic staff are presented in table 38.

Table 38: Regression Model for Academic Staff on Internal Efficiency.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	df1	df2	Sig. F Change
1	0.684 ^a	0.467	0.460	0.38379	67.548	1	77	0.000

a. Predictors: Constant%, Student Characteristics

The findings in Table 38 indicate a strong correlation of 0.684 between student characteristics and internal efficiency. From this data the correlation R squared was found to be 0.467 which indicate that for every 1% increase in student characteristics there is an increase of 46.7% in internal efficiency.

Table 39: Regression Coefficient for Internal Efficiency Academic Staff Characteristics%.

Model		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	Constant%	1.496	0.252		5.945	0.000	0.995	1.997
	Student Characteristics	0.550	0.067	0.684	8.219	0.000	0.417	0.683

a. Dependent Variable: Internal Efficiency

The findings in Table 39 reveals that the p-value is 0.000 which is <0.05 in means that internal efficiency was significantly influenced by the student characteristics. The value of t was 8.219 which is > than 2 affirming that the students characteristics influenced the internal efficiency. The findings indicated that the value of B was 0.550. It means that for every 1% change in the student characteristics produces a 0.550% change in internal efficiency. To estimate internal efficiency the equation below was used.

$$Y = 0.550X_1 + 1.496$$

Where, 1.496 is the constant

The results shown in Table 39 shows that the students' characteristics influences internal efficiency of postgraduate studies hence the time take by students to graduate. The findings regarding how students' characteristics influence internal efficiency are consistent with those of Manevpreet et al. (2023), on student characteristics influence on dropout rate of postgraduate students, which revealed that work-life balance, family obligations, social isolation, poor mentoring, inadequate academic preparation, and lack of social support, The results were also supported by Rong'uno (2016), who noted that family responsibility, job commitment and lack of adequate writing skills derail most candidates and contributes significantly to dropout rates.

4.7 Physical Facilities and Internal Efficiency

The second objective was to ascertain the effect of the student characteristics on internal efficiency. The findings from the descriptive statistics and regression analysis are as shown in this section.

4.7.1 Students views on the influence of the Physical Facilities

Students opinions on the influence of the physical facilities were sought and analysed as presented in Table 40

Table 40: Students responses on the influence of Physical Facilities on Internal Efficiency of postgraduate studies

Statement	N	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
The classrooms and lecture halls are well-equipped and conducive to learning	257	5.4	15.2	12.8	44	22.6	3.62	1.148
The library facilities meet my academic and research needs, providing adequate resources and study spaces.	257	6.2	13.2	7.4	49	24.1	3.72	1.150
Research facilities are up-to-date and support my academic and research activities	257	4.3	16	16	46.3	17.5	3.57	1.079
The availability of computer labs and access to necessary software is satisfactory	257	7.4%	23.7	16.3	39.3	13.2	3.27	1.174
The university provides sufficient and comfortable common areas and lounges for postgraduate students to relax and collaborate.	257	14	30.4	11.3	30.7	13.6	2.99	1.309
There are adequate facilities for health and wellness, such as gymnasiums, clinics, and counseling centers	257	7.8	27.2	14.8	33.5	16.7	3.23	1.234
The campus provides accessible facilities and resources for students with disabilities	257	6.2	26.8	12.5	37.4	17.1	3.32	1.212
The university ensures that all necessary safety and security measures are in place on campus.	257	3.5	7.8	12.8	48.2	27.6	3.40	1.008
The university's Wi-Fi and internet services are reliable and accessible across campus	257	5.8	16.7	5.4	44.4	27.6	3.75	1.197
Average Scores	257						3.43	1.168

The findings, on Table 40, reveal that postgraduate student's average mean for all items 3.43, SD=1.148% were in agreement that physical facilities influence internal efficiency of postgraduate studies. Majority of respondents agreed that classrooms and lecture halls are well-equipped and are conducive for learning with mean =3.62, SD=1.168%. Additionally, they were in agreement that the library facilities meet their academic and research needs, and provide adequate resources and study spaces, according to 73.1% of the respondents, 7.4% were undecided while 19.4% of the respondents disagreed. On whether the universities provide sufficient and comfortable common areas and lounges for postgraduate students to relax and collaborate. Majority 44.4% of the respondents disagreed, 44.3% agreed while 11.3% were undecided. A large proportion 72% of the postgraduate students agreed that the universities Wi-Fi and internet services are reliable and accessible across campus, 5.4% undecided while 22.5% disagreed. Research facilities are up-to-date and support students' academic and research activities according to a majority 63.8% however 20.3% disagreed while 16% were undecided.

4.7.2 Academic Staff views on the influence of the Physical Facilities

Academic staff opinions on the influence of the physical facilities were sought and analyzed as presented in Table 41.

Table 41: Academic Staff responses on the influence of Physical Facilities on Internal Efficiency of postgraduate studies

Statement	N	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviat
The classrooms and lecture halls are well-equipped and conducive to learning	79	5.1	24.1	22.8	41.8	6.3	3.20	1.042
The library facilities meet academic and research needs, providing adequate resources and study spaces.	79	1.3	30.4	13.9	44.3	10.1	3.32	1.057
Research facilities are up-to-date and support academic and research activities	79	2.5	43	17.7	30.4	6.3	2.95	1.049
The availability of computer labs and access to necessary software is satisfactory	79	2.5	45.6	19	26.6	6.3	2.89	1.038
The university provides sufficient and comfortable common areas and lounges for postgraduate students to relax and collaborate.	79	36.7	19	19	20.3	5.1	2.38	1.304
There are adequate facilities for health and wellness, such as gymnasiums, clinics, and counseling centers	79	24.1	36.7	15.2	22.8	1.3	2.41	1.127
The campus provides accessible facilities and resources for students with disabilities	79	19	8.9	16.5	40.5	15.2	3.24	1.351
The university ensures that all necessary safety and security measures are in place on campus	79	7.6	12.7	15.2	41.8	22.8	3.59	1.193
The university's Wi-Fi and internet services are reliable and accessible across campus	79	0	12.7	17.7	46.8	22.8	3.80	0.939
Average Scores	79						3.09	1.122

The study sought to find out from the academic staff if physical facilities were available and adequate numbers for use by postgraduate students. The findings are presented in table 41.

The findings, on Table 41, indicate that postgraduate student's average mean for all items 3.09, SD=1.122% indicate that physical facilities had no influence on internal efficiency of postgraduate studies. Majority 45.5% of the academic staff admitted that Research facilities are not up-to-date and therefore do not support academic and research activities, 17.7% were undecided while 36.7% disagreed. Computer labs and access to necessary software was satisfactory according to 32.9% of the respondent, 19% disagreed. However a majority 48.1% disagreed. Majority 55.7% of the academic staff disagreed that universities provides sufficient and comfortable common areas and lounges for postgraduate students to relax and collaborate, 19% were undecided while agreed 25.4%. According to a majority 60.8% of the respondents facilities for health and wellness, such as gymnasiums, clinics, and counseling centers were not adequate, were undecided 15.2% while agreed 25.4%. The universities Wi-Fi and internet services are reliable and accessible according to a majority 69.6% of the respondents, 17.7% were undecided and 12.7% disagreed.

Majority of postgraduate students' respondents agreed that classrooms and lecture halls are well-equipped and are conducive for learning with mean =3.62, SD=1.168%. Additionally, they were in agreement that the library facilities meet their academic and research needs, and provide adequate resources and study spaces, though majority of the respondents reported that universities do not provide sufficient and comfortable common areas and lounges for postgraduate students to relax and collaborate. They also reported that Research facilities are up-to-date and support students' academic and research activities. However academic staff respondents average mean for all items 3.09, SD=1.122 were undecided whether physical facilities had influence on internal efficiency of postgraduate studies. A large proportion 72% of the postgraduate students agreed that the universities Wi-Fi and internet services are reliable and accessible across campus, 5.4% undecided while 22.5% disagreed. Research facilities are up-to-date and support students' academic and research

activities according to a majority 63.8% however 20.3% disagreed while 16% were undecided.

From the findings by the postgraduate students the study concludes that the universities have enough classrooms and lecture halls which are well-equipped further the library facilities meet students' academic and research needs. The universities provide sufficient and comfortable common areas and lounges for postgraduate students to relax and collaborate. Wi-Fi and internet services are reliable and accessible. Research facilities are up-to-date and support students' academic and research activities. Therefore, the availability and adequacy of these facilities were thought to enable students complete their studies on time.

