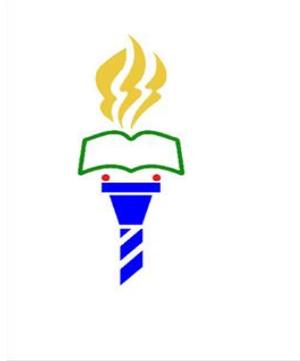


Quality the Agenda

COMMISSION FOR UNIVERSITY EDUCATION

UNIVERSITY STATISTICS

(2017/2018)



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FOREWORD

In line with the function of the Commission stipulated in Section 5 (1) of the Universities Act (2012), Revised 2018 {2016}, the Commission has put in place a framework for assuring quality of research and integrity of data collection in the university sector. In doing this, the Commission is inspired by ideals enshrined in its Vision, Mission, Strategic Objectives and Core Values. To this end, this report on University statistics presents comprehensive university data covering the following key thematic areas: academic programmes, student enrolment, staffing, graduation trends and finance. This is the third detailed report on university data, which the Commission for University Education (CUE) has prepared. The data presented is for the period 2017/2018 only and captures several parameters of the university sector. These include, but are not limited to: dynamics of gender representation, programme diversification, research output, enrolment patterns, staff-student ratio and financing.

With the knowledge that data is a vital element in making decisions and crafting policies, the Commission is committed to building a rich data base, which will be easily accessed by any authorized person upon request. Policies and projections will then be made based on tangible up-to-date data. There will also be greater efficiency in the implementation of projects and realization of targets. Unlike the previous years, the universities were more cooperative in providing data, which is an indication that they have embraced the exercise wholeheartedly. Of note is data on enrolment of students by County. Previously, universities were not capturing this information in their admission records. But through Commission's intervention and constructive engagement with the universities, a significant number of them provided the data, which has been analyzed in this report.

This report will be handy to the policy makers in various State departments, private sector, NGOs, development partners and other interest groups who intend to partner with the university sector in matters pertaining to training and research.

PROF. CHACHA NYAIGOTTI - CHACHA
CHAIRMAN
COMMISSION FOR UNIVERSITY EDUCATION

ACKNOWLEDGEMENT

Compilation of the 2017/2018 University Statistics Report would not have been possible without the immense contribution of several people. First, I would like to thank the Chairman and the entire Commission fraternity for their steadfast support during the process of collecting and processing the University Data Book for 2017/18.

Secondly, I would like to thank both public and private universities for providing data on the thematic areas which have been analyzed in this report and for working closely with the Commission to validate the data so that the report captures accurately all the information they shared.

I gratefully acknowledge the time and expertise devoted to reviewing of the document by the Commission's Editorial Committee. Last but certainly not least, I would like to express my deepest appreciation to the team in the Division of Planning, Research and Development for their hard work and commitment to the task of producing this important report. These include Prof. Jackson Too – Senior Assistant Commission Secretary, Research and Development; Ms. Hyrine Matheka - Senior Assistant Commission Secretary, Planning and Resource Mobilization; Ms. Stella Kiptoo - Assistant Commission Secretary; Dr. Alice Kande - Senior Research Officer; Mr. Pius Walela - Senior Research Officer; Mr. Reynold Njue - Planning Officer, Partnership and Resource Mobilization; Ms. Claris Adoyo - Research Officer; and Mr. Muriithi Njeru -Data Analyst, who worked tirelessly to deliver this report.

PROF. MWENDA NTARANGWI
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ABBREVIATIONS AND ACRONYMS

ADEA	Association for the Development of Education in Africa
CBA	Collective Bargaining Agreement
CHET	Centre for Higher Education Transformation
CUE	Commission for University Education
GER	Gross Enrolment Rate
FDI	Foreign Direct Investment
ICT	Information Communication Technology
ISCED	International Standard Classification of Education
KAG	Kenya Assemblies of God
KUCCPS	Kenya Universities and Colleges Central Placement Services
LIA	Letter of Interim Authority
MOE	Ministry of Education
OECD	Organization for Economic Cooperation and Development
PGD	Postgraduate Diploma
PSSP	Privately Sponsored Students Programme
SDGs	Sustainable Development Goals
STEM	Science, Technology, Engineering and Mathematics
UCT	University of Cape Town
UFB	Universities Funding Board
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United States of America

DEFINITION OF TERMS

Accreditation	The procedure by which the Commission recognizes an institution as a University and as having fulfilled the prescribed criteria for mounting its academic programmes
Academic programme	The design of learning content, which is multi-dimensional and includes intentions, structure of content, delivery modes, academic resources and assessment modes
Full Time Staff Equivalent (FTSE)	Measures the equivalence to full-time as recorded in the Contract of Employment
Part Time Academic Staff	Employees whose Contract of Employment is for anything less than the full-time equivalent (100%)
Public Chartered University	A university established and maintained or assisted out of public funds
Private Chartered University	A university which is established or maintained out of funds other than public funds
Student to Fulltime Staff Ratio	The number of Full Time Equivalent (FTE) students divided by Full Time Equivalent (FTE) Faculty
Universities Constituent Colleges	A semi-autonomous component of a chartered university whose academic affairs are governed by the Senate of the university
Universities with Letter of Interim Authority	An instrument of accreditation granted to a private university as stipulated in the Universities Act No. 42 of 2012; Revised 2018{2016}

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EXECUTIVE SUMMARY

University Statistics 2017/2018 report provides a solid base of university data, which will inform policy formulation, implementation and monitoring. This is in line with the mandate of the Commission to collect, disseminate and maintain data on university education and to promote quality research and innovation. This report is organized into ten chapters namely: Introduction; methodology; academic programmes; students' enrolment; academic staff distribution by rank; graduation; Research Output; income and expenditure as well as conclusions and recommendations.

The report starts with an overview of university education in Kenya, which briefly describes the expansion of university education, policy and legislative frameworks that have guided the sector. It also presents the mandate, functions, vision and the mission of the Commission as well as the Commission's core values. **Chapter two** gives a synopsis of the methodology used in collecting and analyzing data which culminated to this publication. It broadly covers the development and validation of the data collection instrument; the data collection and processing; and validation of data. This Chapter also presents the scope and limitation of the data.

In **Chapter three** universities academic programmes have been discussed comprehensively. It begins by giving a summary of universities academic programmes in public and private universities. The academic programmes are further clustered and classified in terms of university categories. The chapter further gives the implications of the universities programmes in view of Kenya's long term development agenda.

Student enrolment is a key Chapter of this report. Several government agencies, postgraduate students, development partners among others constantly seek accurate statistics of students in the Universities. It enables the Government to plan and allocate resources equitably. **Chapter four** has presented a detailed report on students' enrolment in universities. It gives students enrolment in public and private universities segregated in terms of gender. It also gives enrolment per programme level and cluster. The chapter analyses male and female enrolment per academic programme level and provides calculations of the ratio of academic staff to students. Postgraduate students constitute the pool from which the next generation of academics is drawn. The number of master's and doctoral enrolment remains small. Available data shows that men

dominate postgraduate enrolment. Finally the report presents enrolment of students by County; country of origin (international) and as well as students with disability. The data of these type of enrolment were not adequately captured, because universities have not yet developed robust tools to tease out such data.

The academic qualification and distribution of staff by rank were analyzed in depth in **Chapter five**. A very significant finding which has been reported in this chapter is that there were fewer doctoral than master's degree holders. The evidence further points to the fact that the number of males with master's and doctorate degrees is consistently higher than that of females with such degrees. The distribution of men and women across ranks shows that the latter are underrepresented at the higher ranks — from senior lecturer to full professor — and overrepresented at the level of lecturer and below.

Data presented in **Chapter six** shows that the graduation numbers were highest at bachelor's level and lowest at PhD level. The highest number of graduates across universities in the various clusters was in Business and Administration and lowest in science-based clusters. The few PhD graduates and low numbers of those graduating from science-based clusters do not support the science, technology and innovation orientation that the government has always advocated for to meet the needs for development. The low graduation rates at higher level does not bode well for developing an adequate pool of high-quality future academics. The government, universities, national tertiary educational institutions and the private sector need to work together to develop creative complementary funding models that promote high quality postgraduate training.

Chapter seven discusses research outputs from universities. It is a new chapter, which captures the data on publications, innovations and patents. Universities exist mainly to teach, conduct research and publish as well disseminate findings. Universities also collaborate with research institutions and in some occasions with industry undertake joint research. However, the outputs of these initiatives are rarely documented. This important university activity was sought in the data collection tool used to collect data from universities and has been reported in this chapter.

Chapter eight presents universities income and expenditure. It identifies the various income streams and expenditure items in the universities and gives the proportions of each. It further

analyses the budget surplus/deficit realized by the universities. It concludes with highlighting the implications of these findings.

The conclusions and recommendations have been discussed in Chapter eight. It is summarized and modelled along the following thematic areas: university enrolment; university staffing; university programmes; graduations and university income and expenditure.

Finally the annexes provide comprehensive information of other university data. These are necessary for planning and monitoring of the university sub sector.

Chapter One

Introduction

1.1 Overview

The Commission for University Education is established under the Universities Act No.42 of 2012, Revised 2018{2016} as the successor to the Commission for Higher Education (CHE). The Commission is charged with a multifaceted mandate, which is derived from its functions. That mandate encompasses the development and implementation of a quality assurance system for higher education, submission of advisories on all aspects of higher education (HE) policy, monitoring and evaluation of the state of higher education system, and spearheading intellectual discourse on key national and issues pertaining to research, development, and innovation systems. As such, the Commission seeks to be a leading regulator and custodian of quality for relevant and sustainable university education aligned to Goal No. 4 of SDGs in order to “Ensure inclusive and equitable quality education and promote lifelong learning opportunities”. It is in line with this mandate that the Commission collects data annually from the universities which is then used to inform policies with view to advancing objectives of university education.

1.2 University Education in Kenya

The university subsector in Kenya has expanded rapidly over the last three decades. From a single public university (the University of Nairobi) and a single private university (the USIU) in 1970, the total number of fully-fledged universities increased to 33 (seven public and 26 private) universities and 24 university constituent colleges by 2012. By 2018, Kenya’s university education sector comprised a total of 74 institutions; making it one of the largest higher education systems in Africa.

Table 1.1***Number of Universities Licensed in Kenya***

University Category	2016	2017	2018
Public Chartered Universities	23	30	31
Public Universities Constituent Colleges	8	4	6
Private Chartered Universities	17	18	18
Private Universities Constituent Colleges	5	5	5
Private Universities with LIA	12	12	14
Registered Private University	1	0	0
Total	66	68	74

The growth in the number of public and private universities in Kenya has been accompanied by a corresponding growth in student enrolment (CUE, 2016). Access to university education has been facilitated by among other factors, the rise in new courses offered by universities, upgrading of public university constituent colleges to fully-fledged universities, establishment of more constituent colleges and the expansion of private universities. Thus, while there were about 3,000 students enrolled in universities in 1970, over the years the scenario changed steadily to about 20,000 students by 1989/1990. The total number of university students rose from 67,558 in 2003/04 to about 240,551 in 2012 accelerating to 443,783 and 470,152 students in 2014 and 2015 respectively (CUE, 2016). The dramatic growth in student numbers has been propped by the government policy of absorbing as many students as possible that meet the minimum admissions qualification. In public universities the total enrolment in 1998/1999 was 42,020 students, reaching 67,558 students in 2003/2004 and 276,349 in 2012/2013. The intense growth in enrolment in 2013 resulted from the admission of high numbers of students by public universities, overshadowing the fast-growing private universities and defying infrastructure constraints that have been dogging them. In contrast, enrolment rates in private universities remains minimal, mainly because majority have limited academic programmes and inadequate capacity to expand admissions.

To support this growth, the government has periodically developed various legal frameworks and strategies to ensure that it delivers the envisioned quality and relevant education required for

socio-economic and other forms of development in the country. Among some of the legal frameworks and policy documents that have greatly influenced the shaping of the university education in Kenya are; the sessional paper no. 14 of 2012, the Universities Act No. 42 of 2012 ,revised 2018{2016} and Kinyanjui Report of 2007.

The Government aims to improve access and equity in University education and envisages an increase in enrolment from 181,000 in 2010 to 600,000 students by 2022 while taking appropriate measures to ensure a student composition that reflects national diversity. To increase access and equity, the Government and the private sector have made major strides in actualizing Public Private Partnership (PPP) initiatives that have seen the private sector play a key role in expanding access and equity in university education.

These efforts have gradually paid off over the years going by the notable increase in the number of universities, programmes offered as well as students' enrolment. Since 2016, The Government through the Kenya Universities and Colleges Central Placement Service (KUCCPS) places students to various public and private universities across the country. Previously, KUCCPS placed students into public universities only as provided by the law then. Privately sponsored students apply directly to the University and are admitted upon satisfying the entry requirements for the particular programme as set by the respective University Senates. The Kenyan Constitution, 2010, requires all public institutions to ensure equity in terms of gender, Persons with Disability, regional distribution among others.

The university sub sector is expected to provide the manpower required to achieve the Vision 2030, the 'Big Four' agenda and all other national development goals. The Sessional Paper No. 14 of 2012, articulates the need to strengthen and grow academic programmes that support the national priority and strategic areas. There have been efforts to improve the quality and relevance of the programmes on offer in Kenyan universities. The Kenyan Government in the Vision 2030 has identified the need for manpower in Science, Technology Engineering and Mathematics (STEM) programmes in order to achieve its development goals.

However, as this report details in the various sections, the programmes on offer and student enrolment and graduations are highly skewed towards Arts, Humanities and Social Sciences as opposed to STEM. In monitoring the quality of university education, there are a number of

quality indicators to look for, including: employability ratios, the enrolment of international students, the student- lecturer ratios, among others.

The Commission set out to determine the number and origin of international students as well as the number of students and academic staff in the universities. To guide staffing, the CUE 2014 Harmonised Criteria and Guidelines on Appointment and Promotion of Academic Staff in Universities in Kenya, identifies eight categories for grading academic staff and the required qualification for each rank. These are: Graduate Assistant/Junior Research Fellow; Tutorial Fellow/Junior Research Fellow; Lecturer/Research Fellow; Senior Lecturer/Senior Research Fellow; Associate Professor; Professor; Adjunct Academic Staff and Visiting Academic staff. This report covers all these categories except for Adjunct and Visiting Academic Staff. Efforts will be made to capture the missing categories of staff in subsequent data collection exercises.

Financial health of an institution determines the quality and quantity of all the other resources an institution can afford. The data on income and expenditure allows stakeholders to have an overview of what proportion of income is sourced from the various income streams, as well as what the university income is majorly being utilized for. The outcome of this section of the report revealed that majority of the universities operated in a deficit in the year under review. While acknowledging that declining finances and revenues has been a common feature in universities across the globe, universities are expected to re-think sustainability strategies that will see them weather the storm presently and guarantee sustainability in future.

In conclusion, the University sub sector has made progressive gains in promoting access to university education as the number of universities, programmes and students has grown remarkably. However, there is still need for concerted efforts to address relevance, equity, quality and relevance in university education. In particular, more should be done to ensure that the quality and type of courses offered by universities are in line with the requirements of national development as stipulated in Kenya Vision 2030. The subsector needs to source for alternative funding as the funds from student fees and the Exchequer are not sufficient to cater for the operations of the universities. Further, university processes should be streamlined to enhance efficiency and effectiveness and avoid unnecessary wastage of resources.

Chapter Two

Methodology

2.1 Introduction

Strategic and operational decisions are best made when data collected is accurate, timely and reliable. The emergence of Big Data field of research which efficiently aggregates and correlates massive volumes of data to identify recurring patterns to inform decisions is the next frontier of statistical exploits. University data is critical as the Government needs it regularly to plan, forecast and provide for needs in the university education sector. As a regulator, the Commission is committed to collecting, analyzing and maintaining data for use by government, researchers and other stakeholders who require university education statistics. This effort is based on the belief that in a dynamic, knowledge-driven world, no meaningful national development can be achieved without feeding the national statistical database with timely and reliable data.

The data collected from universities covered various aspects in the university such as enrolment, staffing, programmes, staff qualification, graduations and enrolment of students with disabilities. This data lays the foundation for statistical information which will offer a reliable database for designing evidence-based policy in universities in Kenya and forms the basis for further research and analysis. Policy makers, researchers, postgraduate students, State Departments, Non-Governmental Organizations and numerous other stakeholders in the education sector will find this data invaluable.

2.2 Design and Scope of Data

The target population was all public and private universities in Kenya. At the time of collecting the data, there were a total of 74 Public and Private Universities licensed to operate in Kenya. A survey design was therefore deemed suitable.

Data was collected using a questionnaire with six key variables namely: Academic programmes, students' enrolment (county, international, with disabilities), staffing, graduation trends, research output and finances. With respect to academic programmes, the International Standard Classification of Education (ISCED) developed by UNESCO was adopted. It classifies programmes offered in universities into ten clusters and provides a means for comparison of

education statistics and indicators across countries through uniform and internationally agreed definitions (UNESCO Institute for Statistics, 2014).

The tool captured enrolment of students in public and private universities desegregated by gender, academic level, country of origin and disability. For academic staff, data on gender, academic qualification, staff establishment and tenure (i.e. whether full time or part time) were captured in the tool.

2.3 Data Collection Instrument

A Questionnaire tool developed by the Commission in conjunction with research experts from the University of Groningen in Netherlands was revised and tested before being rolled out to collect data from universities. The tool, which was also used in the previous year had been subjected to two validation workshops attended by Registrars and Directors of Quality Assurance from each university.

2.4 Data Collection and Processing

Questionnaires were sent to all Universities through e-mail. This was followed by phone calls to confirm that the questionnaires had been received. The contact persons in universities were academic registrars and/or quality assurance officers. In cases where the two could not be reached, vice chancellors were contacted to assist in identifying a suitable officer to provide the required information. The data collection exercise took five months to complete - June to October during the academic year of 2017/2018. There were 72 public and private universities at the time of collecting the data.

Data received from universities were cleaned, collated and entered into one main excel sheet and analyzed according to the following variables: university programmes, student enrolment, staff qualifications and establishments, graduation trends and finance. Descriptive statistics, which included frequency tables, percentages, ratios, charts and graphs were used to analyze data.

2.5 Validation of Data

The tool for collecting data had a self-validating sheet which indicated data sets that were incongruent. This was followed by phone calls to Registrars/Quality Assurance officers and physical visits to the universities when communication proved difficult. Officers from Planning,

Research and Development Division in the Commission engaged in cross-checking and verifying data with the universities.

2.6 Limitations of Data

Data collection was not without limitations, among them responses that had blank spaces, especially with regard to privately sponsored students. Classifying students as either self-sponsored, Government-sponsored or Distance learners was quite a challenge to some of the institutions.

The tool did not also provide for data entry on students with multiple disabilities. Some universities admitted not being certain of where to place the programmes they offered against the UNESCO classification, while some programmes were not listed in the classification. There was also the likelihood that there was double counting of lecturers who taught on part-time in several universities which might have then affected the results.

Some institutions provided incomplete financial information while others failed to provide in accordance with the instructions given in some of the universities. Another limitation was the fact that private and public universities have their financial years beginning (and ending) at different months of the year. However, consultations were made to enter appropriate figures.

Chapter Three

Academic Programmes

3.1 Introduction

Education and training characterized by high responsiveness to the needs of society and the economy has been the main focus for successful economies. This focus has been documented in global and national development agenda. The economic success of a nation is directly determined by the quality of its education system and the most effective factor of production is human capital expressed in knowledge, skills, creative abilities and moral qualities of individuals in society (Adina-Petruta, 2012). University education plays a vital role in socio-economic development by building human capabilities, producing and disseminating the knowledge required for a knowledge-driven economy. As seats of learning and innovation, universities act as anchors in local economies. The multi-faceted impact of university education should enable individuals to develop their capabilities to the highest potential; serve the needs of an adaptive, sustainable and knowledge-based economy, thus, play a major role in the shaping of a democratic, civilized and inclusive society.

In Kenya, the central role of universities in the realization of national development has been emphasized in several policy documents including the Kenya Vision 2030, Sessional Paper No. 14 of 2012; Sessional Paper No. 2 of 2015 which recommended the establishment of a Competency Based Curriculum; and the Big 4 Agenda of 2018. Universities are expected to play a leading role in the achievement of the Big 4 Agenda through training, research, innovation and technology interventions in priority areas namely: Manufacturing, Food Security and Nutrition; Affordable Health Care and Affordable Housing. It is thus expected that for the country to achieve its ambitious development agenda, universities must offer programmes and training that impart the competencies required to meet the aspirations embodied in the development agenda.

Consequently, this chapter provides a summary of the various programmes that were on offer by universities in Kenya during the 2017/2018 academic year. An explicit summary of the number and nature of programmes in each of the universities is provided, based on the International

Standard Classification of Education (ISCED) (UNESCO Institute for Statistics, 2014). The chapter concludes with a summary and provides recommendations for further action.

3.2 Number of Academic Programmes in Public and Private Universities in Kenya

University programmes were classified into five levels namely: Doctorate, Masters, Post Graduate Diploma, Bachelors and Diploma. The total number of programmes increased significantly by 28.5% from 3,980 in 2016/2017 to 5,113 in 2017/2018. Bachelors' level had the highest proportion of programmes at 41.35% (2114), followed by Masters at 30.39% (1554) and Doctorate level at 15.90% (813) while the level of Post Graduate Diploma recorded the least number of Programmes at 1.82% (93). The number of Diploma programmes reported in the period was 539. Public Chartered Universities had the highest proportion of the total number of programmes at 79.42% (4061), followed by Private Chartered Universities at 14.81% (757), while Private Universities Constituent Colleges had the least number of programmes at 0.92% (47) as provided in Table 3.1.

Table 3.1

Number of Academic Programmes per University Category and Academic Level

University Category	No. of Universities	No. of Programmes per University Category						Grand Total	% Proportion
		PhD	Masters	PGD	Bachelors	Diploma			
Public Chartered Universities	31	749	1319	80	1614	299	4061	79.42	
Public Universities Constituent Colleges	6	7	13	0	59	25	104	2.03	
Private Chartered Universities	18	55	197	12	366	127	757	14.81	
Private Universities Constituent Colleges	5	1	13	1	18	14	47	0.92	
Private Universities with LIA	14	1	12	0	57	74	144	2.82	
Total	74	813	1554	93	2114	539	5113	100.00	
% Proportion		15.90	30.39	1.82	41.35	10.54	100.00		

The total number of programmes in Public universities increased from 3,272 in 2016/2017 to 4,165 programmes in 2017/2018, representing an increase of 27.3%. Similarly, Private universities recorded an increase of 33.9% in the same period. The numbers include Diploma programmes which had not been recorded in the 2016/2017 report.

Public universities with the highest number of programmes as provided in Annex 1 were University of Nairobi (571), Kenyatta University (318), Moi University (256), Jomo Kenyatta University of Agriculture and Technology (250), Maseno University (248) and Masinde Muliro University of Science and Technology (206) while the least number of programmes were reported by Taita Taveta University (11), the Cooperative University of Kenya (18), Kirinyaga and Garissa universities , each with 31 programmes . There was a marginal increase of 15.9% recorded in the number of programmes offered in Public Universities Constituent Colleges. However, the notable increase was attributed to three additional constituent colleges that were accredited during the year.

Programmes in Private Chartered Universities increased by 3.3% from 610 programmes in 2016/2017 to 630 programmes in 2017/2018 excluding Diploma programmes. Private Universities Constituent Colleges maintained the same number of programmes as reported in 2016/2017. There were two additional universities with Letters of Interim Authority which contributed to a marginal increase of 7.14% in the number of programmes in that category. Notably, 51.3% of the programmes offered in universities with LIA were Diploma programmes.

Overall, Bachelor's level had the highest number of programmes at 2,114 (41.35%) while Post Graduate Diploma had the least with 93 programmes (1.82%). All the levels however, recorded a significant increase from 2016/2017 academic year with the Bachelors level recording the highest increase with an additional 226 programmes.

3.3 Programmes per ISCED Cluster and Academic Levels

The following sections provide an overview of the universities programmes classified into ten (10) fields or clusters of education and training adopted from the International Standard Classification of Education (ISCED). This analysis however, altered the ISCED classification by separating Business Administration and Law hence treating them as two distinct clusters.

3.3.1 Programmes per Cluster in Public Chartered Universities

Table 3.2 provides the number and proportion of programmes per domain across the five academic levels in Public Chartered Universities respectively.

Table 3.2

Number of Programmes per cluster in Public Chartered Universities

Clusters	No. of Programmes per Cluster in Public Chartered Universities						
	PhD	Masters	PGD	Bachelors	Diploma	Grand Total	Proportion (%)
Agriculture, Forestry, Fisheries and Veterinary	129	178	10	195	36	548	13.49
Arts and Humanities	78	130	3	132	7	350	8.62
Business and Administration	46	109	8	149	67	379	9.33
Law	1	2	0	7	0	10	0.25
Education	102	145	17	136	27	427	10.51
Engineering, Manufacturing and Construction	40	77	4	148	35	304	7.49
Health and Welfare	60	161	11	148	26	406	10.00
Information and Communication Technology	20	31	3	99	23	176	4.33
Natural Sciences, Mathematics and Statistics	193	314	10	351	8	876	21.57
Services	16	27	3	58	21	125	3.08
Social Sciences, Journalism and Information	64	145	11	191	49	460	11.33
Grand Total	749	1319	80	1614	299	4061	100
% Proportion	18	32	2	40	8	100	

The proportion of programmes per cluster in Public Chartered Universities varied significantly across the five academic levels. Clusters with the highest number of programmes were Natural Sciences, Mathematics and Statistics with 876 programmes representing 22% followed by Agriculture, Forestry, and Fisheries and Veterinary with 548(14%) and Social Sciences, Journalism and Information with 11.3% of the total number of programmes. Clusters with the

least number of programmes were Law with 10 (0.25%), Services with 125 (3%) and Information and Communication Technology with 176 programmes (4%).

3.3.2 Programmes per Cluster in Public Universities Constituent Colleges

Table 3.3 provides the number and proportion of programmes per domain across the five academic levels in Public Universities Constituent Colleges.

Table 3.3

Number of Programmes per Cluster in Public Universities Constituent Colleges

Programme Domain	University Academic Levels						
	PhD	Masters	PGD	Bachelors	Diploma	Total	% Proportion
Agriculture, Forestry, Fisheries and Veterinary	0	0	0	4	1	5	4.81
Arts and Humanities	1	5	0	3	0	9	8.65
Business and Administration	1	3	0	8	9	21	20.19
Law	0	0	0	0	0	0	0.00
Education	4	4	0	13	1	22	21.15
Engineering, Manufacturing and Construction	0	0	0	0	0	0	0.00
Health and Welfare	0	0	0	6	4	10	9.62
Information and Communication Technology	0	0	0	3	3	6	5.77
Natural Sciences, Mathematics and Statistics	0	0	0	8	1	9	8.65
Services	0	0	0	2	2	4	3.85
Social Sciences, Journalism and Information	1	1	0	12	4	18	17.31
Total	7	13	0	59	25	104	100
% Proportion	7	13	0	56	24	100	

Clusters with the highest number of programmes were Education (22), Business and Administration (21); Social Sciences, Journalism and Information (18) and Health and Welfare (10). The least represented clusters in Public Universities Constituent Colleges were Information

Communication and Technology (6), Agriculture, Forestry, Fisheries & Veterinary (5) and Services with 4 programmes.

None of the six Public Universities Constituent Colleges had programmes in Law, Engineering, Manufacturing and Construction clusters as illustrated.

3.3.3 Programmes per Cluster in Private Chartered Universities

The number of programmes offered in Private Chartered Universities increased significantly by 24% from 610 in 2016/2017 to 757 in 2017/2018 despite the fact that there was no change in the number of Private Chartered Universities between the two periods as provided in Table 3.4.

Table 3.4

Number of Programmes per Cluster in Private Chartered Universities

Programme Domain	Academic Levels						% Proportion
	PhD	Masters	PGD	Bachelors	Diploma	Total	
Agriculture, Forestry, Fisheries and Veterinary	1	1	0	8	4	14	1.85
Arts and Humanities	20	52	1	52	18	143	18.89
Business and Administration	10	45	3	58	32	148	19.55
Law	0	2	0	5	2	9	1.19
Education	6	19	6	34	12	77	10.17
Engineering, Manufacturing and Construction	0	0	0	8	2	10	1.32
Health and Welfare	6	27	0	64	18	115	15.19
Information and Communication Technology	4	16	0	37	13	70	9.25
Natural Sciences, Mathematics and Statistics	2	8	0	27	1	38	5.02
Services	0	1	0	12	7	20	2.64
Social Sciences, Journalism and Information	6	26	2	61	18	113	14.93
Total	55	197	12	366	127	757	100
% Proportion	7	26	2	48	17	100	

Business and Administration had the highest number of Programmes (148) followed by Arts & Humanities (143) and Health & Welfare (115). The least popular clusters were Law (9), Agriculture, Forestry, Fisheries and Veterinary (14) and Engineering, Manufacturing and

Construction with 10 programmes. Bachelors' level had the highest number of programmes across the clusters with 366 programmes, followed by Masters with 197 programmes, Diploma 127 programmes, while Doctorate and Post Graduate Diploma had 55 and 12 programmes respectively.

All the clusters were represented with the highest (Business and Administration) 20% and the least (Law) at 1.2%.

3.3.4 Programmes per Cluster in Private Universities Constituent Colleges

The number of programmes offered in Private universities Constituent Colleges remained the same as the previous year and the additional 14 programmes were offered at Diploma level as seen in Table 3.5.

Table 3.5

Number of Programmes per Cluster in Private Universities Constituent Colleges

Programme Clusters	Number of Programmes per Domain in Private Universities Constituent Colleges						
	PhD	Masters	PGD	Bachelors	Diploma	Grand Total	% Proportion
Agriculture, Forestry, Fisheries & Veterinary	0	0	0	0	0	0	0
Arts & Humanities	0	7	1	4	1	13	28
Business & Administration	0	1	0	2	4	7	15
Law	0	0	0	0	0	0	0
Education	0	2	0	3	1	6	13
Engineering, Manufacturing & Construction	0	0	0	0	0	0	0
Health & Welfare	0	1	0	4	3	8	17
Information Communication & Technology	0	0	0	0	2	2	4
Natural Sciences, Mathematics & Statistics	0	0	0	0	0	0	0
Services	0	0	0	0	0	0	0
Social Sciences, Journalism & Information	1	2	0	5	3	11	23
Grand Total	1	13	1	18	14	47	100
% Proportion	2	28	2	38	30	100	

Bachelor's level had the most number of programmes of the programmes (18) while PhD and Post Graduate Diploma had one programme each. Arts & Humanities cluster topped the nature

of programmes offered with 27.7%, followed by Social Sciences, Journalism and Information 23.4%, while none of the institutions offered programmes in Agriculture Forestry, Fisheries and Veterinary, Law, Engineering, Manufacturing & Construction, Natural Sciences Mathematics & Statistics as well as Services clusters.

3.3.5 Programmes per Cluster in Universities with Letter of Interim Authority

Clusters with the highest number of programmes were Business, Administration and Law (37), followed by Arts and Humanities (35), Information, Communication and Technology (25) and Education with 18 programmes. Other than ICT, STEM related programmes were either scarcely represented or not offered at all in Private Universities with LIA as provided in Table 3.6.

Table 3.6

Number of Programmes per Cluster in Private Universities with LIA

Clusters	Number of Programmes per Domain in Universities with LIA						
	PhD	Masters	PGD	Bachelors	Diploma	Total	% Proportion
Agriculture, Forestry, Fisheries & Veterinary	0	0	0	1	1	2	1.4
Arts and Humanities	0	5	0	6	3	14	9.7
Business & Administration	1	4	0	14	17	36	25
Law	0	0	0	1	0	1	0.7
Education	0	1	0	10	10	21	14.6
Engineering, Manufacturing & Construction	0	0	0	0	0	0	0
Health & Welfare	0	1	0	6	14	21	14.6
Information and Communication Technology	0	0	0	12	13	25	17.4
Natural Sciences, Mathematics and Statistics	0	0	0	1	0	1	0.7
Services	0	0	0	2	8	10	6.9
Social Sciences, Journalism & Information	0	1	0	4	8	13	9
Total	1	12	0	57	74	144	100
% Proportion	1	8	0	40	51		

There was a significant increase in the number of programmes offered during the period attributable to inclusion of the Diploma programmes as well as accreditation of two additional Private Universities with LIA.

3.3.6 Programmes per Cluster in both Public and Private Universities

Over 50% of the programmes were in four clusters namely Natural Sciences, Mathematics and Statistics (924, 18%), Social Sciences, Journalism and Information (615, 12%), Business and Administration (591, 12%) and Agriculture, Forestry, Fisheries and Veterinary(569, 11%). STEM related clusters had a representation of 41% while the Big Four Agenda had a significant representation in the various fields as follows: Housing, Engineering, Manufacturing and Construction (279, 6%), Health (560, 11%) and Food Security (569, 11%). The figures are provided in Table 3.7.

Table 3.7

Number of Programmes per Cluster in both Public and Private Universities

Cluster	No. of Programmes per Cluster in Public and Private Universities						
	PhD	Masters	PGD	Bachelors	Diploma	Total	% Proportion
Agriculture, Forestry, Fisheries and Veterinary	130	179	10	208	42	569	11.13
Arts and Humanities	99	199	5	197	29	529	10.35
Business and Administration	58	162	11	231	129	591	11.56
Law	1	4	0	13	2	20	0.39
Education	112	171	23	196	51	553	10.82
Engineering, Manufacturing and Construction	40	77	4	156	37	314	6.14
Health and Welfare	66	190	11	228	65	560	10.95
Information and Communication Technology	24	47	3	151	54	279	5.46
Natural Sciences, Mathematics and Statistics	195	322	10	387	10	924	18.07
Services	16	28	3	74	38	159	3.11
Social Sciences, Journalism and Information	72	175	13	273	82	615	12.03
Grand Total	813	1554	93	2114	539	5113	100

% Proportion	16	30	2	41	11		
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3.4 Summary and Recommendations

The number of academic programmes offered in the universities increased from 3,386 to 3,980, representing an increase of 594 programmes (15%) in the 2016/2017 academic year. It is worth noting that the previous statistics excluded Diploma programmes which were 539 in the 2017/2018 academic year. The data reveals that the majority of academic programmes were in Natural Sciences, Mathematics and Statistics (924, 18%), followed by Social Sciences, Journalism and Information (615, 12%). There was a significant increase in the number of programmes under the Engineering, Manufacturing, Construction and Architecture cluster from 229 programmes in the year 2016/2017 to 314 in the year under review. Agriculture, Forestry, Fisheries and Veterinary had a significant representation with 569 programmes, 97% of which were offered by Public Universities.

Quality and relevance in university education foregrounds the importance of knowledge acquisition at the university. Consequently, the Commission recommends that Universities continually undertake programme review to determine their effectiveness, currency and viability both in terms of disciplined-based knowledge and cross-cutting skills. In addition, universities should continuously identify programmes that address the changing work force needs in order to keep pace with the competitive and the continually evolving global environment. Further, universities should aim at mounting innovative programmes that will produce more analytical, critical and globally competitive graduates.

Chapter Four

Enrolment

4.1 Introduction

With over 200 million higher education institutions in the world, expanding access to number of students accessing tertiary education is still a high priority on the development agenda of any nation; not only to meet international commitments but also importantly to ensure a continual supply of an educated workforce into the economy.

As access increase, we must mitigate the challenges of job-skills matching to improve graduate employability, financing university education, assuring quality of academic programmes and resources, faculty capacity building and retention, knowledge generation and diffusion to solve local challenges. Policy making should also be centred on quantity and quality education planning and policy. Matters of relevance, knowledge application to directly link with employability and economic development.

This section includes analysis and summaries on data collected from 73 Universities categorized as follows; 31 Public Chartered Universities 18 private Chartered Universities, 14 Universities with Letters of Interim Authority, 6 Public Constituent Colleges and 4 Private Constituent Colleges. Analysis include enrolment by University category, enrolment by gender, enrolment by academic level, enrolment by fields of education and training, enrolment by county, enrolment of international students and enrolment of students with disabilities.

In 2017/2018, enrolment data included Diploma level unlike in 2016/2017 where this level was omitted in the analysis. Also important to note is the departure from programme categorization into 20 clusters and adoption of the International Standard Classification of Education (ISCED) 10 broad fields of education and training. ISCED is the reference classification for organizing education programmes and related qualifications by education levels and fields recognizes 11 broad fields of education and training, namely; Generic programmes and qualifications; Education; Arts and Humanities; Social Sciences, Journalism and Information; Business, Administration and Law; Natural Sciences, Mathematics and Statistics; Information and Communication Technologies; Engineering, Manufacturing and Construction; Agriculture,

Fisheries, Forestry and Veterinary; Health and Welfare and Services. ISCED recognizes Diploma as the point of entry into tertiary education (UNESCO Institute for Statistics, 2014).

4.2 Enrolment in Public and Private Universities

Total enrolment excluding Diploma level in public and private universities declined from 547,316 students in the year 2016 to 538, 820 students in 2017. This represents an overall marginal decline in enrolment of 1.55%. But interestingly there was an increase of students from 88,360 students in 2016 to 108,121 students in 2017 in private universities; while in public universities, there was a decline in enrolment from 458,956 students in 2016 to 456,924 students in 2017. The placement of Government Sponsored students by Kenya Universities and Colleges Central Placement Service (KUCCPS) into Private universities, which started in 2016, may explain the increase in enrolment in private universities while stringent conditions on management of school based programmes can partly account for the decline in enrolment in public universities. Across the different levels in public universities, the rise in enrolment was recorded at Doctorate, Masters and PGD levels while the numbers reduced at Bachelors level as depicted in Table 4.1.

Table 4.1

Enrolment in Public and Private Universities

PROGRAMME	PUBLIC UNIVERSITIES		PRIVATE UNIVERSITIES		TOTAL	
	2016	2017	2016	2017	2016	2017
Doctorate	8372	17619	1205	2822	9577	20441
Masters	48767	50960	9454	10727	58221	61687
Postgraduate Diploma	890	1072	210	344	1100	1416
Bachelors	400927	368100	77491	86726	478418	454826
Diploma		19173		7502	0	26675
Total	458956	456924	88360	108121	547316	565045
% Change	-0.44%		22.36%		3.22%	

The number of undergraduate enrolment to Postgraduate Diploma is skewed to the former. The transition of Masters Students to PhD has improved significantly to the ratio of 4:1 as compared to 2016 where the ratio was 6:1.

4.3 Enrolment by Sponsorship and University Category

Student admission in Kenyan Universities is either through Government sponsorship also referred to as Module I or as self-sponsored students commonly referred to as Module II. In 2017/2018 a total of 284,866 students were enrolled as Government sponsored while 280,179 were enrolled as Self-sponsored as provided in Table 4.2.

Table 4.2

Enrolment by Sponsorship and University Category

University Category	Government Sponsored			Self-Sponsored			Grand Total
	Male	Female	Total	Male	Female	Total	
Public Chartered Universities	155412	103901	259313	111234	82527	193761	453074
Public Constituent Colleges	1754	1335	3089	443	318	761	3850
Private Chartered Universities	10001	6975	16976	37980	35773	73753	90729
Private Constituent Colleges	264	243	507	1438	716	2154	2661
Universities with LIA	3300	1681	4981	3533	6217	9750	14731
TOTAL	170731	114135	284866	154628	125551	280179	565045

4.4 Enrolment in Public and Private Universities by Gender and Academic Level

There were more male students than female students enrolled at all programme levels in both public and private universities as depicted in Table 4.3. In total, male enrolment represented 58%, while female enrolment was 42% as illustrated in Figure 4.1.