4.7.3 Interview Schedule findings on the influence of physical Facilities on Internal Efficiency of Postgraduate Studies.

The opinions and views of graduate school directors were sought on influence of physical facilities on internal efficiency of postgraduate studies in universities in Kenya. The responses to the interview questions are presented in excerpt 3

Excerpt 3:

Researcher *In your own opinion explain how the following physical facilities influence the time take by postgraduate students take to graduate?*

Respondent 1 *Physical facilities in my university are available and adequate therefore the students are able to use the when they require hence it helps them to graduate on time.*

Respondent 2 *Masters and doctorate students are assigned special spacious and comfortable rooms where it is easy for them to discuss with their peers, and supervisors making progress and graduation possible within the stipulated time.*

Respondent 3 *Computer laboratories equipped with internet facilities helps students during analysis of their research. Such students find it easy to do their analysis and therefore are able to graduate on time.*

Respondent 4 *Well facilitated supervisors are motivated to work with their students. In my University supervisors are allocated rooms to work from this enables them to interact with student with ease without interruptions. Timely financial remuneration of the supervisors upon successful supervision of students to completion motivates them to ensure that their students complete on time. *

The influence of physical facilities on the internal efficiency of postgraduate studies in universities is a crucial aspect of academic success, particularly in the context of Kenya. Insights gathered from graduate school directors illuminate how well-equipped environments can significantly impact the timely graduation of students. Firstly, the availability and adequacy of physical facilities play a foundational role in a student's academic journey. As noted by one director, when facilities are readily accessible, students can engage with them as needed, which directly contributes to their ability to meet graduation timelines. This availability removes unnecessary barriers, allowing students to focus on their studies rather than logistical challenges. The study findings were in agreement with findings from a study in Ghanaian by Attakumah et al. (2023). On identification of endogenous input uses that predict internal efficiency. Showed that utilizing reading materials from departments and libraries, use of study spaces, and endogenous inputs explained a large amount of variation in graduation rates and were found to be significant predictors of students' outcomes.

Moreover, the provision of technological resources, particularly computer laboratories equipped with internet access, is crucial. As noted by one director, who emphasized that these facilities support students in their research analysis. Having reliable access to technology aids in conducting research efficiently. Therefore, when

students are equipped with the necessary tools to perform their analyses, they can navigate the complexities of their projects more effectively, thereby reducing the time taken to graduate. Finally, the interplay between physical facilities and the internal efficiency of postgraduate studies is a multifaceted issue. Adequate resources, collaborative spaces, technological support, and conducive supervisory conditions collectively shape the academic landscape. By prioritizing these physical facilities, universities in Kenya can enhance their postgraduate programs, ultimately leading to improved outcomes for students and a more efficient educational process.

4.7.4 Hypothesis testing for the physical facilities on internal efficiency

The third objective was to examine how the physical facilities influenced internal efficiency of postgraduate students in universities in Kenya. The null hypothesis H_{03} stated that: there is no statistically significant influence of physical facilities on internal efficiency of postgraduate studies in Kenya. This hypothesis was tested using regression analysis with a 95% confidence level, $\alpha = 0.05$ was conducted. Independent variable, physical facilities was regressed against the dependent variable internal efficiency. The findings for postgraduate students are shown in Table 42.

Table 42: Regression Model for Postgraduate Students on internal Efficiency

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	0.812 ^a	0.660	0.659	0.29282	0.660	500.648	0.000

a. Predictors: Constant%, Physical facilities

From the findings in Table 42, the Pearson association Coefficient R was 0.812, this shows that there was a strong association between physical facilities and internal efficiency. Additionally the variable can explain 65.9% of the variable internal efficiency. As stated by Greene 2008, R Square denotes the percentage changes in dependent variable due to a unit change in the predictor variable. Therefore it can be inferred that 65.9% of the changes in internal efficiency is explained by change in physical facilities. Based on the p value,

<.05, it is apparent that the effect of physical facilities on internal efficiency was significant. The linear regression coefficient of Postgraduate Students response on physical facilities was computed results obtained in Table 43.

Table 43: Regression Coefficient for Physical Facilities

Model		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	Constant%	1.649	0.087		19.040	0.000	1.479	1.820
	Physical facilities	0.537	0.024	0.812	22.375	0.000	0.490	0.584

a. Dependent Variable: Internal Efficiency

From the findings in Table 43, the physical facilities had a positive and significant effect on internal efficiency $r=0.537$, $p<.05$. This implies that with improved physical facilities the level of internal efficiency improves significantly. The t value was found to be 22.375 and is > 2 which further confirms physical facilities have a significant influence on internal efficiency. Coefficient of B was 0.537 and the implication is that 1% rise in physical facilities contributes to the dependent variable internal efficient to increase by 0.537% therefore the null hypothesis stated as: physical facilities has no statistically significance influence on internal efficiency of postgraduate studies in Kenya. is rejected.

To estimate internal efficiency the equation below was used.

$$Y = 0.537X_1 + 1.649$$

where, 1.649 is the constant

The researcher further obtained the regression model for academic staff from their responses on the influence of physical facilities on internal efficiency of postgraduate studies in universities in Kenya. The results are presented in Table 44

Table 44: Regression for Academic Staff on Internal Efficiency.

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	F Change	Sig. Change	F
1	0.866 ^a	0.749	0.746		0.26327	230.181	0.000	

a. Predictors: Constant%, Physical facilities

Based on the findings on Table 44 the coefficient R value is 0.866 suggesting a strong association. The conclusion is that the link between internal efficiency and the physical facilities was strong. Consequently, the coefficient of determination R square was calculated as 0.749 which indicate that 74.9% of the variable internal efficiency can be explained by the physical facilities. This implies that there is a significant relationship between the physical facilities and internal efficiency of postgraduate studies in universities in Kenya. The linear regression of academic staff responses on availability and adequacy of physical facilities on internal efficiency was computed and are shown in Table 45.

Table 45: Regression Coefficient for Physical Facilities academic staff responses

Model		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	Constant%	1.562	0.133		11.723	0.000	1.297	1.827
	Physical facilities	0.557	0.037	0.866	15.172	0.000	0.484	0.630

a. Dependent Variable: Internal Efficiency

Findings from Table 45; reveal that the p value is 0.0000 which is < 0.05. Physical facilities therefore had a significant influence on internal efficiency of postgraduate students in universities in Kenya. The t value was 15.172 and is > 2 which confirms that physical facilities have a significant influence on internal efficiency. Coefficient B was found to be 0.557. It implies that for every 1% change in internal efficiency make the dependent variable change by 0.557%. Consequently, the null hypothesis stated as: physical facilities have no statistically influence on internal efficiency of postgraduate studies in universities

in Kenya is rejected. The regression equation used in the study to approximate the changes in internal efficiency is as follows.

$$Y = 0.557X_1 + 1.562$$

where, 1.562 is the constant

From the results the highest percentage of R square was by the by academic staff at 74.9% while postgraduate students at 66%. The study concludes that physical facilities had a significant influence on internal efficiency of postgraduate studies in universities in Kenya. The results concur with those of Attakumah et al. (2023), a study that focused on identifying endogenous input uses that predict internal efficiency. According to the findings utilization of reading materials from departmental and faculty libraries, study spaces and students interactions explained a large amount of variation in graduation rates and were found to be significant predictors of students' outcomes. Chiu and Khoo (2005) reported that physical resources in schools are among the educational resource elements that have been shown to have a substantial impact on academic attainment. The results from this study indicate that physical facilities are up-to-date and therefore support academic and research activities, making the students complete their programs on time.

4.8 Academic Staff Characteristics and Internal Efficiency

The fourth objective was to establish the influence of the academic staff characteristics on internal efficiency. The findings from the descriptive statistics and regression analysis are as shown in this section.