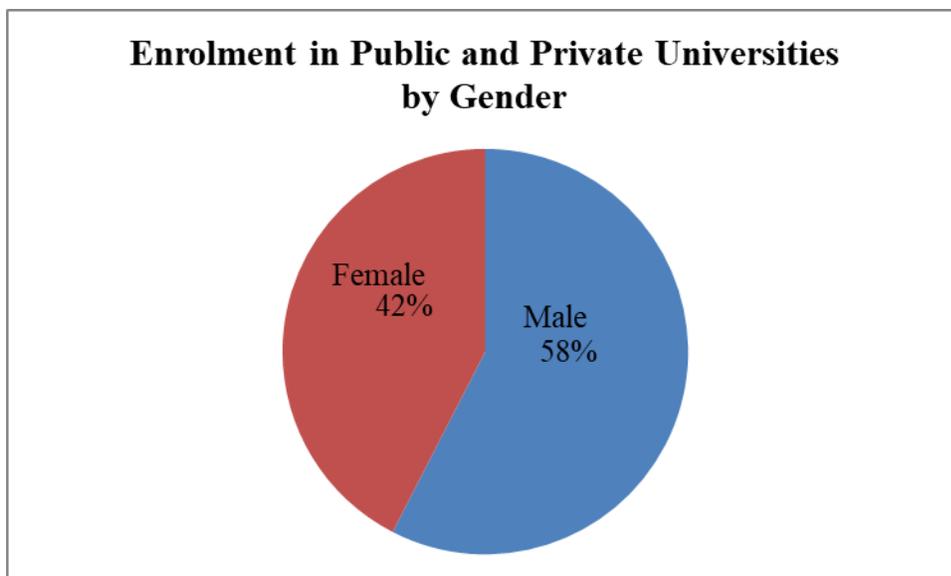


Figure 4.1: Enrolment in Public and Private Universities by Gender

The gap between the male and female enrolment in universities has become slightly narrower than in 2016 (which had a male: female ratio of 59:41). Notably in private universities, the gap between the female and male student enrolments is narrower (52% males and 48% females) than in public universities (59% males and 41% females). This indicates that the country is on the right path towards achieving Sustainable Development Goals by 2030 of ensuring equal access for all women and men to affordable quality, technical, vocational and tertiary education, including University (World Bank, 2018).

Table 4.3

Enrolment in Public and Private Universities by Gender and Academic Level

Enrolment Programme	Public Universities		Private Universities		Total Enrolment	
	Male	Female	Male	Female	Male	Female
Doctorate	10743	6876	1588	1234	12331	8110
Masters	29860	21100	5656	5071	35516	26171
Postgraduate Diploma	643	429	217	126	860	555
Bachelors	216134	151966	46093	40633	262227	192599

Diploma	11463	7711	2961	4541	14424	12252
Total	268843	188082	56515	51605	325358	239687

4.5 Enrolment by Cluster and Academic Level in Public and Private Universities

Data was analyzed and categorized into 10 fields of education and training recognized by UNESCO. Business, and Administration had the highest enrolments with 134,202 students which accounted for 23.8% of total enrolments, followed by Education with 122,558 students (21.7%) and Social Sciences, Journalism and Information with 66,406 while the clusters with the lowest enrolments were Law (1.3%), Services(2.08%) and Agriculture, Forestry, Fisheries and Veterinary (5.13%) as illustrated in Table 4.4.

Table 4.4

Enrolment in Public and Private Universities by Field of Education and Training

Cluster	Doctorate		Masters		Postgraduate		Bachelors		Diploma		Total M	Total F	%
	M	F	M	F	M	F	M	F	M	F			
Agriculture, Forestry, Fisheries and Veterinary	1030	519	828	485	60	52	15481	10216	210	125	17609	11397	5.13
Arts and Humanities	872	518	2710	1672	33	3	16184	14027	1171	1091	20970	17311	6.78
Business and Administration	4760	2843	13843	11046	78	92	49672	41258	6084	4526	74437	59765	23.75
Law	19	5	516	208	2	0	3237	3241	1	0	3775	3454	1.28
Education	1359	1151	5118	4867	548	339	56801	50603	925	847	64751	57807	21.69
Engineering, Manufacturing and Construction	279	65	816	198	0	0	21748	6163	829	216	23672	6642	5.37
Health and Welfare	738	532	2721	2098	26	22	16629	13902	1198	1285	21312	17839	6.93

Information and Communication Technology	185	76	1827	855	0	0	22450	9038	1322	699	25784	10668	6.45
Natural Science, Mathematics and Statistics	1445	1082	3137	1482	30	12	26912	15504	50	17	31574	18097	8.79
Services	140	135	260	248	71	26	4603	4928	482	846	5556	6183	2.08
Social Science, Journalism and Information	1504	1184	3740	3012	13	9	28474	23719	2152	2599	35883	30523	11.75
Grand Total	12331	8110	35516	26171	861	555	262191	192599	14424	12251	325323	239686	100

At Doctorate level, Business and Administration cluster had the highest enrolment with 7603 students representing 37% of all Doctoral students, followed by Social Sciences, Journalism and Information with 2688 and Natural Sciences, Mathematics and Statistics 2527 while clusters with the least enrolments were Law with 24 students, Information and Communication Technologies with 261 and Services with 275 students.

At Masters Level, Business and Administration cluster had the highest enrolments of 24889 students followed by Education cluster with 9985 students. The clusters fields with the least enrolments were Services with 508 students, followed by Law with 724 and Engineering, Manufacturing and Construction with 1,014.

At Bachelors level, Education cluster had the highest enrolments of 107404 students followed by Business and Administration with 90930 students then Natural Sciences, Mathematics and Statistics with 42416 students. Services and Law Clusters had the least enrolments with 9531 and 6478 students respectively.

At Postgraduate Diploma level, Education cluster had the highest enrolments with 887 students, followed by Business and Administration with 170 students and Agriculture, Forestry, Fisheries and Veterinary with 112 students. Engineering, Manufacturing and Construction and Information and Communication Technology Clusters had zero enrolment while Law had 2 students.

At Diploma level, Business, Administration and Law field had the highest enrolment with 9764 students, followed by Arts and Humanities with 3738 students and Social Sciences, Journalism and Information with 3337 students. The fields with the least students were; Natural Sciences, Mathematics and Statistics with 228 students, Agriculture, Forestry, Fisheries and Veterinary with 655 students and Services with 788 students.

4.5.1 Enrolment by Cluster in Public Universities

In Public Universities, Education cluster had the highest enrolment with 101773 students representing followed by Business and Administration with 98686 students and Social Sciences, Journalism and Information with 49237 students. Law had the least enrolment with 3756 students, then Services with 9926 and ICT with 25135 students as illustrated in Table 4.5

Table 4.5***Enrolments by Cluster and Academic level in Public Universities***

Cluster	Doctorate		Masters		Postgraduate		Bachelors		Diploma		Total Male	Total Female
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
Agriculture, Forestry, Fisheries and Veterinary	1028	518	799	455	60	52	15160	10051	192	103	17239	11179
Arts and Humanities	635	452	1792	1330	29	1	14243	13522	504	164	17203	15469
Business and Administration	3958	2262	10950	8340	59	74	36667	28017	5381	2978	57015	41671
Law	19	5	491	193	0	0	1601	1447	0	0	2111	1645
Education	1174	908	4939	4640	355	233	46507	41437	854	726	53829	47944
Engineering, Manufacturing and Construction	279	65	816	198	0	0	21216	6049	826	215	23137	6527
Health and Welfare	529	369	2345	1672	26	22	13071	10040	872	927	16843	13030
Information and Communication Technology	172	73	1327	616	0	0	15683	6214	695	354	17877	7257
Natural Science, Mathematics and Statistics	1420	1066	3089	1444	30	12	25894	14763	50	17	30483	17302
Services	140	135	212	225	71	26	4228	4264	306	319	4957	4969
Social Science, Journalism and Information	1389	1023	3100	1987	13	9	21864	16162	1783	1907	28149	21088
Grand Total	10743	6876	29860	21100	643	429	216134	151966	11463	7710	268843	188081

At Doctorate level, Business and Administration had the highest enrolment with 6220 students, followed by Natural Sciences, Mathematics and Statistics with 2486 students and Social Sciences, Journalism and Information with 2412 students while the least were Law with 24 students, ICT with 245 students and Services with 275.

At Masters level, Business and Administration cluster had the highest enrolment with 19290, followed by Education with 9579 students and Social Sciences, Journalism and Information with

5087 students. The clusters with the least students were Services with 437 students, Law with 684 students and Agriculture, Forestry, Fisheries and Veterinary with 1,254 students.

At Bachelors level, Education had the highest enrolment with 87,944 students, followed by Business and Administration with 64,684 students and Natural Sciences, Mathematics and Statistics with 40,657. The fields with the least students were Law with 3,048 and Services with 8,492 students.

At Postgraduate Diploma level, the fields with the highest enrolments were Health and Welfare with 592 students, Business, Administration and Law with 192 students and Agriculture, Forestry, Fisheries and Veterinary with 149 students while ICT, Natural Sciences, Mathematics and Statistics and Social sciences, Journalism and Information fields had zero students.

At Diploma level, fields with the highest enrolment were Business, Administration and Law with 7,503 students, followed by Health and Welfare with 1,983 students and Arts and Humanities with 1,947 students. The least enrolled fields were Natural Sciences, Mathematics and Statistics with 228 students, Agriculture, Forestry, Fisheries and Veterinary with 647 students and Services with 788 students.

4.5.2 Enrolment by Cluster and Academic Level in Private Universities

In Private Universities, the highest enrolments were in Business and Administration cluster with 35,516 students representing 32.85% of the total enrolments followed by Education with 20,785 students (19.2 %) and Social Sciences, Journalism and Information cluster with 17,169 students representing 15.8% of total students in private universities. The least students' numbers were registered in Agriculture, Forestry, Fisheries and Veterinary with 588 students (0.54 %), Engineering, Manufacturing and Construction with 686 students (0.63 %) and Services with 1,813 students (1.68%) as illustrated in Table 4.6.

Table 4.6***Enrolment by Cluster in Private Universities***

Cluster	Doctorate		Masters		Postgraduate		Bachelors		Diploma		Total M	Total F	%
	M	F	M	F	M	F	M	F	M	F			
Agriculture, Forestry, Fisheries and Veterinary	2	1	29	30	0	0	321	165	18	22	370	218	0.54
Arts and Humanities	237	66	918	342	4	2	1941	505	667	927	3767	1842	5.19
Business and Administration	802	581	2893	2706	19	18	13005	13241	703	1548	17422	18094	32.85
Law	0	0	25	15	2		1636	1794	1	0	1664	1809	3.21
Education	185	243	179	227	193	106	10294	9166	71	121	10922	9863	19.22
Engineering, Manufacturing and Construction	0	0	0	0	0	0	568	114	3	1	571	115	0.63
Health and Welfare	209	163	376	426	0	0	3558	3862	326	358	4469	4809	8.58
Information and Communication Technology	13	3	500	239	0	0	6767	2824	627	345	7907	3411	10.47
Natural Science, Mathematics and Statistics	25	16	48	38	0	0	1018	741	0	0	1091	795	1.74
Services	0	0	48	23	0	0	375	664	176	527	599	1214	1.68
Social Science, Journalism and Information	115	161	640	1025	0	0	6610	7557	369	692	7734	9435	15.88
Grand Total	1588	1234	5656	5071	218	126	46093	40633	2961	4541	56516	51605	100

At Doctorate level, the Business and Administration cluster had the highest enrolment with 1383 students (49%), followed by Education with 428 students and Health and Welfare with 372 students. Clusters with the least enrolments were ICT with 16 students, Agriculture, Forestry,

Fisheries and Veterinary with three students, while Engineering, Manufacturing and Construction and Law had zero enrolment.

At Masters level, Business and Administration had the highest enrolments with 5,599 students, followed by Social Sciences, Journalism and Information with 1,655 students and Arts and Humanities with 1,260 students. Clusters with the least enrolments were Law with 40 students, Agriculture, Forestry, Fisheries and Veterinary with 59 students and Services with 71 students. Engineering, Manufacturing and Construction cluster had zero enrolment.

At Bachelor's level, the highest enrolment was in Business and Administration cluster with 26,246 students, followed by Education with 19,460 students and Social Sciences, Journalism and Information with 14,167 students. Agriculture, Forestry, Fisheries and Veterinary cluster had the least enrolment with 486 students.

At Postgraduate Diploma level, Education had the highest enrolment with 299 students while Business and Administration, Arts and Humanities and Law had 37, 6 and 2 students respectively. The rest of the clusters had zero enrolments.

At Diploma Level, the Business and Administration cluster had the highest enrolment with 2251 students followed by Arts and Humanities with 1,594 students and Social Sciences, Journalism and Information with 1,061 students. Engineering, Manufacturing and Construction, Law and Natural Sciences, Mathematics and Statistics and Services cluster had the least enrolment with 4, 1 and zero students.

From data in Table 4.6, it is apparent that private universities are negligibly contributing towards industry with skilled graduates in three of the Big Four Agenda (Manufacturing, Construction, and food sustenance (agriculture/fisheries/veterinary)).

4.6 University Enrolment by County

This section provides an analysis of student enrolment by their county of residence. This information is important as it shows the extent of access to university education by students from

the various parts of the country. It is however worthwhile to note that only 60 out of 74 universities were able to provide this type of data primarily because the parameter had not been captured at the point of students admission.

4.6.1 Students' enrolment by county

Nairobi county produced the largest number of students enrolled with 84,848 (20.59%) followed by Kisii and Machakos with 18,767 (4.6%) and 15,772 (3.8%) respectively. On the other hand, Marsabit County produced the least number of students with 1,281 (0.31%) followed by Mandera 1,367 (0.33%) and Tana River counties 1,406 (0.34%).

A gender analysis revealed that Nairobi County had the largest number of male students with 45,723 (22%), followed by Kisii and Machakos Counties with 9,929 (4.8%) and 6,122 (2.9%) respectively. Tana River county 434 (0.2%) produced the least number of male students followed by Isiolo 680 (0.3%) and Mandera 789 (0.4%) counties. Similarly, Nairobi County produced the largest number of female students 39,125 (19.3%), followed by Machakos with 9,650 (4.8%) and Kisii County with 8,838 (4.4%). On the other hand, Mandera, Marsabit and Tana River Counties produced the least number of female students. Figure 4.2 provides the percentage proportion of university students from all the counties that were enrolled during the reporting period.

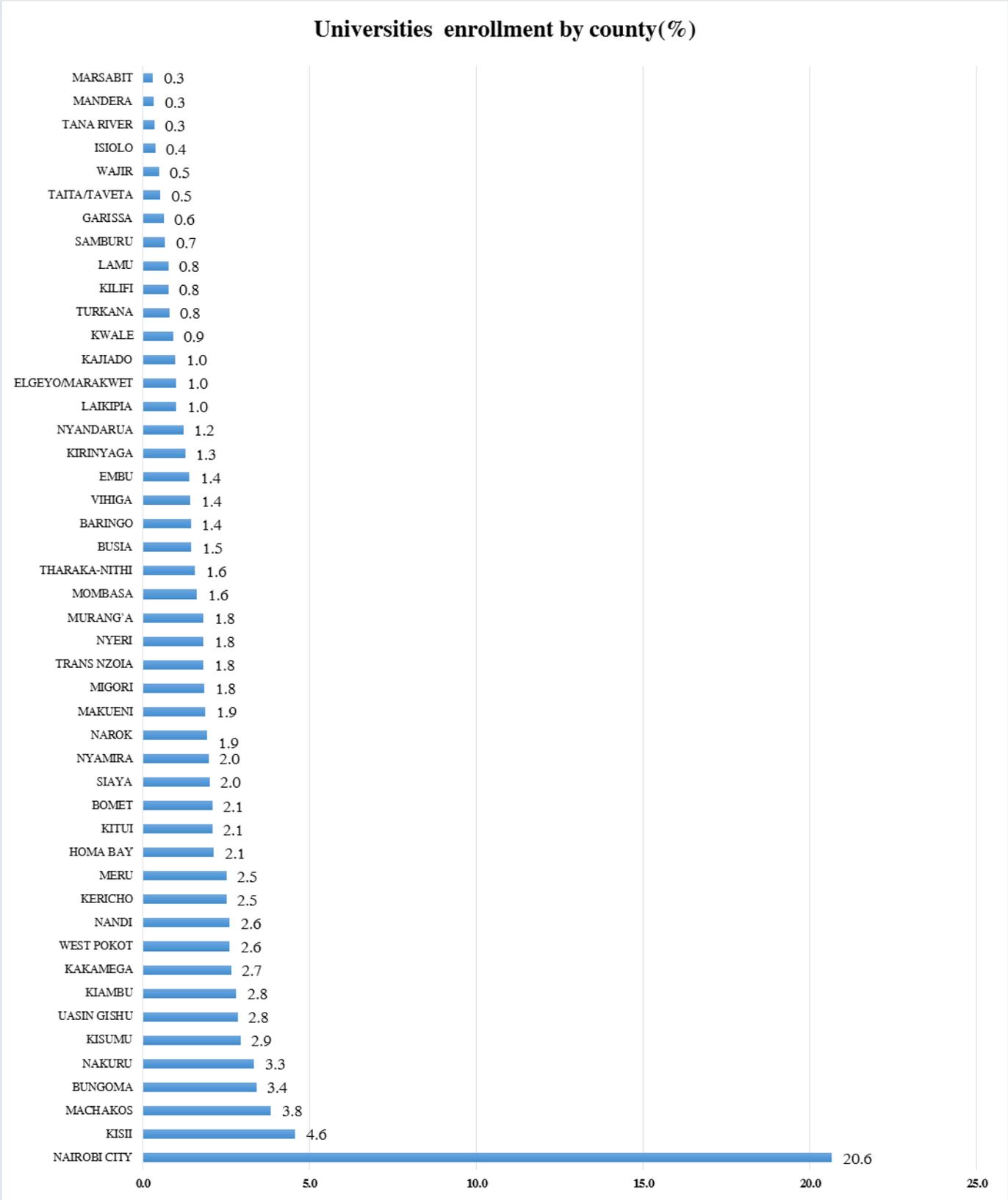


Figure 4.2: Enrolment in universities by county

4.6.2 Enrolment by County in Public Universities

Nairobi County produced the highest number of students enrolled in Public Universities with 63,167 (18.42%). This was followed by Kisii and Machakos Counties with 17,190 (5.01%) and 13,803 (4.02%) respectively. On the other hand, Mandera, Marsabit and Wajir Counties had the least number of students enrolled in Public Universities.

Nairobi, Kisii and Machakos produced the largest number of male students while Mandera, Marsabit and Tana River Counties had the least. Similarly, the bulk of female students in public universities were drawn from Nairobi with 29,295 (17.3%), Machakos with 8,633 (5.1%) and Kisii with 8,109 (4.08%). Mandera, Marsabit and Garissa counties produced the least female students with 410 (0.2%), 550 (0.3%) and 638 (0.4%) respectively. Additional figures are provided in Annex 18.

4.6.3 Enrolment by County in Private Universities

Nairobi county produced the largest number of student enrolled in Private Universities with 21,681 (31.9%). This was followed by Kiambu with 4135 (6.1%) and Nakuru with 3,656 (5.4%). Lamu, Tana River and Samburu Counties recorded the least number of students enrolled in private universities with 122 (0.2%), 133 (0.2%), and 198 (0.3%) respectively.

Nairobi, Kiambu and Nakuru countries produced the highest number of male students that were enrolled in Private Universities while Tana River, Taita Taveta and Samburu produced the least. The same was reported for female students enrolled in private universities. These figures are provided in Annex 19

Generally, Counties in Arid and Semi-Arid Lands (ASALS) regions continue to lag behind and are dismally represented in universities in terms of enrolment. These include Mandera (0.3%), Marsabit (0.3%), Tana River (0.3%) and Isiolo (0.4%).

Recommendation

There is need to increase access to universities for students in Arid and Semi-Arid areas. This would be by possibly lowering the existing affirmative cut-off point for university admission, providing financial assistance on affirmative basis and provision of adequate facilities at basic education level which would then improve enrolment in higher academic levels.

4.7 Enrolment of International Students

UNESCO defines international students as "students who have crossed a national or territorial border for the purpose of education and are now enrolled outside their country of origin. International students typically hold a non-resident visa status (sometimes called a student's visa) to pursue a tertiary degree (or higher) in the destination country. This section provides analysis of international students that were enrolled in various Kenyan universities at various levels. 45 universities comprising 14 Public Chartered, 1 Public Constituent College, 16 Private Chartered, 4 Private Constituent Colleges and 10 Institutions with Letters of Interim Authority provided the data.

4.7.1 Enrolment of International Students in Public and Private Universities

The number of international students enrolled in Kenyan universities increased from 4,730 in the year 2016/2017 to 5,373 students in the year 2017/2018, an increase of 13.59%. Private universities registered the most international students with 4,184 (77.9%). This is illustrated in Table 4.7.

Table 4.7

Enrolment of International Students in Public and Private Universities

University Category	PGD			Bachelors			Masters			Doctorate			Grand Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Private	19.0	18.0	37.0	1763.0	1110.0	2873.0	855.0	224.0	1079.0	184.0	11.0	195.0	2821.0	1363.0	4184.0
%	0.4	0.3	0.7	32.8	20.7	53.5	15.9	4.2	20.1	3.4	0.2	3.6	52.5	25.4	77.9
Public	3.0	12.0	15.0	394.0	153.0	547.0	347.0	130.0	477.0	120.0	30.0	150.0	864.0	325.0	1189.0
%	0.1	0.2	0.3	7.3	2.8	10.2	6.5	2.4	8.9	2.2	0.6	2.8	16.1	6.0	22.1
Total	22.0	30.0	52.0	2157.0	1263.0	3420.0	1202.0	354.0	1556.0	304.0	41.0	345.0	3685.0	1688.0	5373.0
%	0.4	0.6	1.0	40.1	23.5	63.7	22.4	6.6	29.0	5.7	0.8	6.4	68.6	31.4	100.0

4.7.2 Enrolment of International Students by Gender

International male students were more than international female students with 68.6% and 31.4% respectively. The number of International male students enrolled in public universities were more (864, 16.1%) than international female students (325, 6%). Similarly, private universities reported more international male students (2821, 52.5%) than female students (1,363, 25.4%). This is illustrated in Figure 4.3.

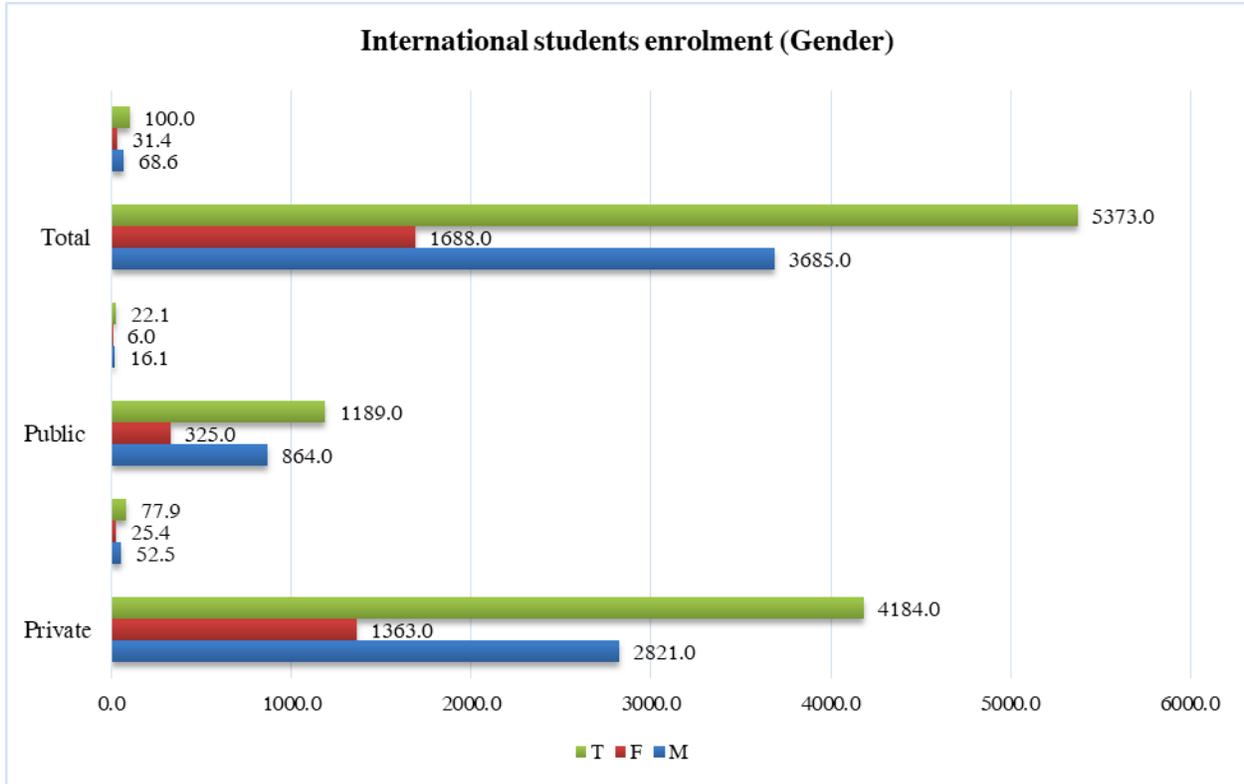


Figure 4.3: Enrolment of International Students by Gender

4.7.3 Enrolment of International Students by Academic Level

Most of the international students (3,420, 63.7%) were enrolled at the Bachelors level, followed by Masters (1,556, 29%) and the least numbers were enrolled at the Post Graduate Diploma level (52, 1%). Figure 4.4 illustrates this information.

Most of the international students in public universities were enrolled at the Bachelors level (547, 10.2%), followed by Masters (477, 8.9%) and the least numbers were enrolled at the Post Graduate Diploma level (15, 0.3%). Most of the international students in private universities

were enrolled at the Bachelors level (2,873, 53.5%), followed by Masters (1,079, 20.1%) and the least numbers were enrolled at the Post Graduate Diploma level (37, 0.7%).

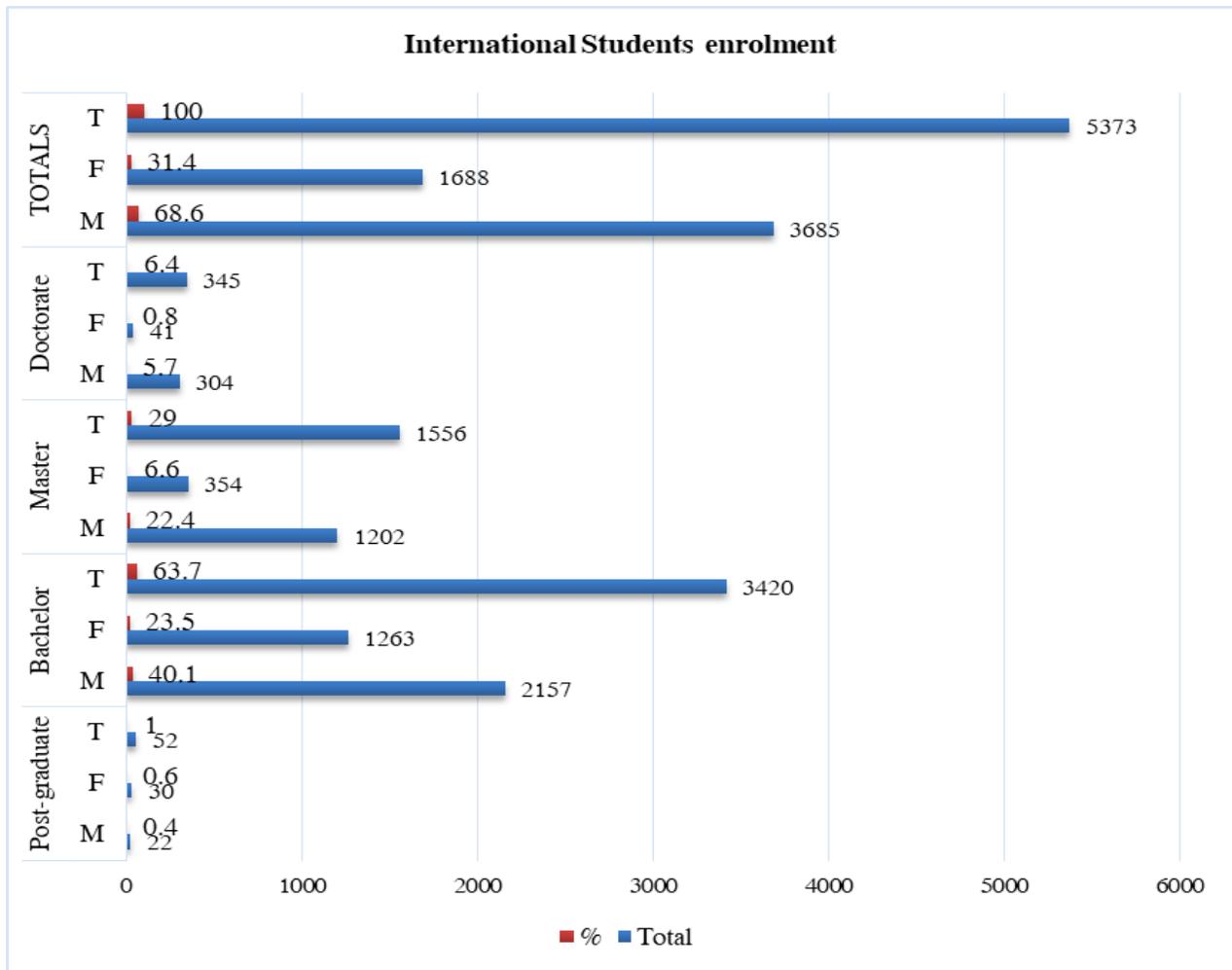


Figure 4.4: Enrolment of International Students by Academic Level

4.7.4 Enrolment of International Students by Country of Origin

Majority of international students originated from African countries. These included Tanzania with the highest number (585, 10.89%), followed by the Democratic Republic of the Congo (530, 9.86%) and Uganda (466, 8.67%).

Europe had few students enrolled with representation from Sweden (0.02%). The Middle East, Far East and Asia had minimal representation with students enrolled from Yemen (0.02%), India (2.35%) and Vietnam (0.02%) respectively. Other international students were from New Zealand (0.02%) and Mexico (0.03%) as illustrated in Figure 4.4.

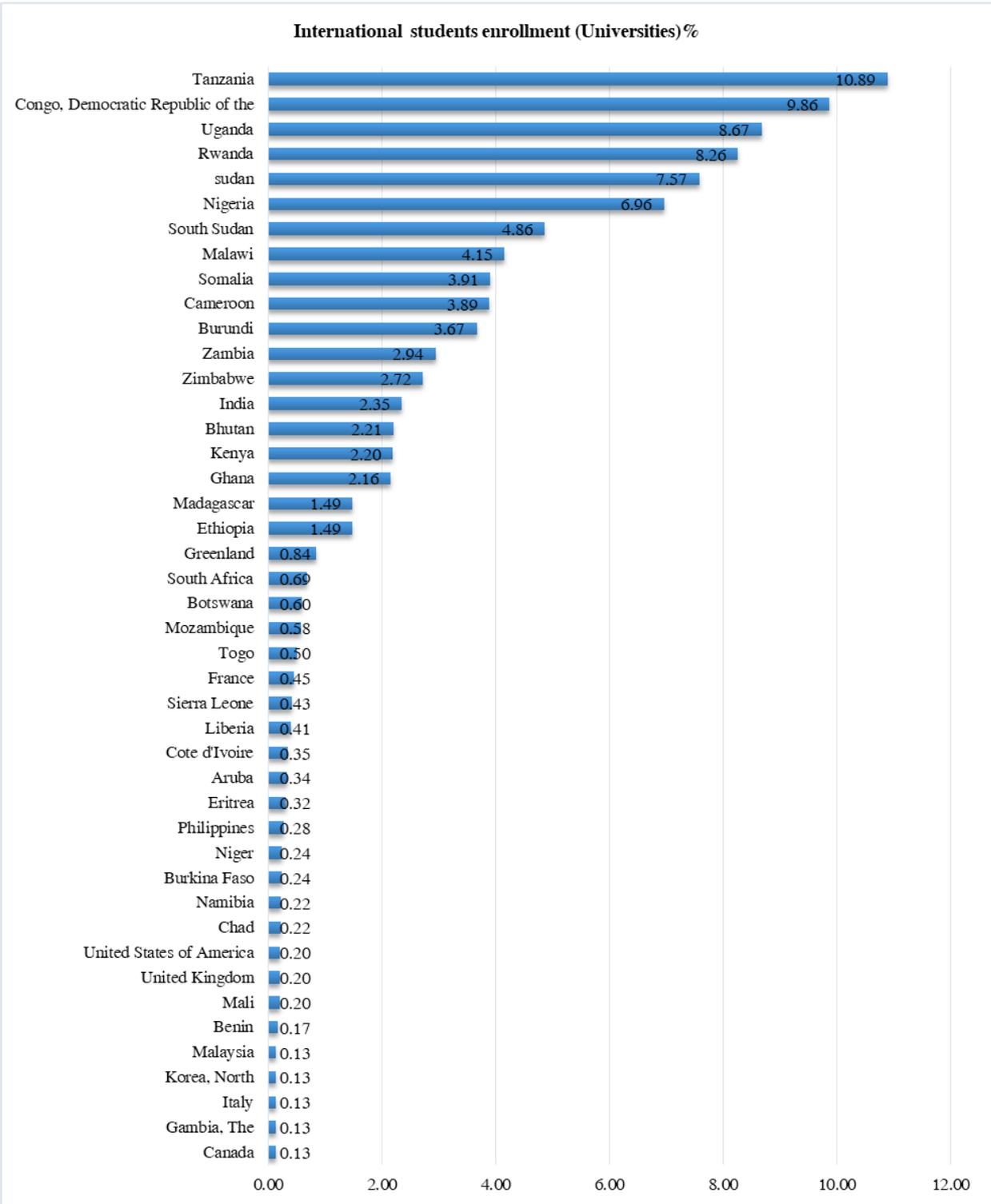


Figure 4.5: International Students enrolment in Universities

4.7.5 Enrolment of International students in Public universities by Country of Origin

The number of international students enrolled in public universities was 1,189 students representing 22.1% in the year 2017/2018. Majority of these students originated from African countries. These included South Sudan (8.50%) followed by Somalia (6.13%) and Nigeria (5.82%). Europe had few students enrolled with representation from Germany (0.15%) and Austria (0.15%). Asia had representation with students enrolled from Malaysia (0.10%) and China (0.10%). Other international student enrolments were from Canada (0.26%) as depicted in Figure 4.6.

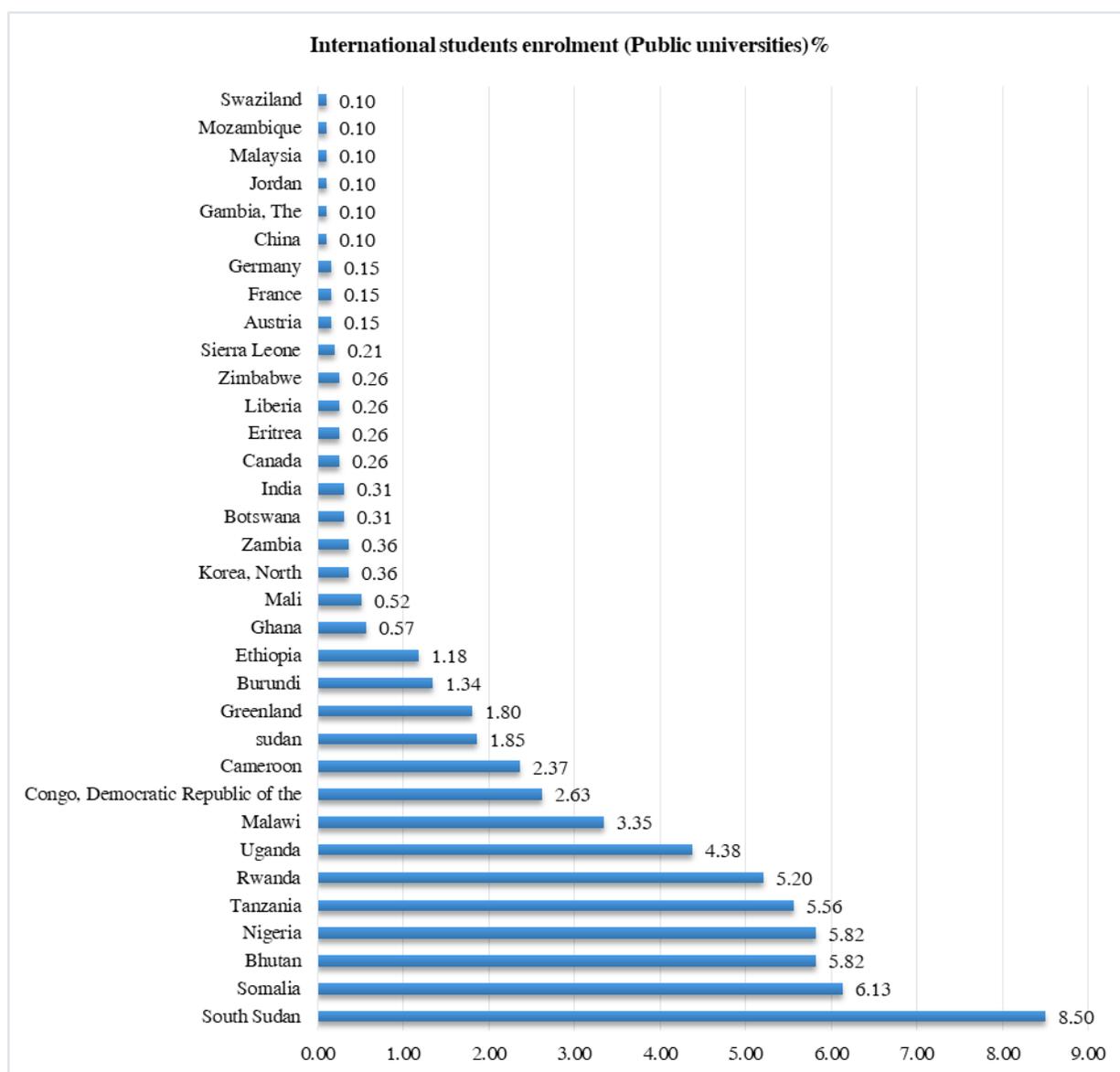


Figure 4.6: Enrolment of International Students in Public Universities

4.7.6 Enrolment of International Students in Private universities by Country of Origin

The number of international students enrolled in private universities increased from 4,126 in the year 2016/2017 to 4,184 students in the year 2017/2018, a marginal increase of 1.40%.

As reported by public universities, majority of the international students in private universities originated from African countries. These included Democratic Republic of the Congo (11.45%) with the highest number of international students enrolled followed by Tanzania (11.40%) and Uganda (9.11%).

Europe had few students enrolled with representation from Italy (0.14%) and the United Kingdom (0.22%). North America had representation with enrolments from USA (0.24%). Asia had representation with students enrolled from Philippines (0.36%). Other international student enrolments were from Greenland (0.24%). This is illustrated in Figure 4.6.

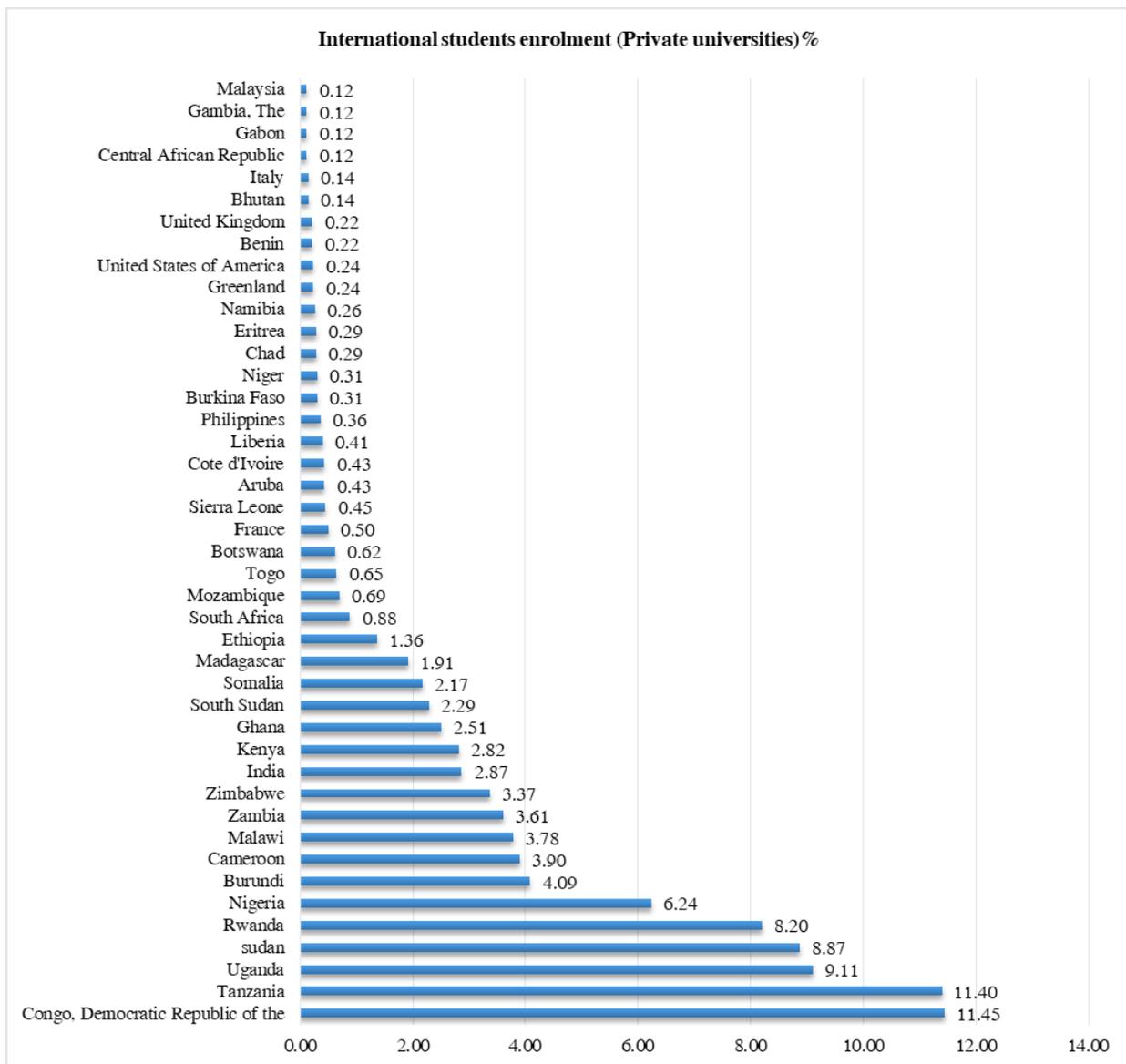


Figure 4.7: Enrolment of International Students in Private Universities

4.8 Enrolment of students with Disabilities

The reported number of students with disabilities in Public and Private Universities reduced by 10% from 881 in 2016 to 793 in 2017. Majority of these students were enrolled in Public Universities (681) representing 85.9% of the total enrolled, compared to Private Universities (112) representing 14.1% as shown in Table 4.7. Most of the disabled students had hearing impairment at 28.6%, followed by visual impairment at 26.5% and mental impairment at 24.8%.