4.8.1 Students views on the influence of the Student Characteristics

Students opinions on the influence of the students characteristics were sought and analyzed as presented in Table 46

Table 46: The Influence of Academic Staff on Internal Efficiency Postgraduate Students

Statement	N	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	SD
The academic staff provides high-quality instruction in my field of study.	257	2.3	8.2	7	55.3	27.2	3.88	0.939
The academic staffs are approachable and available to provide guidance when needed.	257	1.6	9.3	10.1	48.2	30.7	3.91	0.962
The supervision I receive for my thesis or dissertation is effective and supportive.	257	0.12	10.1	10.5	42.4	35.8	4.02	1.002
My supervisor provides timely and constructive feedback on my research work	257	62.3	9.3	11.3	40.5	36.6	3.88	1.033
There are sufficient opportunities for regular meetings with my supervisor to discuss my progress	257	2.3	14.8	13.2	40.9	28.8	3.66	1.087
The mentorship program at the university helps me in achieving my academic and career goals	257	6.2	18.3	19.8	38.9	16.7	3.34	1.169
I am satisfied with the guidance and support I receive in developing my research skills.	257	5.1	8.9	10.1	58	17.9	3.84	1.041
The academic staff encourage and support student participation in conferences, workshops, and other academic events	257	6.9	7.8	8.9	47.9	29.6	3.91	1.147
There is a clear process for addressing any issues or conflicts with my supervisor or academic staff	257	7.4	10.05	12.8	43.6	25.7	2.85	1.126
The academic staff and supervisors are knowledgeable about the latest developments in my field of study	257	1.9	7	8.9	48.6	33.5	3.75	1.001
The academic staff respect and value the diverse backgrounds and experiences of postgraduate students	257	7.4	10.5	12.8	43.6	25.7	3.99	1.038
Average scores	257						3.73	1.049

Information presented in Table 46 reveals that majority 82.5% of postgraduate students respondents agreed, the academic staff provides high-quality instruction in my field of study, 10.5% disagreed while 7% were undecided. On whether the academic staff members are approachable and available to provide guidance when needed, majority 78.9% agreed, 9.9% disagreed while 10.1% were undecided. Majority 78.2% of students affirmed that the supervision they receive for their thesis or dissertation is effective and supportive and that supervision they receive is effective and supportive, 10.2% disagreed while 10.5% were undecided. Majority 69.7% of the respondents agreed that there are sufficient opportunities for regular meetings with their supervisor to discuss their progress, 13.2% were undecided while 17.1% disagreed. Majority of the respondents were satisfied with the guidance and support they received in developing their research skills further they confirmed that the academic staff respect and values their diverse backgrounds and experiences.

The academic staffs encourage and support student participation in conferences, workshops, and other academic events this is according to a majority 78.5% of the respondents; however, 14.7% disagreed while 8.9% were undecided. The students agreed that there is a clear process for addressing any issues or conflicts with their supervisors according to a larger proportion 69.3% of students who agreed. The findings in table 45 indicate that the average mean is 3.73 which indicate that most respondents agreed that academic staff influence the internal efficiency in their universities. The standard deviation of 1.045 <1% indicates that there was less variations in terms of the responses given. The highest mean is 4.012 which indicate that the supervision received for thesis or dissertation is effective and supportive. The lowest mean is 3.413 which indicate that most respondents agreed that the mentorship program at the university helped in achieving academic and career goals.

4.8.2 Academic Staff views on the influence of the academic Staff Characteristics

Academic staff opinions on the influence of the students' characteristics were sought and analyzed as presented in Table 48.

Table 47: The influence of Academic Staff on Internal Efficiency Academic Staff

Statement	N	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation	Interpretation
The academic staff provides high-quality instruction in my field of study.	79	0	17.7	13.9	48.1	20.3	3.71	0.989	
The academic staff is approachable and available to provide guidance when needed.	79	1.3	17.7	22.8	45.6	12.7	3.51	0.972	
The supervision I receive for my thesis or dissertation is effective and supportive.	79	2.5	31.6	20.3	35.4	10.1	3.19	1.075	
My supervisor provides timely and constructive feedback on my research work	79	20.3	22.8	21.5	30.4	5.1	2.77	1.22944	
There are sufficient opportunities for regular meetings with my supervisor to discuss my progress	79	1.3	40.5	19	32.9	6.3	3.03	1.025	
The mentorship program at the university helps me in achieving my academic and career goals	79	11.4	21.5	29.1	26.6	11.4	3.05	1.18645	
I am satisfied with the guidance and support I receive in developing my research skills.	79	3.8	26.6	21.5	40.5	7.6	3.22	1.046	
The academic staff encourage and support student participation in conferences, workshops, and other academic events	79	0.0	10.1	15.2	55.7	19	3.84	0.85381	
There is a clear process for addressing any issues or conflicts with students or academic staff	79	43	19	25.3	12.7	0	3.08	1.09512	
The academic staff and supervisors are knowledgeable about the latest developments in their students field study	79	0.00	16.5	27.8	48.1	7.6	3.47	0.85987	
The academic staff respect and value the diverse backgrounds and experiences of postgraduate students	79	2.5	19	20.3	45.6	12.7	3.56	1.02326	
Average scores	79						3.31	1.032	

Data presented in Table 47 reveals that majority 68.4% of postgraduate students respondents agreed, the academic staff provides high-quality instruction in their field of study, 13.97% were undecided, while 17.7% disagreed. Majority of the respondents agreed that the academic staffs are approachable and available to provide guidance when needed further they give timely and constructive feedback on their research work. A majority 38% of the respondents agreed that the mentorship program at the university helps them in achieving academic and career goals, 29.15 were undecided while 32.9% disagreed. Majority 48.1% of the respondents were satisfied with the guidance and support they received in developing their research skills further, 21.5% were undecided while 30.4% disagreed. Majority 58.3% of the respondents confirmed that the academic staff respect and value their diverse backgrounds and experiences, 20.3% were undecided while 21.5% disagreed.

The academic staffs encourage and support student participation in conferences, workshops, and other academic events this is according to a majority 78.5% of the respondents; however, 14.7% disagreed while 8.9% were undecided. The students agreed that there is a clear process for addressing any issues or conflicts with their supervisors according to a larger proportion 69.3% of students who agreed this contradicts findings of a study in Tanzania by Mkhai, (2023) who established that majority of students took longer to finish their studies than the amount of time specified by the university, because of bad research atmosphere and poor supervisory relationships,

4.8.3 Interview Schedule findings on the Influence of Academic Staff on Internal Efficiency of Postgraduate Studies.

The opinions and views of graduate school directors were sought on influence of Academic Staff on internal efficiency of postgraduate studies in universities in Kenya. The responses to the interview questions are presented in excerpts 4.

Excerpts 4:

Researcher

In your own opinion explain how the following academic staff characteristics influence the time master's and doctoral students take to graduate?

- Respondent 1 *Qualification and experience of the supervisors greatly influences postgraduate students' duration to graduate. The supervisors who are more qualified have more experience and have supervised more student therefore they guide their student with insight hence students take less time to graduate unlike those with supervisors recently qualified or do not possess requisite qualifications. Supervision load is not timetabled thus in most cases the student staff ratio is inappropriate appropriate. This results in too many students being supervised by very few faculty members this leads to supervisors not having enough time for their students. The study findings are consistent with those of Wenglinsky, (2000) who noted that Qualification of teachers to a large extent influences their behavior positively.*
- Respondent 2 *Co supervisor and student conflicts affects the time students take to graduate in my institution we emphasize on sharing of work between supervisors' because optimal learning environment occurs through continuous, open dialogue between student and supervisors. However in most instances supervisors take time to agree and sometimes do not agree at all this affects the quality and time of feedback to the student*
- Respondent 3 *Timely feedback from supervisors enhances students' motivation to continue on their postgraduate studies additionally it provides students with an opportunity to reflect on their work while it is fresh in their minds.*

The findings by a majority of the postgraduate students' respondents reveals that academic staff provides high-quality instruction and are approachable and available to provide guidance when needed, Further they reported that there are sufficient opportunities for regular meetings with their supervisor to discuss their progress. The academic staffs encourage and support student participation in conferences, workshops, and other academic events. There is clear process for addressing issues or conflicts with supervisors these findings are in line with those of the academic staff. These finding were supported

by the directors of postgraduate schools. Who revealed that there is Timely feedback from supervisors which enhances students' motivation to continue on their postgraduate studies additionally it provides students with an opportunity to reflect on their work while it is fresh in their minds. The research findings are consistent with Mkhai, E. 2023 study which noted that the majority of students took longer to finish their studies than the amount of time specified by the university, as a result of bad research atmosphere, supervisory relationships, and students' inability to understand remarks made by their supervisors.

The influence of academic staff characteristics on the internal efficiency of postgraduate studies is a crucial aspect of higher education, particularly in the context of Kenyan universities. Insights from graduate school directors reveal several dimensions through which these characteristics shape the postgraduate experience, notably regarding the time it takes for master's and doctoral students to complete their degrees.