Table 4.8

Enrolment of Students with Disabilities

Disability type	Public Universities		Private Universities		Grand Total	
	2016	2017	2016	2017	2016	2017
Sensory Impairment	1	108	2	39	3	147
Mental Impairment	7	164	0	33	7	197
Visual Impairment	287	193	6	17	293	210
Hearing Impairment	62	204	9	23	71	227
Learning Impairment	0	7	2	0	2	7
Physical Impairment	399	5	71	0	470	5
Others	30	0	5	0	35	0
Total	786	681	95	112	881	793

Enrolment of Students with Disabilities by Gender

The total number of students enrolled with disabilities in Public Universities was 681 with 62.1% male and 37.8% female. Most of the male students with disabilities had hearing and visual impairment at 28.6% each, followed by mental impairment at 25% while physical impairments were 0.7%.

Majority of female students with disabilities had hearing impairment with 32.2%, followed by visual impairment at 27.9% and mental impairment at 22.5%. The least enrolled were students with physical impairment representing 0.8% of the total.

Students with disabilities in private universities totaled 112 with male representing 17% and female 83%. Female students with sensory impairment were the highest at 34.4%, followed by mental impairment at 25.8% and the least were visual impairment at 16.1% of the total enrolled in the year.

Table 4.8***Enrolment of Student with Disability by Gender***

Category	Public Universities			Private Universities			Grand Total
	Male	Female	Total	Male	Female	Total	
Sensory Impairment	66	42	108	7	32	39	147
Mental Impairment	106	58	164	9	24	33	197
Visual Impairment	121	72	193	2	15	17	210
Hearing Impairment	121	83	204	1	22	23	227
Learning Impairment	6	1	7	0	0	0	7
Physical Impairment	3	2	5	0	0	0	5
Others	0	0	0	0	0	0	0
Grand Total	423	258	681	19	93	112	793

4.9 Summary and implications of findings

In the 2017/2018 academic year, there were 565,045 students at Universities in Kenya of which 26,225(4.6%) were enrolled for Diploma programmes, 454, 826(80.5%) were undergraduates and 83,544(14.88%) were postgraduates including Post Graduate Diploma. Of the postgraduates 61,687 were Masters students while 20,441 were enrolled into PhD programmes. The ratio of male to female students was 58% and 42% respectively. The ratio indicates fairly acceptable gender parity trend in university admissions in Kenya.

Private universities are yet to sufficiently align themselves with market needs, considering they do not offer programmes that offer skills required in big four agenda at the diploma, while percentage enrolment at post-graduate and Bachelor levels aligned to the big four was negligible (0.67%).

Africa provided the majority of the international students; majority from East African countries such as Tanzania (10.89%), Uganda (8.67%), Rwanda (8.26%) and Somalia (6.18%). Other African countries included Nigeria (6.96%). Western nations had very few students enrolled in

local universities; Spain (0.04%), Sweden (0.02%), United Kingdom (0.02%), Canada (0.13%) and Italy (0.13%).

The majority of the international students are enrolled at the Bachelors level (52.06%) with poor transition to graduate levels; Masters (38.12%) and PGD (1.29%). Western nations had very few students enrolled in local universities; USA (0.05%), Russia (0.05%) and United Kingdom (0.10%). The majority of the international students were also enrolled in private universities with 52.06%. There is need to improve awareness by other regions such as Asia , Europe and Latin American countries of the capacity and capabilities of local universities. There is also need to improve the retention and transition capabilities of local institutions. Relevant policies and mechanisms should be put in place to improve the transition of local universities from degree to graduate studies. There is need to undertake strategies such as niche marketing to improve the enrolment of female international students. There is need to improve the enrolment of international students in public universities.

Chapter Five

Academic Staff

5.1 Introduction

The role and responsibility of university academic staff is linked to the central function of universities of teaching, undertaking research and community outreach. Academic staff are responsible for generating and disseminating knowledge to students, peers and external partners. Academic staff teach to disseminate and impart basic or applied knowledge to students and assist students with the learning process, they conduct research with the aim of contributing to the knowledge base of an academic field and they are involved in community outreach programmes by collaboration with larger communities for mutually beneficial exchange of knowledge and resources.

This chapter presents information on the number, rank and qualification of academic staff in Kenyan Universities.

5.2 Academic Staff in Public and Private Universities

This section presents the aggregate number of academic staff disaggregated by gender. It sums up all staff from the level of professor, associate professor, senior lecturer, lecturer, tutorial fellow and graduate assistant. Table 5.1 indicates the change in academic staff numbers between the years 2016 and 2017. The number of staff in both public and private universities increased by 11% and 3% respectively.

Table 5.1

Academic Staff in Public and Private Universities

Category	2016			2017			% change
	Male	Female	Total	Male	Female	Total	
Public Universities	9256	4398	13654	10411	4775	15186	11%
Private Universities	3156	1921	5077	3199	2023	5222	3%
Total	12412	6319	18731	13610	6798	20408	9%

Gender distribution among academic staff indicates that female academic staff represented 33% of the total academic staff in universities. The representation of female staff meets the required constitutional threshold implying that university subsector is adhering to the constitutional requirement in their appointments of academic staff as illustrated in Figure 5.1.

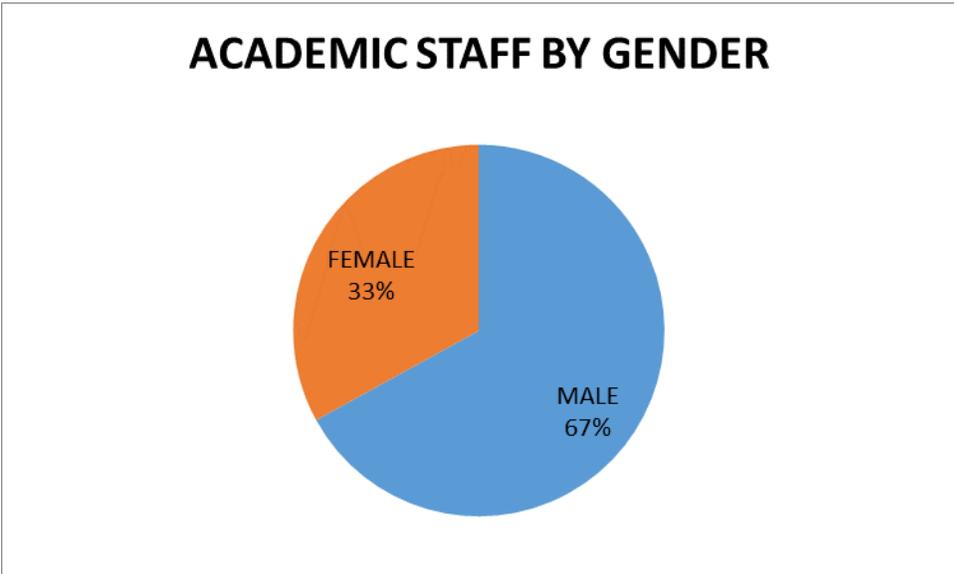


Figure 5.1: Percentage of University academic staff by Gender

5.3 Academic staff by Gender in Public and Private Universities

Male academic staff were more than female in both public and private universities. Public universities had a higher male academic staff percentage at 76% while in private universities, male academic staff representation was 70%. In public universities female academic staff representation was 24% while in private universities they were 30%. Noteworthy is that private universities had a higher representation of female staff than public universities as depicted in Figure 5.2.

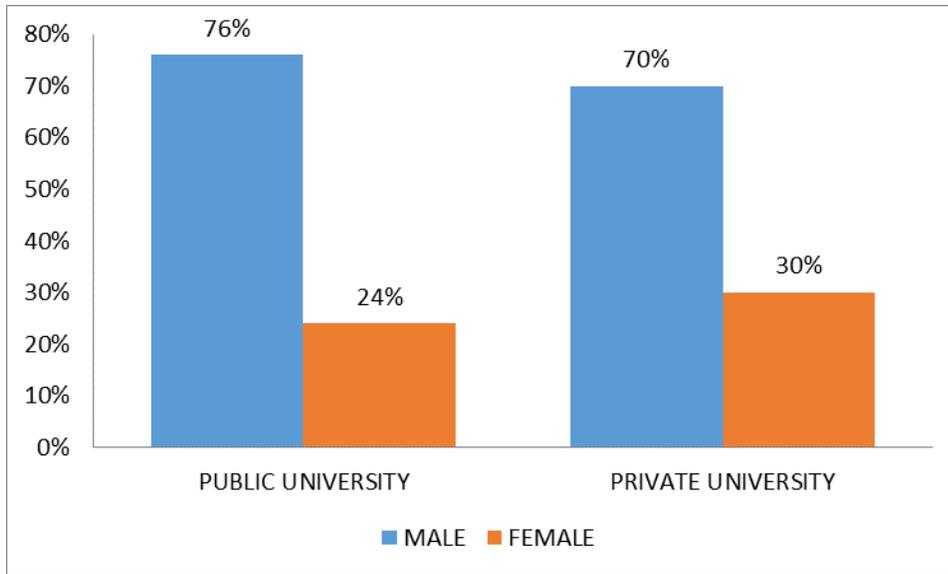


Figure 5.2: Academic staff by Gender in public and private Universities

5.3.1 Academic staff by Gender and University Category

Universities in Kenya are categorized as chartered university, university constituent colleges and those operating under letters of interim authority. Public and private chartered universities accounted for 93.2% of all academic staff. The number of academic staff across all the universities categories shows a higher male representation than female. Table 5.2 shows the number of academic staff and their gender representation among the different categories of universities.

Table 5.2

Academic Staff by Gender in the Different University Categories

Category	Male	Female	Total
Public Chartered Universities	10203	4689	14892
Public Universities Constituent Colleges	208	86	294
Private Chartered Universities	2493	1635	4128
Private Universities Constituent Colleges	219	92	311
Private Universities with LIA	487	296	783
Total	13610	6798	20408

5.4 Academic Staff by Qualification

Qualified academic staff are an essential component of quality education. The representation of staff with higher levels of qualification at above 80% is an indicator of quality human resource capacity for teaching and research. The Universities Standards and Guidelines, 2014 specify that “the minimum academic qualifications of academic staff for a given level of academic programme shall be at least one level above what he or she is supposed to teach”. This section provides information on the qualification of academic staff in universities. Figure 5.3 indicates that 55% of academic staff had Masters qualification. The percentage of academic staff with PhD qualification was 36% while 9% of the staff had Bachelor’s degrees. Universities should strive to develop capacity of their staff through incentives such as scholarships and reduced workloads.

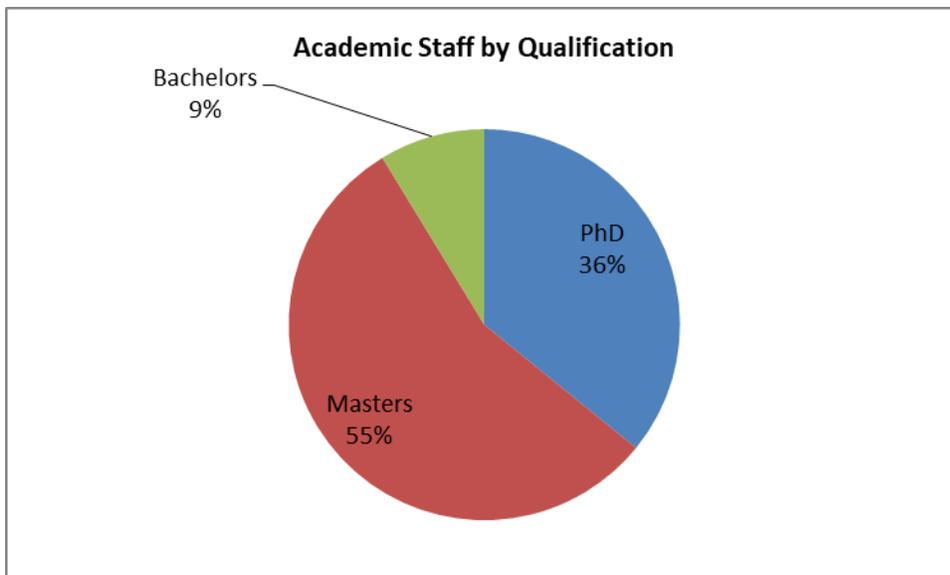


Figure 5.3: Academic Staff by Qualification

5.4.1 Comparison of Academic staff by Qualification between 2015, 2016 and 2017

In general, the number of academic staff by qualification increased in all levels. Comparison between the year 2016 and 2017 shows an increase of 3017 equivalent to 17.17% in 2017. There was an increase in academic staff across all qualification levels. The highest percentage increase in academic staff was at Bachelors qualification, who increased by 24.03% from 1469 in 2016 to 1822 in 2017. Academic staff with Master’s qualification increased by 17.15% while those with PhDs increased by 15.83%.

There was a steady increase in staff numbers with PhD and Masters Qualifications between 2015 to 2017 in both Public and Private Universities. For staff with Bachelors qualification, a slight drop was witnessed from 2015 to 2016 then an increase in Public Chartered Universities while the Private Universities saw an increase between 2015 and 2016 and a slight drop in 2017. This is illustrated in Table 5.3.

Table 5.3

Number of Academic staff by their qualification - 2015, 2016 and 2017

CATEGORY	PhD				Masters				Bachelors			
	2015	2016	2017	%	2015	2016	2017	%	2015	2016	2017	%
Public Chartered Universities	4348	4713	5590	19	2953	6747	8371	24	1104	107	1372	36
Private Chartered Universities	1256	1409	1501	7	2740	3134	3205	2	261	462	450	-3
TOTAL	5604	6122	7091	16	5693	9881	11576	17	1365	569	1822	24

5.5 Academic Staff by Rank

This section provides information on academic staff based on their ranks as stipulated in the Universities Standards and Guidelines, 2014 and the Harmonized Criteria for Appointment and Promotion of Academic Staff, 2014. These two policy documents state the minimum criteria for appointment and promotion of academic staff from the lowest rank of graduate assistant to the highest rank of Professor. The information provided in Figure 5.4 shows the share of academic staff in each rank.

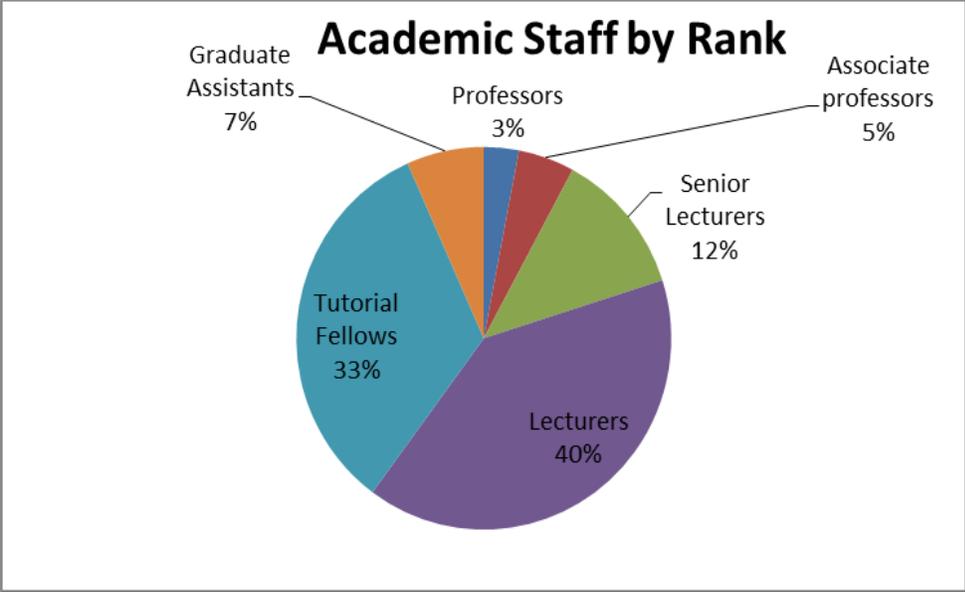


Figure 5.4: Academic Staff by Rank

From Figure 5.4, the proportion of academic staff at the rank of Professor dropped by 1%; from 4% in 2016 to 3% in 2017 which is the lowest while the share of academic staff at the rank of Lecturer was the highest at 40%. The combined share of academic staff at senior ranks from Senior Lecturer to Professor was at 20% while the other three ranks had a combined share of 80%.

5.5.1 Academic Staff by Rank in Public and Private Universities

Table 5.4 indicates the distribution of academic staff between public and private universities by rank. Majority of the academic staff (15186 representing 74.41%), were in public universities as compared to 5222 in private universities. Based on the ranks of academic staff, the data shows that both public and private universities had the highest number of academic staff at the rank of Lecturer and the least at the rank of Professor, though across all the ranks public universities academic staff were more than private universities academic staff.

Table 5.4

Academic Staff by Rank

	Professors	Associate Professors	Senior Lecturers	Lecturers	Tutorial Fellows	Graduate Assistant	Total
Public Chartered Universities	487	781	1842	5988	5174	914	15186
Private Chartered Universities	127	209	654	2181	1606	445	5222

TOTAL	614	990	2496	8169	6780	1359	20408
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5.5.2 Academic Staff by Rank and University Category

Table 5.5 shows the summary of academic staff by university category. Among the university categories, Public chartered Universities, private chartered universities and private constituent universities had the highest proportion of Lecturers at 39.48%, 45.16% and 41.16% respectively while the public constituent colleges and universities with LIA had majority of their academic staff at the rank of Tutorial Fellow. The rank of Professor and Associate Professor had the least proportion of academic staff across all the university categories at 6.43% and below.

Table 5.5

Academic Staff by Rank and University Category

Category	Professors	Associate Professors	Senior Lecturers	Lecturers	Tutorial Fellows	Graduate Assistant	Total
Public Chartered Universities	482	770	1830	5879	5052	879	14892
	3.24%	5.17%	12.29%	39.48%	33.92%	5.90%	100%
Public University Constituent Colleges	5	11	12	109	122	35	294
	1.70%	3.74%	4.08%	37.07%	41.50%	11.90%	100%
Private Chartered Universities	85	167	496	1864	239	277	4128
	2.06%	4.05%	12.02%	45.16%	30.01%	6.71%	100%
Private University Constituent Colleges	20	20	70	128	43	30	311
	6.43%	6.43%	22.51	41.16%	13.83%	9.65%	100%
Universities with Letters of Interim Authority	22	22	88	189	324	138	783
	2.81%	2.81%	11.24%	24.14%	41.38%	17.62%	100%
Total	614	990	2496	8169	6780	1359	20408

5.5.3 Comparison of academic staff by rank between the years 2016 and 2017

Figure 5.5 shows that Public university academic staff at the rank of Professor declined by 6.7%; from 1359 to 1268 while in private universities, they increased by 8%; from 330 to 356. The

ranks of Professor and Associate Professor were merged in the analysis for both the 2016 and 2017 data.

In public universities academic staff at the rank of Senior Lecturer increased by 345 from 1497 to 1842 while in private universities they declined by 67 from 721 to 654. Academic staff at the rank of Lecturer increased significantly by 1709 from 4297 to 5988 in public universities and also private universities registered an increase by 182 from 1989 to 2181.

The rank of Tutorial Fellow had the majority of academic staff in both public and private witnessing an increase of 2523 in public and 1271 in private universities respectively.

There was a decrease in number of academic staff in the rank of Graduate Assistant. In public universities academic staff in this rank declined by 2568 from 3472 to 904 and in private universities they decreased by 927 from 1372 to 445.

The situation in the rank of graduate assistant and tutorial fellows rank had quite significant changes in staffing numbers. Also, the numbers are interchanging in that, in 2015 and 2016 comparison; the tutorial fellows had a decrease in number of staff while graduate assistants had an increase which opposes 2016 and 2017 comparison. The differences of their increase and decrease are insignificant.

To understand the reason for the significant change in numbers requires additional information from universities. But some of the reasons might have been attributed to the filling of information on part time staff in the data tool where one of the identified challenges was on how to rank some of their part time staff and also the phasing out of the rank of Assistant Lecturer by the Harmonized Criteria and Guidelines for Appointments and Promotion of Academic Staff, 2014 and also differentiating one from the programme taking.

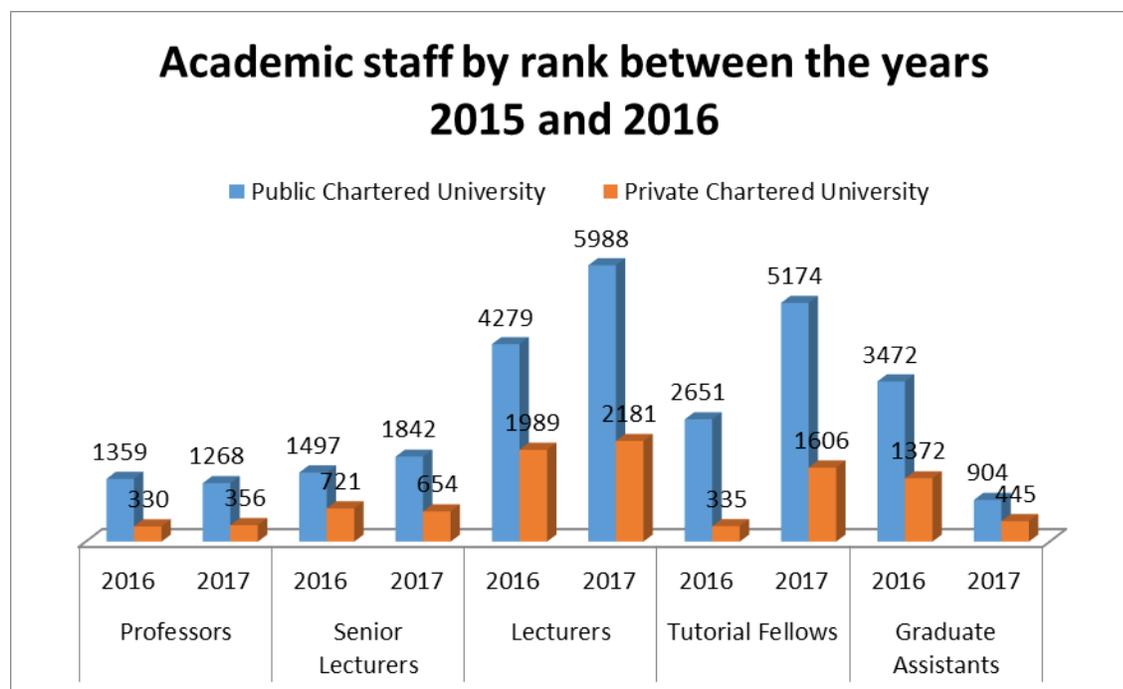


Figure 5.5: Academic staff by rank between the years 2016 and 2017

5.5.4 Academic Staff by Rank and Programme Domain

The Universities Standards and Guidelines, 2014 stipulate that university academic programmes shall be supported by adequate full-time staff holding requisite academic qualifications. This section provides information on the number of academic staff per academic programme domain. The information on academic staff presented here is inclusive of part time academic staff. A breakdown of academic staff in each programme domain by their ranks is presented in Table 5.6.

Table 5.6

Academic Staff by Rank and Programme

Cluster	Professors	Associate Professors	Senior Lecturers	Lecturers	Tutorial Fellows	Graduate Assistant	Total
Education	57	98	316	1205	531	61	2268
	2.51%	4.32%	13.93%	53.13%	23.41%	2.70%	100%
Arts and Humanities	104	167	396	1208	588	107	2570
	4.05%	6.50%	15.41%	47.00%	22.88%	4.16%	100%
Social Science, Journalism and Information	49	103	244	826	758	193	2173
	2.25%	4.74%	11.24%	38.01%	34.88%	8.88%	100%
Business and Administration	38	87	431	1367	1658	260	3841
	0.99%	2.27%	11.22%	35.59%	43.17%	6.77%	100%
Natural Science, Mathematics and Statistics	108	166	353	1137	1040	95	2899
	3.73%	5.73%	12.18%	39.22%	35.87%	3.28%	100%
Information and Communication Technology	19	35	114	484	653	132	1437
	1.32%	2.44%	7.93%	33.68%	45.44%	9.19%	100%

Engineering, Manufacturing and Construction	41	73	149	476	508	229	1476
	2.78%	4.95%	10.09%	32.25%	34.42%	15.51%	100%
Agriculture, Forestry, Fisheries and Veterinary	97	142	168	584	449	72	1512
	6.42%	9.39%	11.11%	38.62%	29.70%	4.76%	100%
Health and Welfare	97	115	298	826	550	147	2033
	4.77%	5.66%	14.66%	40.63%	27.05%	7.23%	100%
Services	4	4	27	56	45	63	199
	2.01%	2.01%	13.57%	28.14%	22.61%	31.66%	100%
Grand Total	614	990	2496	8169	6780	1359	20408
Proportion	3.01%	4.85%	12.23%	40.03%	33.22%	6.66%	100.00%

In the analysis, Business, Administration and Law, Information and Communication Technology and Engineering, Manufacturing and Construction programme domains had the highest proportion of the academic staff at the rank of Tutorial Fellow. Services domain had the highest proportion of the academic staff at the rank of Graduate Assistant with 31.66%. Agriculture, Forestry, Fisheries and Veterinary programme domain had the largest academic proportion at 6.42% while Business, Administration and Law had the least proportion at 0.99% in the rank of Professor. Generally, academic staff at the rank of Lecturer had the highest proportion at 40.03%.

5.5.5 Academic staff by Rank and Age

This section provides information on the age of academic staff in public and private universities. Table 5.7 illustrates the analysis of academic staff by age and rank in Public and Private Universities.

Table 5.7

Academic Staff by Age category and Rank

Age category	Professors	Associate Professors	Senior Lecturers	Lecturers	Tutorial Fellows	Graduate Assistants
20-30years	0	4	8	181	477	469
31-40years	1	12	240	2199	2921	519
41-50years	26	195	865	3343	2153	214
51-60years	236	495	881	1724	737	94
>60years	388	342	399	607	141	19
Total	651	1048	2393	8054	6429	1315

**Analysis excludes data from 2 universities which did not provide data on their academic staff by age*

The number of professors above the age of 60 years was highest compared to the other age categories. The numbers of professors were 0 and 1 at the age categories of 20 – 30 years and 30 -40 years respectively.

The number of associate professors at the age category of 51-60 years was the highest while the least number of associate professors was at the age category of 20-30 years. Most of the senior lectures were aged between 41 -50years and 51-60 years. There were more lecturers at the age category of 41-50 years. The number of senior lecturers and lectures at the age of 41-50 years and 51- 60 years are expected to increase due to the high number of lecturers and graduate assistants.

Majority of tutorial fellows and graduate assistants were in the age category of 31-40. The highest number of staff over the age of age of 60 were lectures and senior lecturers. The professor rank had the fewest number of the teaching while the lecturer rank had the highest number of the teaching staff.

Summary of Findings

The analysis indicate that the most of university academic staff are Master's degree holders. The proportion of academic staff with PhD qualification was 36%. The data also reveals that majority of the academic staff were senior lecturers while professors were the least. The lower ranks of lecturer, tutorial fellow and graduate assistant, accounted for 79% of all academic staff in public and private universities.

Most of the academic staff were aged between 41-50 years and 51- 60 years with many of the professors and associate professors aged above 51 years. This point to a shortage of professors in the future and an implication of a declining academic leadership provided by professors and other senior academic staff which has an adverse effect on the quality of training and research. It also poses a challenge in having adequate staff to supervise doctorate students, or get involved in research, further aggravating staff capacity growth at PhD levels. Universities should prioritize training of staff to fill up senior positions and replace aging faculty in order to maintain quality training and research.

The ICT domain has about 55% of the academic staff at the Graduate assistant and tutorial fellow levels. There is need to appoint higher caliber staff in this domain, if Kenya is to realize technological transformation in this highly competitive sector, to sustain the status of Kenya being the regional technological hub.

Chapter Six

University Graduations

6.1 Introduction

This chapter includes analysis and summaries on data collected from 61 Universities categorized as follows; 30 Public chartered universities 18 Private chartered Universities, 9 universities with letters of interim authority and 4 private constituent colleges. The graduations were hinged on four thematic areas that included, Gender, level of award constituting Bachelors, PGD, masters and PhD, grade of award composed of non-graded awards, first class honors, second upper class honors second lower class honors and passes. Domain of award included ten of the following; Education, Arts and humanities, Social Sciences Journalism and Information, Business Administration and Law, Natural Sciences, Mathematics and Statistics, Information and Communication Technology, Engineering, Manufacturing and Construction, Agriculture, Forestry, Fisheries and Veterinary, Health and Welfare and Services.

6.2 Total graduations in year 2017 as compared to year 2016

The total graduations in 2017 for both Public and Private Universities dropped by 4530 (5.1%); from 88773 in 2016 to 84243. Public universities accounted for 73.5% (61873) of the total graduations while Private universities produced 26.5% (22370) respectively. In comparison with 2016, public universities reported a reduction of 4% (2578) while private recorded a decline of 8% (1952). Figure 6.1 shows this information.

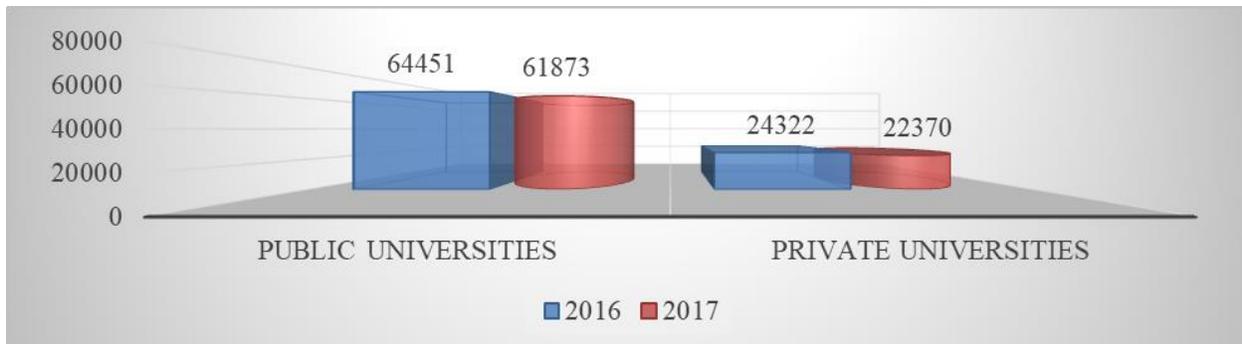


Figure 6.1. Total graduations in 2016 and 2017

6.3 Graduations in Public and Private Universities by Gender

In terms of gender, there were 45885 male graduates against 36766 females. Male graduates exceeded females by 9119 (24.8%) compared to a difference of 8337 (20.7%) in 2016. In

between the 2 years, males graduates reduced by 2670 (5.5%) while females saw a wider gap in reduction of 3452(8.6%) as depicted in Figure 6.2.

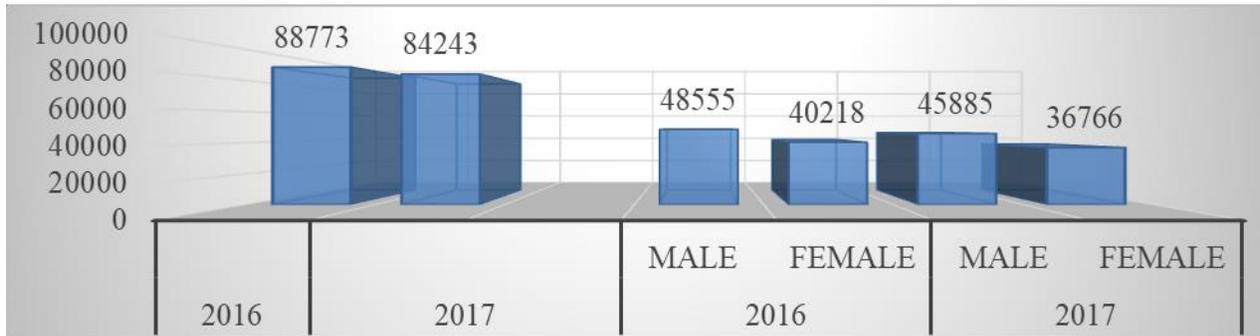


Figure 6.2. Graduations in Public and Private Universities

Some 1592 graduations were not distributed in terms of gender and therefore were left out in the analysis for public universities reducing total graduations from 61873 reported in Figure 6.3 to remain at 60281. In this case therefore males constituted 57.7% while female counterparts stood at 42.3%. Female graduations reduced by a higher margin of 8.2% from 2016 to 2017 compared to 5.2% of the male counterparts. During the year, male graduations in private Universities demonstrated lower margin compared to that of females at 49.6% against 50.4% a similar observation in previous year 2016. Female graduations in public universities also reduced by a higher margin (9.5%) compared to that of males at 6.4% as shown in Figure 6.4.



Figure 6.4 Graduations in Public and Private Universities by Gender

6.4 Graduations by University Category

During the year 2017, Public Chartered Universities accounted for 73.4% of reported total graduations compared to 72.6% in 2016. However, there was a decline of 4% (2,570) in the number of graduates from 64443 reported in 2016 to 61873 graduates reported in 2017. There was a marginal increase of 0.4 % in the number of students who graduated from Private Chartered Universities in 2017 compared to 2016. However in absolute terms, there was a decrease of 2,295 (10%) from 2016. Private Constituent Colleges and Universities with Letter of Interim Authority had a combined share of 0.2% of total graduations in 2017 compared to 0.4% in 2016. The number of graduates between the years 2016 and 2017 in Private Constituent Colleges reduced from 517 to 391 representing a 24.4% (126) decline. Universities with Letter of Interim Authority were the only category that realized a positive growth of 61.9% (469) from 758 graduates in 2016 to 1227 in 2017 as illustrated in Figure 6.5.

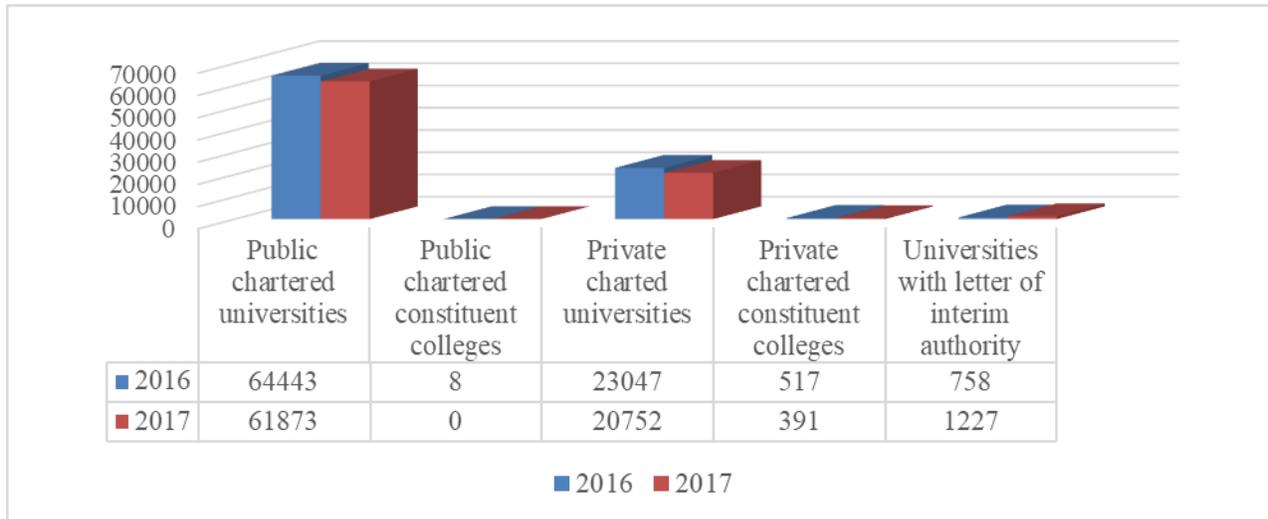


Figure 6.5 Graduations by University Category

6.4.1 Graduations by University Category and Gender

In 2017 Public Chartered Universities registered 34,798 (57.7%) male and 25,483 (42.3%) female graduates. The number of male graduates reduced by 5.2% (1,901) from 36,699 in 2016 to 34,798 in 2017 while the number of female graduates dropped by a higher margin of 8.1% (2,261) from 27,744 to 25,483. In 2016, Public Constituent Colleges reported only 7 male and

one female graduates during the year and nil in 2017. Private Chartered Universities had 49.7% (10,312) male and 50.3% (10,440) female graduates in 2017. There was a decline in the number of students who graduated in 2017 compared with 2016. Male graduates recorded a decline of 8.3% (930) from 11,242 to 10,312 in 2017 while female graduates declined by 11.6% (1,365) from 11,805 to 10440 in 2017. Private Constituent Colleges similarly registered a downward trend while Universities with letter of interim authority recorded an upward trend with 58.4% being female graduates while 45.2% were males in 2017. This is illustrated in Table 6.1.

Table 6.1

Graduations by University Category and Gender

University Category	YEAR					
	2016			2017		
	Male	Female	Total	Male	Female	Total
Public Chartered Universities	36699	27744	64443	34798	25483	60281
Public Constituent Colleges	7	1	8	0	0	0
Private Chartered Universities	11242	11805	23047	10312	10440	20752
Private Constituent Colleges	320	197	517	265	126	391
Universities with Letters of Interim Authority	287	471	758	510	717	1227

6.5 Graduations by Award in Public and Private Universities

As shown in Figure 6.6, Bachelor's awards recorded 89% of the total graduations in 2017 followed by Masters at 10% while PhD and PGD accounted for a paltry 1%. Graduates at Bachelors level however dropped by 3,737 (4.8%) PGD by 1,802 (89%) and Masters similarly recorded a decline of 882 (10%). Despite the small number of graduates at PhD level, there was a marginal improvement from 700 in 2016 to 703 in 2017.