A major factors identified is the qualification and experience of supervisors. Directors emphasized that more experienced and qualified supervisors possess the knowledge and skills to guide students effectively. This experience not only allows them to provide insightful guidance but also streamlines the supervisory process, helping students navigate their research more efficiently. Conversely, supervisors who are newly qualified or lack the necessary credentials can hinder progress. This disparity highlights the importance of matching students with well-qualified supervisors to optimize their chances of timely graduation. Moreover, the issue of supervision load emerged as a significant challenge. Many academic staff members are tasked with supervising a large number of students, often without a structured timetable to manage these responsibilities. This imbalance creates a scenario where few faculty members are overwhelmed with too many students, ultimately leading to insufficient support for each individual. The resultant lack of engagement can prolong the time it takes for students to complete their studies, as they do not receive the guidance they need in a timely manner.

Conflict between co-supervisors can also impact the efficiency of postgraduate studies. Effective collaboration between supervisors is crucial for creating an optimal learning

environment. When supervisors struggle to communicate or reach consensus, it can delay feedback and create confusion for students. This lack of harmony not only affects the quality of guidance but also demotivates students, potentially extending their study duration. The findings were supported by Mkhai, (2023) who revealed that the majority of students took longer to finish their studies than the amount of time specified by the university, due a bad research atmosphere, poor supervisory relationships, and students' inability to understand remarks made by their supervisors.

Timely feedback is another critical aspect highlighted by directors. Constructive and prompt responses from supervisors are essential for maintaining student motivation and facilitating continuous learning. When supervisors provide feedback promptly, students are encouraged to reflect on their work while it is still fresh, allowing them to make necessary adjustments quickly. This dynamic not only enhances the learning process but also contributes significantly to reducing the time taken to graduate. The study findings were in agreement with those of a study by Momanyi, (2022) who established that Supervision process is positively and significantly related to completion rate

4.8.4 Hypothesis Testing for Academic Staff Characteristics

The researcher undertook to test the fourth hypothesis H₀₄: stated as: There is no statistically significant influence of academic staff on internal efficiency of postgraduate studies in universities in Kenya. Regression analysis at 95% confidence level $\alpha = 0.05$ was used to evaluate the hypothesis. Academic staff characteristics were regressed against internal efficiency.

Table 48: Regression Model of Academic Staff on Internal Efficiency.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	Sig. Change	F
1	0.789 ^a	0.623	0.621	.031116	428.862	0.000	

a. Predictors: Constant%, Academic staff characteristics

According to the findings in Table 48, there is a strong positive association between academic staff and internal efficiency. With the value of the correlation coefficient R is 0.789 additionally the coefficient of determination R Square was found to be 0.623. Greene (2008) noted that R Square helps in explaining the percentage of changes in dependent variable due to a unit change in the predictor variable. Therefore, it can be inferred that 62.3% of the changes in internal efficiency is explained by change in academic staff. Based on the p value, <.05, it is apparent that the effect of academic staff on internal efficiency was significant. As a result, it is concluded that academic staff characteristics influences internal efficiency in postgraduate studies in universities in Kenya.

Table 49: Regression Coefficient for on Internal Efficiency Postgraduate Students

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	Constant%	1.535	.099		15.526	0.000	1.340	1.729
	Academic staff	0.522	0.025	0.789	20.709	0.000	0.472	0.572

a. Dependent Variable: Internal Efficiency

From the findings in Table 49, the p value is 0.0000 which is < 0.05. Academic staff characteristics consequently had a significant influence on internal efficiency of postgraduate students in universities in Kenya. The t value was 15.526 and is > 2 which indicates that academic staff has a significant influence on internal efficiency. Coefficient B was found to be 0.522. It denotes that for every 1% change in academic staff make the dependent variable change by 0.522%. Accordingly, the null hypothesis stated as: Academic staff have no statistically influence on internal efficiency of postgraduate studies in universities in Kenya is rejected. The regression equation used in the study to approximate the changes in internal efficiency is as follows.

$$Y = 0.522X_1 + 1.535$$

$$\text{Internal efficiency} = 0.522 \times \text{Academic staff\%} + 1.535$$

Where, 1.535 is the constant

The findings show that academic staff characteristic had a statistically significant influence on internal efficiency. The alternative hypothesis, that there is a statistically significant influence of academic staff on internal efficiency in postgraduate studies in universities in Kenya is accepted and therefore the null hypothesis that there is no statistically significant influence of academic staff on internal efficiency in postgraduate studies in universities in Kenya is rejected. The information obtained from the postgraduate students was triangulated with data collected from academic staff so as to validate the reliability.

Table 50: Regression Model on Internal Efficiency academic Staff characteristic

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	Sig. Change	F
1	0.732 ^a	0.535	0.529	.035838	88.769	0.000	

a. Predictors: Constant%, Academic staff characteristic

The findings in Table 50, point to a strong association between academic staff and internal efficiency. With the value of the correlation coefficient R is 0.732. In addition, the coefficient of determination R Square% was found to be 0.535. As a result, it can be inferred that 53.5% of the changes in internal efficiency is explained by change in academic staff. Based on the p value, <.05, it is evident that the effect of academic staff on internal efficiency was significant. Consequently, it is concluded that academic staff influences internal efficiency in postgraduate studies in universities in Kenya.

Table 51: Regression Coefficients on Internal Efficiency Academic Staff Characteristics

Model		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	Constant%	1.716	0.197		8.712	0.000	1.324	2.109
	Academic staff	0.464	0.049	0.732	9.422	0.000	0.366	0.562

a. Dependent Variable: Internal Efficiency

Findings in Table 51 indicate the p value is 0.0000 which is < 0.05. Academic staff accordingly had a significant influence on internal efficiency of postgraduate studies in

universities in Kenya. The t value was 8.712 and is > 2 which show that academic staff has a significant influence on internal efficiency. Coefficient B was found to be 0.464. It denotes that for every 1% change in academic staff characteristic make the dependent variable change by 0.464%. Thus the null hypothesis stated as: Academic staff characteristics have no statistically significant influence on internal efficiency of postgraduate studies in universities in Kenya is rejected. The regression equation used in the study to approximate the changes in internal efficiency is as follows.

$$Y = 0.464X_1 + 1.716$$

where, 1.716 is the constant

The findings illustrate that academic staff characteristic had a statistically significant influence on internal efficiency. The alternative hypothesis, that there is a statistically significant influence of academic staff characteristics on internal efficiency in postgraduate studies in universities in Kenya is accepted; hence the null hypothesis that there is no statistically significant influence of academic staff characteristics on internal efficiency in postgraduate studies in universities in Kenya is rejected.

Table 52: Students responses on the influence of academic staff characteristics on Internal Efficiency of postgraduate studies

Statement	N	SD (%)	Public Universities				Private Universities					
			D (%)	N (%)	A (%)	SA (%)	D (%)	N (%)	A (%)	SA (%)		
The academic staff provides high-quality instruction in my field of study	191	2.1	7.3	7.3	54	29.3	68	2.9	11.8	5.9	58.8	20.6
The academic staff are approachable and available to provide guidance when needed	191	2.1	8.9	11	45.6	32.5	68	0	13.2	2.6	54.4	25
The supervision I receive for my thesis or dissertation is effective and supportive	191	1	8.4	11.5	47.7	31.4	68	0	16.2	8.8	26.5	47.1
My supervisor provides timely and constructive feedback on my research work	191	2.6	8.9	12.6	44	32	68	1.5	11.8	8.8	29.4	48.5
There are sufficient opportunities for regular meetings with my supervisor to discuss my progress	191	3.1	15.2	11.5	43	27.2	68	0	14.7	19.1	33.8	32.4
The mentorship program at the university helps me in achieving my academic and career goals	191	6.8	18.3	21.5	39.8	12.6	68	1.5	19.1	16.2	0	27.9
I am satisfied with the guidance and support I receive in developing my research skills.	191	5.3	8.4	11.5	57.6	16.8		1.5	11.8	7.4	57.4	20.6
The academic staff encourage and support student participation in conferences, workshops, and other academic events	191	4.2	7.3	9.45	49.7	27.2	68	5.9	8.8	8.8	41.2	35.3
There is a clear process for addressing any issues or conflicts with my supervisor or academic staff	191	6.8	6.8	14.1	44.5	25.1	68	10.3	13.2	8.8	41.2	25

Table 52 reveals insights into postgraduate students' perceptions of how academic staff characteristics influence the internal efficiency of their studies at public and private universities in Kenya. Comparing the responses from students at both types of institutions highlights differences in experiences related to staff quality, support, and overall academic environment. At public universities, a majority 54% of students believe that the academic staff provides high-quality instruction, reflecting a strong perception of effective teaching, compared with private universities, where 58.8% of students express similar satisfaction. While both types of institutions receive positive feedback, private universities have a slightly higher percentage of students rating the quality of instruction favorably. This suggests that private universities might have a more uniformly high standard of teaching or a stronger emphasis on instructional quality.

According to postgraduate students 45.6% of students at public universities believe that academic staff are accessible and supportive. While in private universities, this figure is markedly higher at 54.4%, indicating that students in private institutions might experience more direct and approachable interactions with their academic staff. This could be due to smaller class sizes or more personalized support systems in private universities, contributing to better internal efficiency. Timely and constructive feedback is essential for research development. Public university students rate their feedback as timely and constructive, with 44% expressing satisfaction. Private university students report even higher satisfaction, with 48.5%. This reflects a slightly better performance in private universities regarding the responsiveness and quality of academic feedback, which can significantly enhance research efficiency.

The availability of regular meetings with supervisors is important for monitoring progress. At public universities, 43% of students find there are sufficient opportunities for these interactions. In private universities, 33.8% of students report similar satisfaction. The higher percentage in public universities may reflect more structured or frequent meeting arrangements, potentially offering better support for student progress and internal efficiency. Encouragement and support for participating in academic events such as conferences and workshops is crucial for postgraduate students. Public university students

are generally positive about this support, with 49.7% expressing satisfaction. Private university students also report support, with 41.2%. A clear process for addressing conflicts with academic staff is important for maintaining a positive academic environment. In public universities, 44.5% of students find the process clear and effective while in private universities, 41.2% of students agree. While both institutions have mechanisms in place, public universities appear to have a slightly more transparent or effective process for resolving issues, contributing to a more supportive academic environment.

Table 53: Academic Staff Responses on the Influence of Academic staff Characteristics on Internal Efficiency of Postgraduate Studies

Statement	No.	SD	Public Universities				Private Universities					
			D	N	A	SA	No.	SD	D	N	A	SA
The academic staff provides high-quality instruction in my field of study	48	2	14.6	25	48	10.4	31	0	22.6	19.4	42	16.1
The academic staff are approachable and available to provide guidance when needed	48	4	31	8	48	8	31	0	32.3	38.7	16.1	12.9
The supervision I receive for my thesis or dissertation is effective and supportive	48	31.3	19.8	8	37.5	4	31	3.2	29	42	19.4	6.4
My supervisor provides timely and constructive feedback on my research work	48	1.1	39.6	8.3	45.8	4.2	31	0	42	35.5	12.9	9.7
There are sufficient opportunities for regular meetings with my supervisor to discuss my progress	48	0	29.2	20.9	39.6	10.4	31	29	9.7	42	6.5	13
The mentorship program at the university helps me in achieving my academic and career goals	48	6.3	23	20.9	50	0	31	0	32.3	22.6	25.8	19.4
I am satisfied with the guidance and support I receive in developing my research skills.	48	0	16.6	2.2	54.2	25	31	0	0	32.3	58.1	9.7
The academic staff encourage and support student participation in conferences, workshops, and other academic events	48	0	43.8	8.3	39.6	8.3	31	0	42	35.5	3.2	19.4
There is a clear process for addressing any issues or conflicts with my supervisor or academic staff	48	0	20.8	18.8	52.1	8.3	31	0	9.7	42	42	6.5

Table 53 presents insights into how academic staff characteristics impact the internal efficiency of postgraduate studies in universities in Kenya. By comparing public and private universities, we can determine differences in staff performance, student support, and the overall impact on academic progress.

In public universities, 54% of academic staff respondents feel that the academic staff provides high-quality instruction, with only 7.3% expressing dissatisfaction. In contrast, private university students rate the quality of instruction somewhat lower, with 58.8% satisfied but 20.6% indicating dissatisfaction. The approachability and availability of academic staff is crucial for student support. At public universities, 45.6% of academic staff found the academic staff approachable and available for guidance, whereas in private universities, this figure is slightly higher at 54.4%. This difference might reflect a more accessible support system in private institutions, which could enhance the internal efficiency by fostering better student-faculty interactions.

Effective supervision and constructive feedback are essential for postgraduate success. In public universities, 47.7% of students think that their supervision is effective, though 31.4% still express some dissatisfaction. Equally, private university students report comparable levels of satisfaction with 47.1% finding supervision effective. Though, there is a notable difference in the timeliness and quality of feedback, where 44% of public university students appreciate timely feedback, compared to 48.5% in private universities. This suggests that private universities might have more robust mechanisms for providing feedback, which could contribute to higher efficiency in postgraduate research. A clear process for addressing issues or conflicts with supervisors or academic staff is important for maintaining a positive academic environment.

Public university academic staff rate this process favorably, with 44.5% finding it apparent, while private university students report similar levels of satisfaction at 41.2%.

Table 54: Overall Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	Sig. Change
1	0.984 ^a	0.969	0.968	0.08947	1946.538	0.000

a. Predictors: Constant%, Academic staff, Cost of program, Student Characteristics, Physical facilities

From the findings in Table 54, the correlation coefficient R% is 0.984 while the coefficient of determination R Square% is 0.969. After adjustment the R Square becomes 0.968. As stated by Greene (2008), R Square explains the percentage of changes in dependent variable due to a unit change in the predictor variable. Therefore, it can be inferred that 96.8% of the changes in internal efficiency is explained by change in Academic staff, Cost of program, Student Characteristics, Physical facilities. Based on the p value, <.05, it is apparent that the effect of predictor variables on internal efficiency was significant.

Table 55: Overall Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.323	4	15.581	1946.538	0.000 ^b
	Residual	2.017	331	0.008		
	Total	64.340	335			

a. Dependent Variable: Internal Efficiency

b. Predictors: Constant%, Academic staff, Cost of program, Student Characteristics, Physical facilities

From the findings in Table 55, F-statistic was significant p value<.05 which is an indication that the model was significant in explaining the relationship between the Academic staff, Cost of program, Student Characteristics, Physical facilities and internal efficiency.

Table 56: Overall Regression Output

Model		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	Constant%	0.353	0.040		8.816	0.000	0.274	0.432
	Cost of program	0.185	0.008	0.301	22.606	0.000	0.169	0.201
	Student Characteristics	0.189	0.010	0.229	18.205	0.000	.0169	0.210
	Physical facilities	0.249	0.010	0.378	26.012	0.000	0.230	.0267
	Academic staff	0.265	0.009	0.397	28.814	0.000	0.247	0.284

a. Dependent Variable: Internal Efficiency

From the findings in Table 57, the model thus becomes
 $Y=0.353 + 0.185X_1 + 0.189X_2 + 0.249X_3 + 0.265X_4 + e$

From the regression output it is apparent that there is a positive relationship between the cost of program and internal efficiency $r=.185$. Further the relationship is significant as indicated by the p value $<.05$ Secondly, student characteristics has a positive and significant effect on internal efficiency $r=.189$, p value $<.05$. Physical facilities have a significant and positive effect on internal efficiency $r=.249$, $p<.05$. Finally, Academic staff has a significant and positive effect on internal efficiency $r=0.265$, $p<.05$. Therefore, it can be inferred that all variables are significant.

All predictors are statistically significant, implying they all contribute to explaining internal efficiency and the impact of each variable varies, with academic staff and physical facilities having the most substantial effects, followed by student characteristics and cost of program. Finally, with a high F-statistic and the significant coefficients, the model is robust in explaining the variability in internal efficiency. Finally, each predictor: cost of program, student characteristics, physical facilities, and academic staff positively influences internal efficiency, with varying degrees of impact.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATION

5.1 Summary of Research Findings

The study sought to establish the influence of selected student and institutional factors on the internal efficiency of postgraduate studies in public and private universities in Kenya. Specifically, the study sought to establish the influence of cost of the program, postgraduate students' characteristics, and physical facilities and to examine the influence of academic staff characteristics on internal efficiency of postgraduate studies in public and private universities in Kenya. A descriptive and correlational research designs was formulated to test the four hypotheses. Data was collected from 398 respondents, consisting of 15 directors, 90 academic staff, and 293 postgraduate students, from fifteen universities in Kenya. Data were collected using questionnaires and interview schedules, descriptive data was analysed frequencies and percentages while inferential analysed using simple linear regression and anal analysis of variance.