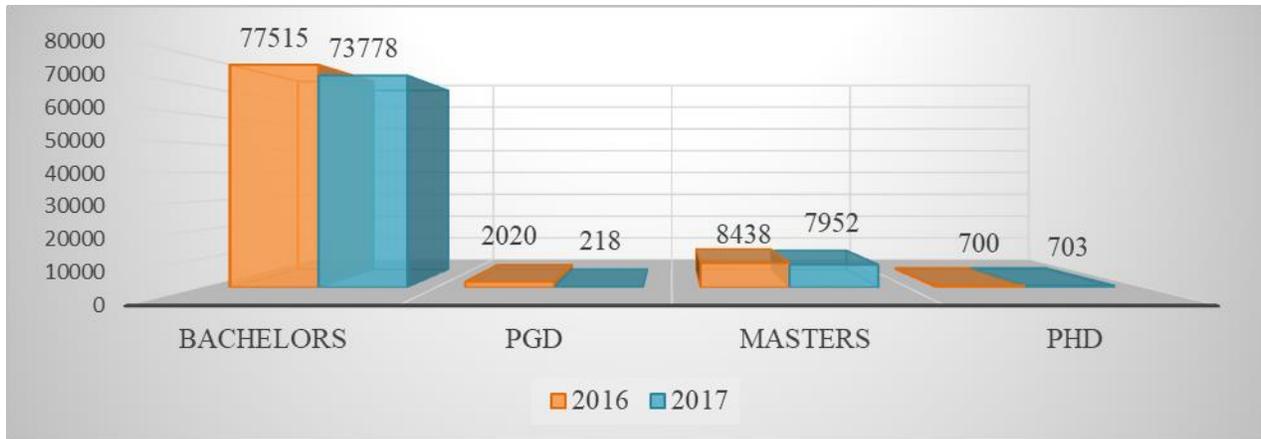


Figure 6.6 Graduations in Public and Private Universities by Degree of Award

6.5.1 Graduation by award and Gender in Public Chartered Universities

Bachelor’s awards in Public Chartered Universities recorded a decline of 1,905 (33.8%) from 56,293 recorded in 2016 to 54,388 in 2017. Male graduates were 31,382 (58%) while female graduates were 23,006 (42%). In comparison with 2016, both male and female graduates recorded a decrease of 1.4% and 6.0% respectively. PGD graduates were 66 a significant reduction from 1,523 reported in 2016. Masters awards also saw a reduction from 6,151 in 2016 to 5,305 in 2017. Male graduates were 3,044 (57%) while female were 2,261(43%). The proportion of the decline in the award for Master’s degree between the two years by gender was 16% for male and 11% for female graduates as provided in Table 6.2.

Table 6.2

Graduation by award and Gender in Public Chartered Universities

Award	2016			2017		
	Male	Female	Total	Male	Female	Total
Bachelors	31810	24483	56293	31382	23006	54388
PGD	1039	486	1525	39	27	66
Masters	3602	2549	6151	3044	2261	5305
PhD	355	227	582	333	189	522

6.5.2 Graduation by award and Gender in Private Chartered Universities

Bachelors awards reduced from 20,441 recorded in 2016 to 17,909 in 2017. PGD awards similarly recorded a decline to 152 in 2017 from 340 reported in 2016. Masters awards recorded

a moderate increase of 362 from 2,148 in 2016 to 2,510 in 2017 while PhD awards similarly had a marginal increase of 61. Female graduates at Bachelor’s level were significantly higher than their male counterparts. Similarly, at PGD and Masters level, the number of female graduates were more than males. At PhD level, male graduates were twice the number of female graduates as provided in Table 6.3.

Table 6.3

Graduation by award and Gender in Private Chartered Universities

Award	2016			2017		
	Male	Female	Total	Male	Female	Total
Bachelors	9835	10606	20441	8841	9068	17909
PGD	196	144	340	75	77	152
Masters	1160	988	2148	1275	1235	2510
PhD	51	69	120	121	60	181

6.5.3 Graduation by award and Gender in Private Constituent Colleges

Bachelors’ awards recorded a significant decline of 257 from 422 in 2016 to 265 in 2017 while Masters awards increased from 95 to 126 in 2017. The number of male graduates at Bachelors level reduced by 34, while female graduates reduced drastically from 162 to 39 in 2017. There was however a significant increase in the number of male and female graduates at Masters’ level with an increase of 41 for males and 10 for females. This information is provided in Table 6.4.

Table 6.4

Graduation by award and Gender in Private Constituent Colleges

Award	2016			2017		
	Male	Female	Total	Male	Female	Total
Bachelors	260	162	422	226	39	265
PGD	0	0	0	0	0	0
Masters	60	35	95	101	25	126
PhD	0	0	0	0	0	0

6.5.4 Graduation by Award and Gender in Universities with Letter of Interim Authority
 Bachelors' awards in Universities with LIA reduced from 559 in 2016 to 510 in 2017 while there were no PGD awards in the year under review. Male graduates at Bachelors' level in 2016 rose by 242 while the number of female graduates in the same level declined remarkably by 291. Masters' degree awards increased significantly from 44 in 2016 to 717 in 2017. A sharp rise in the number of male Masters' degree graduates from 22 in 2016 to 686 in 2017 was observed as provided in Table 6.5.

Table 6.5
Graduation by award and Gender in Universities with Letter of Interim Authority

Award	2016			2017		
	Male	Female	Total	Male	Female	Total
Bachelors	226	333	559	468	42	510
PGD	36	116	152	0	0	0
Masters	22	22	44	686	31	717
PhD	0	0	0	0	0	0

6.6 Graduations in Public and Private Universities by Domain and Gender
 Business, Administration and Law registered the highest number of graduates at 26.9% in Public and 38.0% in Private Universities. Education followed with 24.7% and 28.1%, Arts and Humanities 8.9% and 6.0%, Social Sciences, Journalism and Information 6.3% and 10.8% respectively. Natural Sciences, Mathematics and Statistics, Agriculture, Forestry, Fisheries and Veterinary, and Engineering, Manufacturing and Construction accounted for 11.8%, 7.5% and 5.9% respectively in Public Universities while these domains performed dismally in Private Universities at 1.4%, 0.2% and 0.4% respectively. Health and Welfare, Information and Communication Technology had more graduates from Private Universities at 9% and 5.7% compared with Public Universities that produced 4.3% and 3.2% in the respective disciplines. Table 6.6 provides this information.

Table 6.6
Graduations by University Category, Domain and Gender

Domain of award	Public Universities				Private Universities			
	Gender		Total	%	Gender		Total	%
	Male	Female			Male	Female		
Education	7797	7100	14897	24.7%	3072	3208	6280	28.1%
Arts and Humanities	2936	2436	5372	8.9%	869	474	1343	6.0%
Social Sciences, Journalism and Information	2267	1530	3797	6.3%	1133	1291	2424	10.8%
Business, Administration and Law	8809	7396	16205	26.9%	3936	4562	8498	38.0%
Natural Sciences, Mathematics and Statistics	4526	2597	7123	11.8%	142	171	313	1.4%
Information and Communication Technology	1423	516	1939	3.2%	876	399	1275	5.7%
Engineering, Manufacturing and Construction	2805	737	3542	5.9%	28	21	49	0.2%
Agriculture, Forestry, Fisheries and Veterinary	2690	1818	4508	7.5%	60	31	91	0.4%
Health and Welfare	1384	1233	2617	4.3%	955	1066	2021	9.0%
Services	161	120	281	0.5%	16	60	76	0.3%
Total	34798	25483	60281	100.0	11087	11283	22370	100.0%

6.6.1 Graduation by Domain of award in Public Chartered Universities

The top three domains with the highest number of graduates at Bachelors level were Education (26%) followed by Business, Administration and Law (25%) and Natural Sciences, Mathematics and Statistics (12%). Services domain had the least number of graduates with 0.5%. At Masters level Business, Administration and Law had the highest number of graduates (45%) followed by arts and humanities with 20%. Business, Administration and Law had the highest number of PhD awards (33%) followed by Education (19%) and Natural Sciences, Mathematics and Statistics at 13% while the remaining 35% was distributed amongst the rest of the domains.

Table 6.7

Graduation by Domain of award and level in all Universities

Domain of award	Graduation award				Total
	Bachelor	PGD	Master	PhD	
Education	14180	65	555	97	14897
Arts and Humanities	4288	0	1036	48	5372
Social Sciences, Journalism and information	3527	0	236	34	3797
Business, Administration and Law	13655	0	2376	174	16205

Natural Sciences, Mathematics and Statistics	6714	0	339	70	7123
Information and Communication Technology	1873	0	59	7	1939
Engineering, Manufacturing and Construction	3372	0	155	15	3542
Agriculture, Forestry, Fisheries and Veterinary	4274	1	194	39	4508
Health and Welfare	2224	0	355	38	2617
Services	281	0	0	0	281
Total	54388	66	5305	522	60281

6.6.2 Graduation by Domain of award in Private Chartered Universities

Business, Administration and Law accounted for the highest Bachelors' awards at 37% while Education followed closely at 30%. At PGD level, Education recorded the highest number of graduates (87%) while the remaining percentage was distributed between Arts/ Humanities and Social Sciences, Journalism and Information. At Masters' level, Business, Administration and Law had the highest number of graduates (49%) while Social Sciences, Journalism & Information and Arts & Humanities reported 12% each. Arts and Humanities topped at PhD level with 44% followed by Education (26%) and Business, Administration & Law 20%. The rest of the domains shared the remaining 10% as shown in Table 6.8.

Table 6.8

Graduation by Domain of award and level in Private Chartered Universities

Domain of Award	Graduation award				Total
	Bachelors	PGD	Masters	PhD	
Education	5897	134	202	47	6280
Arts and Humanities	947	5	312	79	1343
Social Sciences, Journalism and Information	2087	13	314	10	2424
Business, Administration and Law	7167	0	1295	36	8498
Natural Sciences, Mathematics and Statistics	190	0	118	5	313
Information and Communication Technology	1153	0	122	0	1275
Engineering, Manufacturing and Construction	49	0	0	0	49
Agriculture, Forestry, Fisheries and Veterinary	74	0	17	0	91
Health and Welfare	1750	0	267	4	2021
Services	76	0	0	0	76
Total	19390	152	2647	181	22370

6.6.3 Graduation by Domain of Award in Universities with Letter of Interim Authority

In 2017, Bachelors' level recorded the highest number of awards (94%) while Masters had 6%. However, there were only two domains with graduates at Masters' level. Business, Administration and Law were 74% while Health and Welfare were 26%. Business, Administration and Law had the highest number of graduates at Bachelors' level with 67%, followed by Education and Arts & Humanities having 12% and 11% respectively as shown in Table 6.9.

Table 6.9

Graduation by Domain of Award in Universities with Letter of Interim Authority

Domain of Award	Graduation Awards		Total
	Bachelors	Masters	
Education	141	0	141
Arts and Humanities	126	0	126
Social Sciences, Journalism and Information	16	0	16
Business, Administration and Law	778	54	832
Natural Sciences, Mathematics and Statistics	7	0	7
Information and Communication Technology	54	0	54
Health and Welfare	32	19	51
Total	1154	73	1227

6.7.1 Graduations by Domain and Grade of Award in Public Chartered Universities

Second Upper class accounted for majority of awards in 2017 with 51% while Second Lower class were 33%. Non-graded came a distant third at 12%, First Class honors awards were 3% while pass degrees were 1%. Within Second Upper class, Education domain registered the highest number of awards at 29% followed closely by Business, Administration and Law accounting for 27%. Education and Business, Administration & Law accounted for 50% against the rest of the domains. The same trend was witnessed in the rest of the grades as illustrated in Table 6.10.

Table 6.10

Graduations by Domain and Grade of Award in Public Chartered Universities

Domain of Award	Grade of award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Education	717	317	8765	5020	78	14897
Arts and humanities	1084	150	2775	1285	78	5372
Social sciences, Journalism and information	270	274	1973	1229	51	3797
Business, administration and law	2550	470	8361	4667	157	16205
Natural sciences, mathematics and statistics	440	267	3284	2889	243	7123
Information and Communication Technology	66	40	907	882	44	1939
Engineering, manufacturing and construction	170	165	1414	1656	137	3542
Agriculture, forestry, fisheries and veterinary	339	154	2271	1676	68	4508
Health and welfare	1798	45	519	223	32	2617
Services	0	17	210	53	1	281
Total	7434	1899	30479	19580	889	60281

6.7.2 Graduation by Domain and Grade of Award in Private Chartered Universities

Second Upper had the highest awards with 45%, followed by Second Lower (30%) Non-graded (20%), First Class (5%) and Pass 5%. Between domain and grade of awards, Education and Business, Administration Class accounted for 77% of Second Upper Class degrees. Within Second Lower, the same scenario was observed with the two domains recording the highest at 68%. For the rest of the awards, Business, Administration and Law had the majority of the graduates. This is shown in Table 6.11.

Table 6.11

Graduations by Domain and grade of Award in Private Chartered Universities

Domain of Award	Grade of award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Education	382	97	3944	1621	39	6083
Arts and humanities	379	77	383	262	16	1117
Social sciences, Journalism and information	291	99	889	899	55	2233
Business, administration and law	1277	365	3219	2605	186	7652
Natural sciences, mathematics and statistics	123	26	94	57	6	306
Information and Communication Technology	122	63	461	525	50	1221

Engineering, manufacturing and construction	0	2	19	21	7	49
Agriculture, forestry, fisheries and veterinary	20	5	38	18	10	91
Health and welfare	1461	21	231	190	21	1924
Services	0	8	25	41	2	76
Total	4055	763	9303	6239	392	20752

6.7.3 Graduations by Domain and grade of Award in Private Universities Constituent Colleges

The category had only five domains of awards. Second Upper Class led with 45% followed by Non-graded with 26%. Social Sciences, Journalism and Information cluster was highest within Second Upper Class Honors at 49%. Education and Arts & Humanities registered 21% each in the same grade of award. The same domain domineered within Non-graded award with 46%. Arts and humanities had 56% within second lower class honors. Table 6.12 provides this information.

Table 6.12

Graduations by Domain and grade of Award in Private Universities Constituent Colleges

Domain of Award	Grade of award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Education	1	14	37	0	4	56
Arts and humanities	17	7	37	38	1	100
Social sciences, Journalism and information	46	17	85	27	0	175
Business, administration and law	0	2	9	3	0	14
Health and welfare	37	2	7	0	0	46
Total	101	42	175	68	5	391

6.7.4 Graduations by Domain and grade of Award in Private Universities with Letter of Interim Authority

In this category there were seven domains of awards all at Bachelors level. The Second Upper and Second Lower Class Honors recorded 63% and 21% respectively. First Class Honors were 9%, Non-graded 6% and Passes 1%. Between domain and grade of award Business, Administration and Law accounted for 67% within Second Upper Class Honors followed by Education with 16%, Arts and Humanities with 11% while 6% was shared among the rest of the domains as provided in Table 6.13.

Table 6.13

Graduations by Domain and grade of Award in Private Universities with Letter of Interim Authority

Domain of Award	Grade of award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Education	0	6	126	9	0	141
Arts and humanities	0	24	83	19	0	126
Social sciences, Journalism and information	0	1	13	1	1	16
Business, administration and law	54	41	520	209	8	832
Natural sciences, mathematics and statistics	0	0	4	3	0	7
Information and Communication Technology	0	5	34	14	1	54
Health and welfare	19	32	0	0	0	51
Total	73	109	780	255	10	1227

6.8 Graduation by Grade of Award and Gender

6.8.1 Graduations by Grade of Award and Gender in Public Universities

First class honors had the least gap between the genders with 53% male and 47% graduates. Second upper class honors followed with a difference of 10% between the male and female graduates. The proportion of male graduates with Non-graded awards surpassed female graduates by 14% as illustrated in Table 6.14.

Table 6.14

Graduations by Grade of Award and Gender in Public Universities

Gender	Grade of award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Male	4202	1009	16854	12118	615	34798
	57%	53%	55%	62%	69%	58%
Female	3232	890	13625	7462	274	25483

	43%	47%	45%	38%	31%	42%
Total	7434	1899	30479	19580	889	60281
	100%	100%	100%	100%	100%	100%

6.8.2 Graduations by Grade of Award and Gender in Private Chartered Universities

There was no major difference in the proportion of the awards earned by male and female graduates in Private Chartered Universities. The highest difference occurred within First Class Honors with the proportion of female exceeding male graduates by 8%. There was a marginal difference of 4% between the number of males and females who scored a Pass while both Non-Graded and Second Class Upper had a difference of 2% each as indicated in Table 6.15.

Table 6.15

Graduations by Grade of Award and Gender in Chartered Private Universities

Gender	Grade of award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Male	2054	353	4601	3100	204	10312
	51%	46%	49%	50%	52%	50%
Female	2001	410	4702	3139	188	10440
	49%	54%	51%	50%	48%	50%
Total	4055	763	9303	6239	392	20752
	100%	100%	100%	100%	100%	100%

6.8.3 Graduations by Grade of Award and Gender in Private Constituent Colleges

The Non-graded awards scored the least difference of 2% where males accounted for 51% and females 49% as compared to other grade of awards posting differences of at least 34%. There were 93% of males within Second Lower Class Honors and 7% of females. Between First Class Honours and Second Upper Class Honors, males were 67% and 33% females apiece while there were no females in Pass grade of award. However, the wide differences observed in this category of universities could be better explained by low number of the female graduations. This information is given in Table 6.16.

Table 6.16***Graduations by Grade of Award and Gender in Chartered Private Universities Constituent Colleges***

Gender	Grade of award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Male	52	28	117	63	5	265
	51%	67%	67%	93%	100%	68%
Female	49	14	58	5	0	126
	49%	33%	33%	7%	0%	32%
Total	101	42	175	68	5	391
	100%	100%	100%	100%	100%	100%

6.8.4 Graduations by Grade of Award and Gender in Institutions with Letter of Interim Authority

Grade of awards were seemingly balanced apart from passes in which absolute values were not largely different as opposed to %ages. Males recorded 58% in non-graded as female counterparts standing at 42%. In second upper class honors the outcome was vice versa with female accounting for 58% to that of males 42%. First and second lower class honors demonstrated 37% males and 63% each respectively as indicated in Table 6.17.

Table 6.17***Graduations by Grade of Award and Gender in Private Universities with Letter of Interim Authority***

Gender	Grade of award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Male	42	40	331	94	3	510
	58%	37%	42%	37%	30%	42%
Female	31	69	449	161	7	717
	42%	63%	58%	63%	70%	58%
Total	73	109	780	255	10	1227
	100%	100%	100%	100%	100%	100%

6.9 Summary of the findings

The total number of graduates reduced by 5% between the years 2016 and 2017 with a decline of 6% and 9% in the number of male and female graduates respectively. Public universities graduations were 74% while that in private universities was 26% of all the graduates in 2017. There was a marginal drop in graduations of 4% and 8% in Public and Private Universities respectively.

Chapter Seven

Research Outputs

7.1 Introduction

Universities play a crucial role in generating new knowledge through research and disseminating it to the public for consumption. By producing new knowledge and exposing students to that knowledge; they prepare knowledgeable, inventive, and motivated graduates who can carry those ideas into private businesses and governments. An analysis of the status of research output in Universities in Kenya reveals some gaps which require attention. Data available shows that there are numerous publications, which are being produced in the universities, but there are very few innovations and patents coming out of it. Universities need to shift their focus from merely publishing and invest more time and resources on innovation and securing them by patenting them. It is in doing so that the investment in university education will be felt in the country. This Chapter presents analysis of research outputs including publications, innovations and patents.

7.2 Research outputs in Public and Private Universities

Data was collected on three key research outputs; publications, innovations and patents from the different categories of universities. Data from the constituent Colleges of Public and Private Universities were captured and reported in their parent universities because the numbers were too insignificant.

7.2.1 Publications

Data collected from the 74 universities licensed to operate in Kenya, shows that there were a total of 6,662 publications in all Universities. Public Universities, which recorded 4,465 (67.0%) of the publications, had the highest number. This was more than a half of all the publications. Private Chartered Universities had 1,155 or 17.3%. The remaining 15.5% were from universities with Letters of interim Authority (LIA). In terms of discipline area; Business Administration recorded the highest number of research output with a total of 1,411 publications. It was followed by Natural Sciences, Mathematics and Statistics with 968 publications; Health and Welfare (885), Education (660) and Services (19) had the lowest number of Publications. These findings show that Universities need to be supported to undertake more research so as to scale up their publication output.

7.2.2 Innovations

The total number of innovations reported in universities were 391. Public Universities recorded the highest proportion of innovations with 274 (70%). Private universities had 117 (29.9%), while institutions with Letters of Interim Authority had no innovation recorded as shown in Table 7.1.

Table 7.1

Summary of Research Outputs in Universities in Kenya

Type of University	Publications	Innovations	Patents	Total
Public Universities	4,465	274	42	4,781
Private Universities	1,155	117	2	1,274
Universities with LIA	607	0	0	607
Total	6,227	391	44	6,662

Table 7.2 shows the number of innovations in various discipline areas. The number of innovation was highest in Information and Communication Technology (108), followed by Engineering and Manufacturing (88) while Arts and Humanities had the lowest number of innovations.

7.2.3 Patents

The total number of patents registered in 2017 were 44 with Public universities having 42 (95.4%) patents. Private universities registered a small proportion of 2 (4.6%). There were no patents registered in Education, Arts and Humanities, Social Sciences, Journalism and Information. Engineering, Manufacturing and Construction had the highest number of patents as depicted in Table 7.2.