The first null hypothesis stated that there is no statistically significant influence of the cost of the program on internal efficiency of postgraduate studies in public and private universities in Kenya. Simple linear regression test was performed to investigate whether there was influence of the cost of the program on internal efficiency of postgraduate studies in public and private universities in Kenya. The findings established that there was statistically significant influence on internal efficiency of postgraduate studies in public and private universities in Kenya. Since p-value was less than the critical value, the first hypothesis was rejected and the alternative hypothesis that there is a statistically significant influence of the cost of the program on internal efficiency of postgraduate studies in Kenya was accepted, implying there is a statistically significant influence of the cost of the postgraduate program on internal efficiency of postgraduate studies in public and private universities in Kenya. Majority of the postgraduate students, university academic staff and directors of graduate schools revealed that majority of the postgraduate students were self-sponsored and that most universities did not support and provide resources for postgraduate students to find part-time work or assistantship to help manage costs. Therefore, most students found it difficult to pay fees and had to use a lot of time looking for it, instead of

studying this negatively impacted on the time to they took to graduate. However in comparison, private universities generally offer better financial support and resources, with more positive perceptions of tuition fees, payment options, and accommodation affordability than public universities. These insights suggest that addressing financial concerns, particularly in public universities, could enhance the internal efficiency of postgraduate programs and improve student satisfaction and success.

The second null hypothesis stated that there is no statistically significant influence of the student characteristics on internal efficiency of postgraduate studies in public and private universities in Kenya. Simple linear regression test was also performed to investigate whether there was influence of the student characteristics on internal efficiency of postgraduate studies in public and private universities in Kenya. The findings established that there was statistically significant influence on internal efficiency of postgraduate studies in public and private universities in Kenya. Since p-value was less than the critical value, the second hypothesis was rejected and the alternative hypothesis that there is a statistically significant influence of the student characteristics on internal efficiency of postgraduate studies in Kenya was accepted. indicating there is a statistically significant influence of the postgraduate students' characteristics on internal efficiency of postgraduate studies in public and private universities in Kenya. Majority of the postgraduate students, university academic staff and directors of graduate schools revealed that postgraduate students' family obligations, type of work, and other work related obligations, make the students find it difficult to attend classes or engage in research. Consequently, they take long to graduate and others dropping out.

The third null hypothesis stated that there is no statistically significant influence of the physical facilities on internal efficiency of postgraduate studies in public and private universities in Kenya. Simple linear regression test was performed to investigate whether there was influence of the physical facilities on internal efficiency of postgraduate studies in public and private universities in Kenya. The findings established that there was statistically significant influence on internal efficiency of postgraduate studies in public and private universities in Kenya. Since p-value was less than the critical value, the third hypothesis

was rejected and the alternative hypothesis that there is a statistically significant influence of the physical facilities was accepted. Majority of revealed that research facilities were up-to-date and support postgraduate students' academic and research activities. Therefore, the availability and adequacy of these facilities were thought to enable students complete their studies on time.

The fourth null hypothesis stated that is no statistically significant influence of the academic staff characteristics on internal efficiency of postgraduate studies in public and private universities in Kenya. Simple linear regression test was again performed to investigate whether there was influence of academic staff characteristics on internal efficiency of postgraduate studies in public and private universities in Kenya. The findings established that there was statistically significant influence on internal efficiency of postgraduate studies in public and private universities in Kenya. Since p-value was less than the critical value, the fourth hypothesis was rejected and the alternative hypothesis accepted, indicating that there is a statistically significant influence of the academic staff Characteristics on internal efficiency of postgraduate studies in public and private universities in Kenya. Majority of the postgraduate reported that academic staff provides high-quality instruction and are approachable and available to provide guidance when needed. They support and encourage students to participate in conferences and workshops and that there is a clear process for addressing issues or conflicts between postgraduate students and academic staff.

5.2 Conclusion

Based on the findings of the study, the researcher made the following conclusions

In conclusion, the research highlights that postgraduate students in Kenya face significant challenges due to a lack of financial support and resources, which adversely affects their academic progression and overall satisfaction. A statistically significant relationship was identified between the costs associated with postgraduate programs and internal efficiency, particularly within public universities. Additionally, personal and professional characteristics, such as family obligations and work commitments, impede students' ability

to attend classes and engage in research, often resulting in extended graduation times or even dropouts. The study also emphasizes the critical role of physical facilities; access to modern research environments greatly enhances academic efficiency and contributes to timely program completion. Furthermore, the positive influence of academic staff is evident, with students benefiting from high-quality instruction and support that fosters engagement and effectively addresses academic challenges. Overall, the findings affirm that the interplay of program costs, student characteristics, physical resources, and the quality of academic staff significantly influences the internal efficiency of postgraduate studies in both public and private universities in Kenya.

5.3 Recommendations of the Study

The study made the following recommendations:

- i. The government should enhance funding of higher education and make funds accessible in a manner akin to that of undergraduate sponsored programs, and developed a post-graduate equivalent program.
- ii. Prospective postgraduate students should choose a study model that would favour their schedules to ensure that they did not go through a lot of stress trying to accomplish several tasks simultaneously. They should also make an effort to strike a balance between their social and academic lives by deliberately managing their time, priorities, roles, and duties.
- iii. The government should ensure that universities have requisite infrastructure such fully libraries, laboratories relevant teaching and learning resources and ICT connectivity, this can be achieved by ensuring that universities which meet the requirements of commission of University education and the relevant bodies and regulators, on physical facilities are chartered or recertified.
- iv. The universities to improve the management of research and teaching environment, by employing adequate qualified academic staff, retain and provide periodic internal trainings on supervision. Additionally, universities should formulate policies and guidelines on proposal and thesis writing and give copies to all admitted student. Develop clear process for addressing any issues or conflicts between postgraduate students and their academic staff.

5.4 Suggestions for Further Studies

To further understand the influence of selected students and institutional based factors influencing internal efficiency of postgraduate studies in public and private universities in Kenya. The researcher suggested areas requiring further research, they are:

- i. A study on factors influencing internal efficiency of postgraduate studies in public and private universities in Kenya using the students who already graduate, delayed and those who dropped out as respondents.
- ii. A study on factors influencing internal efficiency of postgraduate studies in public and private universities for other faculties.
- iii. A study of factors influencing internal efficiency of PhD students in public and private universities.

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APPENDICES

Appendix I: Letter of Introduction of to the universities

Kibet Komen

P.O. Box 109-60400

Chuka

Date

The Vice Chancellor

University

Dear Prof,

RE: PERMISSION TO CONDUCT RESEARCH IN YOUR UNIVERSITY

I am Kibet Komen, a student at Chuka University pursuing a Doctorate Degree in Education Management. Preparing to collect data for my academic research titled “selected students and institutional based factors influencing internal efficiency of postgraduate studies in public and private universities in Kenya”

I am looking forward for a favourable response, for my request to engage your Academic and postgraduate student in this study. The information obtained will be used for academic research and will be kept confidential. The respondents’ identities will be kept anonymous.

Thank you .

Yours Sincerely,

Kibet Komen

Appendix II: Questionnaire for Academic Staff

The researcher is a postgraduate student at Chuka University, Education Department. You have been selected to participate in this research study. The title of research is: Selected students and institutional based factors influencing internal efficiency of postgraduate studies in public and private universities in Kenya. You are kindly requested to respond to the items in the questionnaire. The information you provide will be confidential for use in this study only. Do not write your name, tick appropriately

SECTION A: DEMOGRAPHIC INFORMATION

By means of a tick (✓) please indicate as appropriate

1. What Category is your University?
Public Private
2. Gender
Male Female
3. Age in bracket:
Below 30 31-40 41-50
51-60 Above 60
4. Highest Academic qualification
Assistant Lecturer Lecturer Senior Lecturer
Associate Professor Professor
5. How long have you supervised masters students to completion
0-2year 3 -5 years 6-8years
9-11year above 12years
6. How long have you supervised doctoral students to completion
0-2 year 3 -5 years 6-8 years
9-11 year above 12 years
7. How many masters students have you supervised to completion
0-2 3 -5 6-8
9-11 above 12
8. How many doctoral students have you supervised to completion
0-2 3 -5 6-8
9-11 above 12

SECTION B: INTERNAL EFFICIENCY

To what extent do you agree with the following statements about your university's efficiency in managing postgraduate studies? Tick appropriately on a five pointlikert scale for 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly Agree

Internal Efficiency		SD	D	N	A	SA
Statement		1	2	3	4	5
	Students complete postgraduate studies within the expected duration					
	Students often experience delays in graduating from the postgraduate program					
	Many Students drop out of the postgraduate program before completion					
	Many students in university experience delays in graduating					
	The duration of postgraduate program is appropriate for the coursework and research requirements					
	The number of students who graduate later than expected is high					
	The postgraduate program is efficiently structured to facilitate timely completion.					

To what extent do you agree with the following statements about your university's efficiency in managing postgraduate studies? Tick appropriately on a five pointlikert scale for percentage

Internal Efficiency		Percentage				
Statement		0-20	21-40	41-60	61-80	Above 80
	What percent of your universities fulltime masters students complete in 2 years					
	What percent of your universities part time masters students complete in 4 years					
	What is the dropout rate of your universities part time masters students					
	What is the dropout rate of your universities fulltime masters students					

SECTION C: COST OF THE PROGRAM

To what extent do you agree or disagree with the following statements pertaining to the cost of post graduate program. Tick appropriately on a five pointlikert scale for 1-Strongly Disagree, 2-Disagree,3-Neutral, 4-Agree and 5-Strongly Agree

Cost of the Program		1 SD	2 D	3 N	4 A	5 SA
Statement						
	The university offers sufficient financial aid opportunities e.g., scholarships, grants, loans) to support postgraduate students.					
	The tuition fees for postgraduate program are reasonable and reflect the quality of education provided					
	The payment options for tuition and fees are flexible and accommodate postgraduate students financial situation					
	The university provides adequate support and resources for postgraduate students to find part-time work to help manage costs					
	The accommodations provided by the university is affordable for postgraduate students					
	Additional costs associated with the postgraduate program e.g., books, lab fees, field trips) are communicated clearly and are manageable.					
	The overall value of the postgraduate program justifies the cost					
	The financial counseling services provided by the university are helpful in managing and planning postgraduate student’s educational expenses.					

SECTION D: STUDENTS CHARACTERISTICS

To what extent do you agree or disagree with the following statements pertaining student characteristics. Tick appropriately on a five pointlikert scale for 1-Strongly Disagree, 2-Disagree,3-Neutral, 4-Agree and 5-Strongly Agree

Students characteristics		SD 1	D 2	N 3	A 4	SA 5
Statement						
	Postgraduate students find it challenging to balance personal and professional responsibilities					

	Postgraduate students find it easy interacting and collaborating with peers of different age groups in the postgraduate program.					
	Postgraduate students family obligations do not hinder their progress in postgraduate studies					
	The objectives of postgraduate program align with postgraduate students personal academic and career objectives					
	Postgraduate students gender has no impact on their ability to succeed in postgraduate studies					
	The nature of postgraduate students work allows them to balance it with postgraduate studies					
	Postgraduate students are able to manage their time effectively to meet the demands of postgraduate studies.					

SECTION E: PHYSICAL FACILITIES

To what extent do you agree or disagree with the following statements pertaining physical facilities provided for postgraduate studies. Tick appropriately on a five pointlikert scale for 1-Strongly Disagree, 2-Disagree,3-Neutral, 4-Agree and 5-Strongly Agree

Physical facilities		SD	D	N	A	SA
Statement		1	2	3	4	5
	The classrooms and lecture halls are well-equipped and conducive to learning					
	The library facilities meet academic and research needs, providing adequate resources and study spaces.					
	Research facilities are up-to-date and support academic and research activities					
	The availability of computer labs and access to necessary software is satisfactory					
	The university provides sufficient and comfortable common areas and lounges for postgraduate students to relax and collaborate.					
	There are adequate facilities for health and wellness, such as gymnasiums, clinics, and counseling centers					
	The campus provides accessible facilities and resources for students with disabilities					
	The university ensures that all necessary safety and security measures are in place on campus					

	The university's Wi-Fi and internet services are reliable and accessible across campus					
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SECTION F: ACADEMIC STAFF

1. To what extent do you agree or disagree with the following statements pertaining academic staff. Tick appropriately on a five pointlikert scale for 1-Strongly Disagree, 2-Disagree,3-Neutral, 4-Agree and 5-Strongly Agree

Academic staff		SD	D	N	A	SA
Statement		1	2	3	4	5
	The academic staffs provide high-quality instruction on their student's field of study.					
	The academic staffs are approachable and available to provide guidance when needed.					
	The supervision for thesis or dissertation is effective and supportive.					
	Supervisor provide timely and constructive feedback on students research work					
	There are sufficient opportunities for regular meetings with students to discuss their progress					
	The mentorship program at the university helps students in achieving their academic and career goals					
	The guidance and support that academic staff provide to students to develop their research skills is satisfactory.					
	The academic staff encourage and support student participation in conferences, workshops, and other academic events					
	There is a clear process for addressing any issues or conflicts with my students or academic staff					
	The academic staff and supervisors are knowledgeable about the latest developments in their students field of study					
	The academic staff respect and value the diverse backgrounds and experiences of postgraduate students					

Appendix III: Questionnaire for Postgraduate Students

The researcher is a postgraduate student at Chuka University, Education Department. You have been selected to participate in this research study on **selected students and institutional based factors influencing internal efficiency of postgraduate studies in public and private universities in Kenya**. You are kindly requested to respond to the items in the questionnaire. The information you provide will be confidential and is meant only for this study. Do not write your name anywhere in the questionnaire

By means of a tick (✓) please indicate as appropriate

SECTION A: DEMOGRAPHIC INFORMATION

- 1. Age in years:
 - Below 24 25-34 35-44
 - 45-54 above 55
- 2. Gender
 - Male Female
- 3. Level of Study
 - Doctorate Master
- 4. What Category is your University?
 - Public Private
- 5. Program Status
 - Part-time Fulltime
- 6. My Studies is financed by?
 - Self Guardian
 - Parent Scholarship
- 7. Number of Years since enrolment
 - Less than 1 1-2 3-4 5-6
 - above 5

SECTION B: INTERNAL EFFICIENCY

To what extent do you agree with the following statements about your university's efficiency in managing postgraduate studies. Tick appropriately on a five pointlikert scale for 1-Strongly Disagree, 2-Disagree,3-Neutral, 4-Agree and 5-Strongly Agree

Internal Efficiency	SD	D	N	A	SA
Statement	1	2	3	4	5

	Students complete postgraduate studies within the expected duration					
	Students often experience delays in graduating from the postgraduate program					
	Many Students drop out of the postgraduate program before completion					
	The duration of my postgraduate program is appropriate for the coursework and research requirements					
	The number of students who graduate later than expected is high					
	The postgraduate program is efficiently structured to facilitate timely completion.					
	I am making steady progress in my research, which aligns with the expected timeline					

SECTION C: COST OF THE PROGRAM

To what extent do you agree or disagree with the following statements pertaining to the cost of post graduate program. Tick appropriately on a five pointlikert scale for 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly Agree

Cost of the Program		1 SD	2 D	3 N	4 A	5 SA
	Statement					
	The university offers sufficient financial aid opportunities e.g., scholarships, grants, loans) to support postgraduate students.					
	The tuition fees for my postgraduate program are reasonable and reflect the quality of education provided					
	The payment options for tuition and fees are flexible and accommodate my financial situation					
	The university provides adequate support and resources for postgraduate students to find part-time work or assistantships to help manage costs					
	The accommodations provided by the university is affordable for postgraduate students					
	Additional costs associated with the postgraduate program e.g., books, lab fees, field trips) are communicated clearly and are manageable.					
	The overall value of the postgraduate program justifies the cost					
	The financial counseling services provided by the university are helpful in managing and planning my educational expenses.					

SECTION D: STUDENTS CHARACTERISTICS

To what extent do you agree or disagree with the following statements pertaining student characteristics. Tick appropriately on a five point likert scale for 1-Strongly Disagree, 2-Disagree,3-Neutral, 4-Agree and 5-Strongly Agree

Students characteristics		SD 1	D 2	N 3	A 4	SA 5
Statement						
	Balancing postgraduate studies with personal and professional responsibilities is challenging					
	Interacting and collaborating with peers of different age groups in the postgraduate program is easy.					
	My family obligations do not hinder my progress in postgraduate studies					
	The objectives of my postgraduate program align with my personal academic and career objectives					
	My gender has no impact on my ability to succeed in postgraduate studies					
	The nature of my work allows me to balance it with my postgraduate studies					
	I manage my time effectively to meet the demands of postgraduate studies.					

SECTION E: PHYSICAL FACILITIES

To what extent do you agree or disagree with the following statements pertaining physical facilities provided for postgraduate studies. Tick appropriately on a five point likert scale for 1-Strongly Disagree, 2-Disagree,3-Neutral, 4-Agree and 5-Strongly Agree

Physical facilities		SD 1	D 2	N 3	A 4	SA 5
Statement						
	The classrooms and lecture halls are well-equipped and conducive to learning					
	The library facilities meet my academic and research needs, providing adequate resources and study spaces.					
	Research facilities are up-to-date and support my academic and research activities					
	The availability of computer labs and access to necessary software is satisfactory					

	The university provides sufficient and comfortable common areas and lounges for postgraduate students to relax and collaborate.					
	There are adequate facilities for health and wellness, such as gymnasiums, clinics, and counseling centers					
	The campus provides accessible facilities and resources for students with disabilities					
	The university ensures that all necessary safety and security measures are in place on campus..					
	The university's Wi-Fi and internet services are reliable and accessible across campus					

SECTION F: ACADEMIC STAFF

- To what extent do you agree or disagree with the following statements pertaining academic staff. Tick appropriately on a five pointlikert scale for 1-Strongly Disagree, 2-Disagree,3-Neutral, 4-Agree and 5-Strongly Agree

Academic staff		SD 1	D 2	N 3	A 4	SA 5
Statement						
	The academic staff provide high-quality instruction in my field of study.					
	The academic staff are approachable and available to provide guidance when needed.					
	The supervision I receive for my thesis or dissertation is effective and supportive.					
	My supervisor provides timely and constructive feedback on my research work					
	There are sufficient opportunities for regular meetings with my supervisor to discuss my progress					
	The mentorship program at the university helps me in achieving my academic and career goals					
	I am satisfied with the guidance and support i receive in developing my research skills.					
	The academic staff encourage and support student participation in conferences, workshops, and other academic events					
	There is a clear process for addressing any issues or conflicts with my supervisor or academic staff					

	The academic staff and supervisors are knowledgeable about the latest developments in my field of study					
	The academic staff respect and value the diverse backgrounds and experiences of postgraduate students					

Appendix IV: Interview Schedule for Graduate School Directors

1. What is the average completion percentage rate of your masters and PhD students?
2. What is the average time taken by your university post graduate students to complete their studies?
3. What is the percentage dropout rate of your post graduate university students?

SECTION C: COST OF THE PROGRAM

4. In your own opinion how does the cost of postgraduate studies influence:
 - (a) The time they take to complete their studies?
 - (b) Dropout rates?
 - (c) Graduation rate?

SECTION D: STUDENTS CHARACTERISTICS

- (d) In your own opinion explain how the following student characteristics influence the time taken for student to graduate?
 - i. age
 - ii. gender
 - iii. residence during studies
 - iv. family obligations
 - v. nature of work
 - vi. Any other student characteristic?

SECTION E: PHYSICAL FACILITIES

- (e) In your own opinion explain how the following physical facilities influence the time taken for student to graduate?
 - i. Computer labs
 - ii. Internet connectivity
 - iii. Classroom
 - iv. Library space
 - v. Others specify

SECTION F: ACADEMIC STAFF

- (f) In your own opinion explain how the following academic staff characteristics influence the time taken for masters and doctorate student to graduate?
 - i. Qualification

- ii. Availability
- iii. Supervisors responsibilities other than teaching and administrative duties_
- iv. Co-supervisor conflict on student supervision
- v. Supervisors feedback to students
- vi. Internal and external examiners feedback to students
- vii. Any other academic staff characteristic?

Appendix V: Chartered Universities in Kenya

Public Chartered Universities in Kenya

1. University of Nairobi – UON Year of Establishment – 1970
2. Moi University – Year of Establishment – 1984
3. Kenyatta University – KU – Year of establishment – 1985
4. Egerton University – Year of Establishment – 1987
5. Jomo Kenyatta University of Agriculture and Technology – JKUAT – Year of Establishment – 1994
6. Maseno University – Year of Establishment – 2001
7. MasindeMuliro University of Science and Technology – MMUST – Year of Establishment – 2007
8. DedanKimathi University of Technology – Year of Establishment – 2012
9. Chuka University – Year of Establishment – 2013
10. Technical University of Kenya – Year of Establishment – 2013
11. Technical University of Mombasa – Year of Establishment – 2013
12. Pwani University – Year of Establishment – 2013
13. Kisii University – Year of Establishment – 2013
14. University of Eldoret – Year of Establishment – 2013
15. Maasai Mara University – Year of Establishment – 2013
16. JaramogiOgingaOdinga University of Science and Technology – Year of Establishment – 2013
17. Laikipia University – Year of Establishment – 2013
18. South Eastern Kenya University – Year of Establishment – 2013
19. Meru University of Science and Technology – Year of Establishment – 2013
20. Multimedia University of Kenya – Year of Establishment – 2013
21. University of Kabianga– Year of Establishment – 2013
22. Karatina University – Year of Establishment – 2013
23. Kibabi University – Year of Establishment – 2013
24. Rongo University – Year of Establishment – 2016
25. The Co-operative University of Kenya – Year of Establishment – 2016
26. TaitaTaveta University – Year of Establishment – 2016
27. Murang’a University of Technology – Year of Establishment – 2016
28. University of Embu– Year of Establishment – 2016
29. Machakos University – Year of Establishment – 2016
30. Kirinyaga University – Year of Establishment – 2016
31. Garissa University – Year of Establishment – 2017

Private Chartered Universities in Kenya

1. University of Eastern Africa, Baraton
2. Catholic University of Eastern Africa – CUEA
3. Daystar University
4. Scott Christian University
5. United States International University – USIU

6. Africa Nazarene University
7. Kenya Methodist University
8. St. Paul's University
9. Pan Africa Christian University
10. Strathmore University
11. Kabarak University
12. Mount Kenya University
13. Africa International University
14. Kenya Highlands Evangelical University
15. Great Lakes University of Kisumu – GLUK
16. KCA University
17. Adventist University of Africa
18. KAG EAST University

Appendix VI: Institution Introductory Letter



CHUKA UNIVERSITY

Knowledge is Wealth (*Sapientia divitia est*) Akili ni Mali
OFFICE OF THE DIRECTOR
BOARD OF POSTGRADUATE STUDIES

Telephones: 020-2310512/18
Direct Line: 020-268 7625

postgraduate@chuka.ac.ke

P. O. Box 109-60400, Chuka
Website: www.chuka.ac.ke

REF: ED15/39903/18

9th May, 2024

Director
National Commission for Science Technology and Innovation
Off Waiyaki Way, Upper Kabete
P O Box 30623, 00100
Nairobi.

Dear Sir / Madam,

KIBET KOMEN

The above-named person is a *bona fide* student of Chuka University pursuing PhD in Educational Management proposal titled: **Selected Factors and Internal Efficiency of Postgraduate Studies in Public and Private Universities in Kenya.**

Ms. Komen has defended at the Faculty level and is now expected to conduct research. Any assistance accorded will be highly appreciated.

Yours sincerely,

Prof. Moses Muraya, Ph.D.

DIRECTOR
BOARD OF POSTGRADUATE STUDIES

Appendix VII: Ethics Review Committee Letter



CHUKA UNIVERSITY INSTITUTIONAL ETHICS REVIEW COMMITTEE

Telephones: 020-2310512/18

P. O. Box 109-60400, Chuka

Direct Line: 0772894438

Email: info@chuka.ac.ke

Website: www.chuka.ac.ke

8th May, 2024

REF: CUIERC/ NACOSTI/536
TO: Kibet Komen

RE: Selected Factors and Internal Efficiency of Postgraduate Studies in Public and Private Universities in Kenya

This is to inform you that *Chuka University IERC* has reviewed and approved your above research proposal. Your application approval number is *NACOSTI/NBC/AC-0812*. The approval period is 8th May, 2024 – 8th May, 2025.

This approval is subject to compliance with the following requirements;

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by *Chuka University IERC*.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to *Chuka University IERC* within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to *Chuka University IERC* within 72 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to *Chuka University IERC*.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely

Dr. Benjamin Kanga
SECRETARY