Table 7.2

Research Output from Public and Private Chartered Universities in Kenya

Domain	Publications	Innovations	Patents	Total
Education	660	11	0	671
Arts and Humanities	727	7	0	734
Social Sciences, Journalism and Information	504	4	0	508
Business, Administration and Law	1,411	19	1	1,431
Natural Sciences, Mathematics and Statistics	968	52	5	1025
Information and Communication Technology	259	108	0	367
Engineering, Manufacturing and Construction	166	88	21	275

Agriculture, Forestry, Fisheries and Veterinary	628	76	8	712
Health and Welfare	885	19	9	913
Services	19	7	0	26
Total	6,227	391	44	6,662

Summary of the findings

It is evident from the data presented in this chapter that Public Universities are doing far much better than Private Universities in the area of research. More than two thirds (70.7%) of research and innovation work is happening in Public Universities. One may argue that this it is expected, given that public universities have a large number of qualified academic staff who serve on full time basis. They are also more likely to receive research grants. But the gap is far too wide to merit any qualification.

From this data, it is quite clear that patenting of research outputs is a big challenge to the universities. The proportion of patents to innovations is 1:9. This is extremely low and it implies that very few innovations transit to the next level of patenting. This may be as a result of many factors: one being ignorance of the process of patenting; two could be due to the complex procedures of patenting and three; it may be due to lack of support and motivation by the agencies charged with the task of promoting this sector. As a result of this lethargic disposition by all the key players – University, Government and Corporate body (KIPI) responsible, little of the numerous research studies and innovations made have been translated into tangible products or processes which impact positively on peoples’ lives. It is a serious indictment of the whole essence of research, if the findings of research merely end up in the shelves of our esteemed institutions of learning.

Chapter Eight

Universities Income and Expenditure

8.1 Introduction

Universities all over the world are regarded as engines of economic and sustainable national development. University education is therefore the most powerful and critical success factor for individuals and the society. The total Government allocation for both recurrent and development to Universities increased over the five year period from 34.6 Billion in 2012/13 to 77 Billion in 2017/18. Recurrent allocation increased from 32 Billion in 2013/14 to 75 billion in 2017/18, while development allocation was 2.6 Billion and 1.6 Billion respectively.

The increase in allocation over the period was as a result of increase in the number of Public Chartered Universities as 25 Constituent Colleges transited to charter and 6 Public Constituent Colleges established in the period. Further, from the 2016/17 financial year, the Government sponsored the first batch of students to Private Universities and as so, Private Universities started receiving Government capitation.

This chapter discusses incomes and expenditures of Universities in Kenya for a period of five years (2013-2018). The analysis covered 31 Public Chartered Universities, 6 Public University Constituent Colleges, 18 Private Chartered Universities, 4 Private University Constituent colleges and 14 Universities with Letter of Interim Authority.

8.2 Revenue Streams in Universities

The income streams are classified into: grants from government, grants from development partners and partner institutions and appropriation in aid.

8.2.1 Revenue Streams in Public Chartered Universities

The Public Chartered universities total income depicts an increasing trend over the five year period recording a 13% change from 76.1 Billion in 2013/14 to 85.7 Billion in 2017/18. The highest income received was from appropriation in aid representing 48% of the total income of 405.3 Billion, followed by grants from government and grants from development partners/partner institutions representing 46% and 5% respectively.

Grants from government increased from 35.4 Billion in 2013/14 to 45.4 Billion in 2017/18, representing 28% increase in the period as shown in Figure 8.1. In 2017/18 government grants received increased by 20% from 37.7 Billion in 2016/7 to 45.4 Billion, and represented 53 % of

the total income in the year. Grants from development partners/partner institutions were stable over the period, with an increase of 68 per cent from 3.8 Billion in 2013/14 to 6.4 Billion in 2017/18. Between financial year 2016/17 and 2017/18, there was a 72% increase in the income from 3.7 Billion to 6.4 Billion respectively, representing 7% of the total income in 2017/18.

Appropriation in aid (A-I-A) on the other hand decreased by 8% in the period under review from 36.9 Billion to 34 Billion in 2013/14 and 2017/18 respectively. As shown in the Figure 8.1, there was a 20% decrease in A-I-A between 2016/17 and 2017/18 from 42.6 Billion to 34 Billion respectively. The income represented 40% of the total income received in 2017/18.

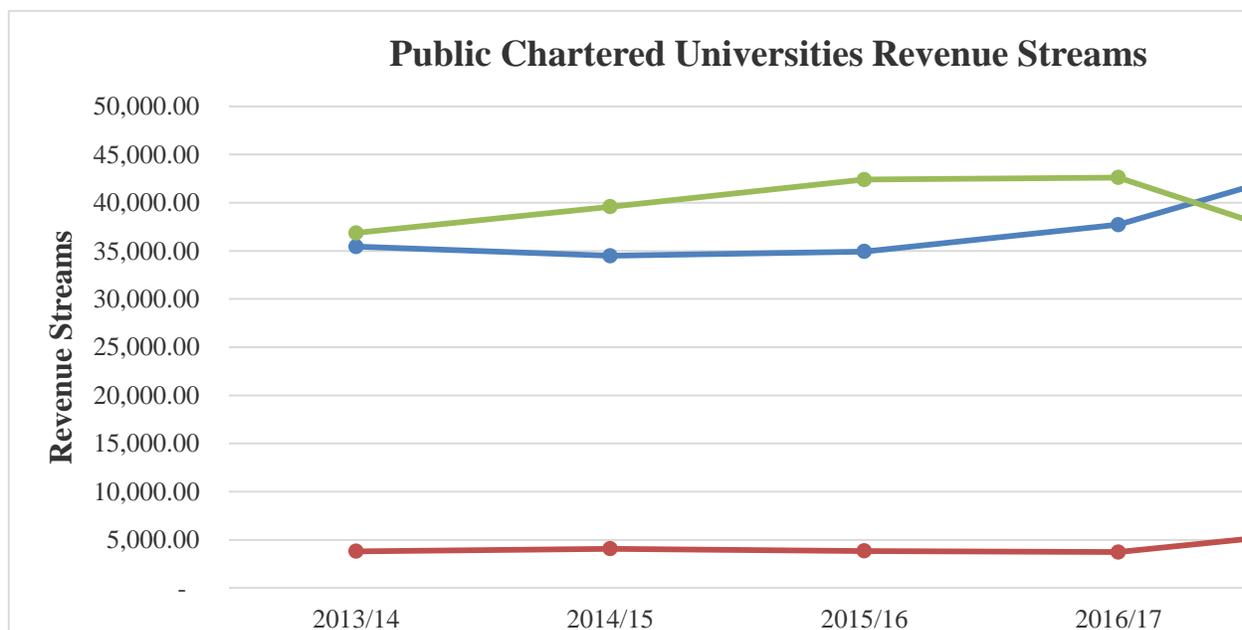


Figure 8.1: Revenue Streams in Public Chartered Universities

8.2.1.1 Classification of Revenue Streams in Public Chartered Universities

Figure 8.2 shows the classifications of revenue streams over the past five years. The highest proportion of revenue received from government grants over the review period was recurrent; it increased from 83.18% in 2013/14 to 94.70% in 2017/18. The proportion of development allocation increased from 8.76% in 2013/14 to 14.0% in 2016/17 and declined to 5.60% in 2017/18.

Research grants contributed to the highest proportion of income received from development partners/partner institutions, which decreased from 95.62% in 2013/14 to 86.06 in 2016/17 and increased to 93.58% in 2017/18. This was followed by scholarships/bursaries and development

grants. Appropriation in aid was contributed more by student fees collected, which its contribution increased from 83.94% in 2013/14 to 85.68% in 2015/16, decreased to 82.24% in 2016/17 and increased to 83.91% in 2017/18.

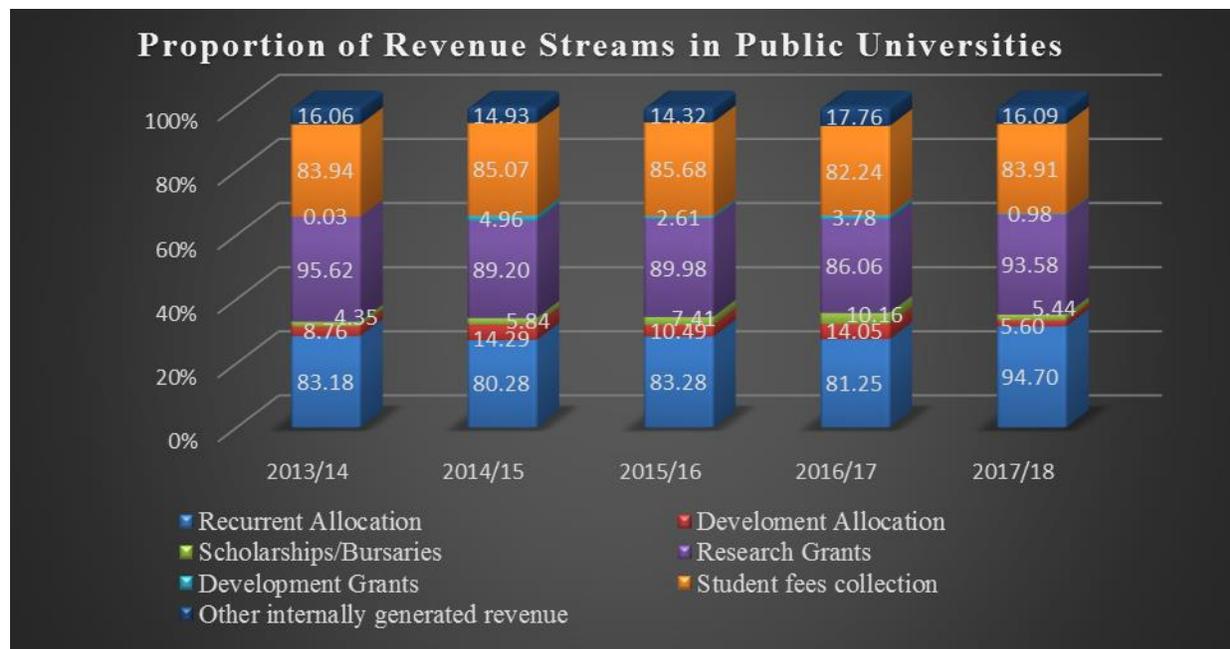


Figure 8.2: Proportion of revenue streams in Public Chartered Universities

8.2.2 Revenue Streams in Private Chartered Universities

The trend in revenue streams in Private Chartered Universities in Figure 8.3 indicate the major source of income being appropriation in aid. It depicts an increasing trend over the review period recording a 100% change from 16.5 Billion in 2013/14 to 33 Billion in 2017/18. Government grants and grants from development partners/ partner institutions were constant over the period increasing from 0.004 Billion and 0.4 Billion in 2013/14 to 0.035 Billion and 1.5 Billion in 2017/18 respectively.

The total income received in the period increased by 104% from 16.9 Billion in 2013/14 to 34.5 Billion in 2017/18, being attributed to increase in appropriation in aid. In 2017/18 the total income received was 34.5 Billion with the highest being from appropriation in aid amount to 33 Billion, representing 95% of total income received in the year. This was followed by grants from development partners/partner institutions and government grants amounting to 1.5 Billion and 0.035 Billion. This represented 0.1% and 4.5% of the total income received.

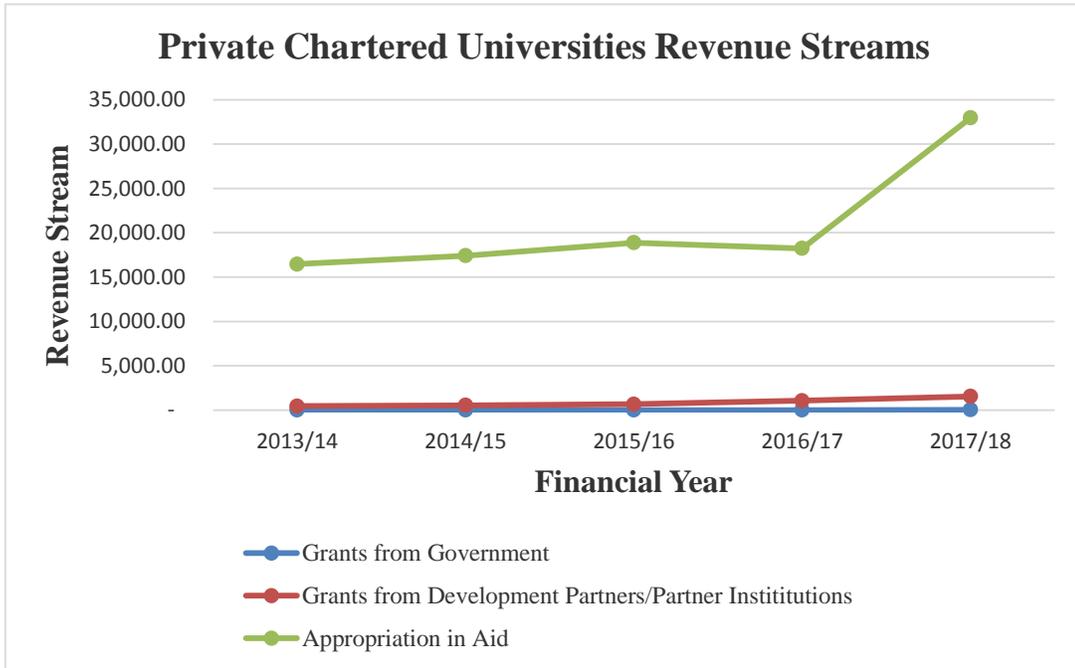


Figure 8.3: Revenue Streams in Private Chartered Universities

8.2.1.2 Classification of Revenue Streams in Private Chartered Universities

Figure 8.4 shows that 100% of grants received from government by Private Chartered Universities was recurrent for all the years except for 2014/15 where 84% was recurrent and 16% for development. Research grants contributed the highest proportion of income for grants from development partners/partner institutions increasing overtime from 42% in 2013/14 to 60% in 2017/18. This was followed by scholarships/bursaries and the least proportion was from development grants. In regard to appropriation in aid, the highest proportion was from student fees which declined from 90% in 2013/14 to 85% in 2017/18.

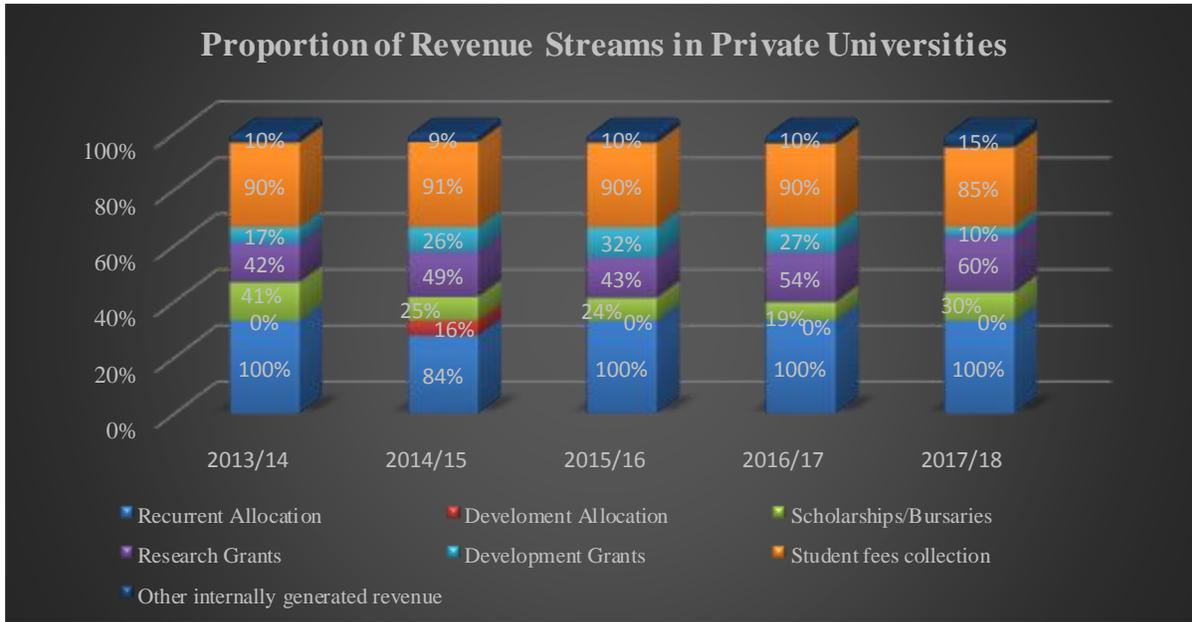


Figure 8.4: Proportion of Revenue Streams in Private Chartered Universities

8.2.3 Revenue Streams in Universities with Letter of Interim Authority

Figure 8.5 shows increasing trend in revenues from appropriation in aid and grants from development partners/partner institutions for universities with letter of interim authority, in the period under review. However there was no income received from government grants in the period. The total income increased by 75.7% from 2.1 Billion in 2013/14 to 3.7 Billion in 2017/18. In all the years, the highest income was from appropriation in aid, which increased from 1.4 Billion to 2.3 Billion representing a 64% change, in 2013/14 and 2017/18 respectively. On the other hand, grants from development partners/partner institutions increased by 98% in the same period from 0.7 Billion to 1.4 Billion.

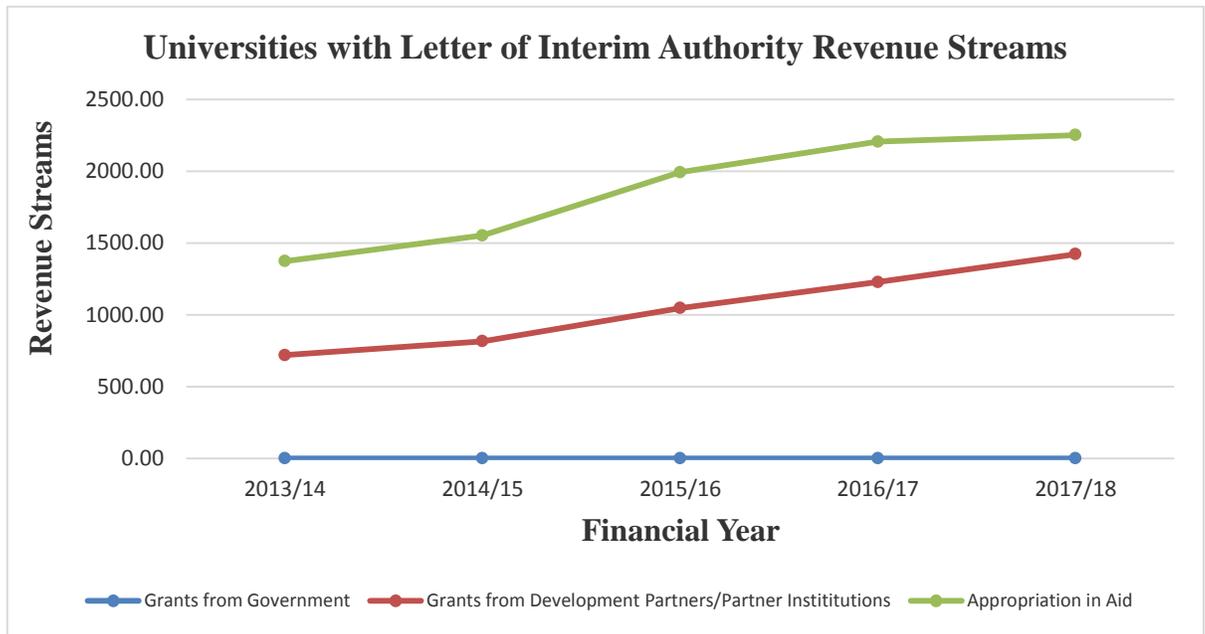


Figure 8.5: Revenue streams in Universities with Letter of Interim Authority

8.2.3.1 Classification of Revenue Streams in Universities with Letter of Interim Authority

The total grants from development partners/ partner institutions was largely attributed to research grants with its proportion contribution increasing from 96% in 2013/14 to 98% in 2017/18 as depicted in Figure 8.6. This was followed by scholarships/bursaries whose share contribution declined from 4% to 1% in 2016/17 and increased to 2% of total grants in 2017/18. The least contribution to the income was development grants which was 4% in 2016/17, over the years. Student fees was the main source of income, increasing over the years from 80% to 83% of the total appropriation in aid in 2017/18. Other internally generated revenue share of total A-I-A decreased from 20% in 2013/14 to 17% in 2017/18.

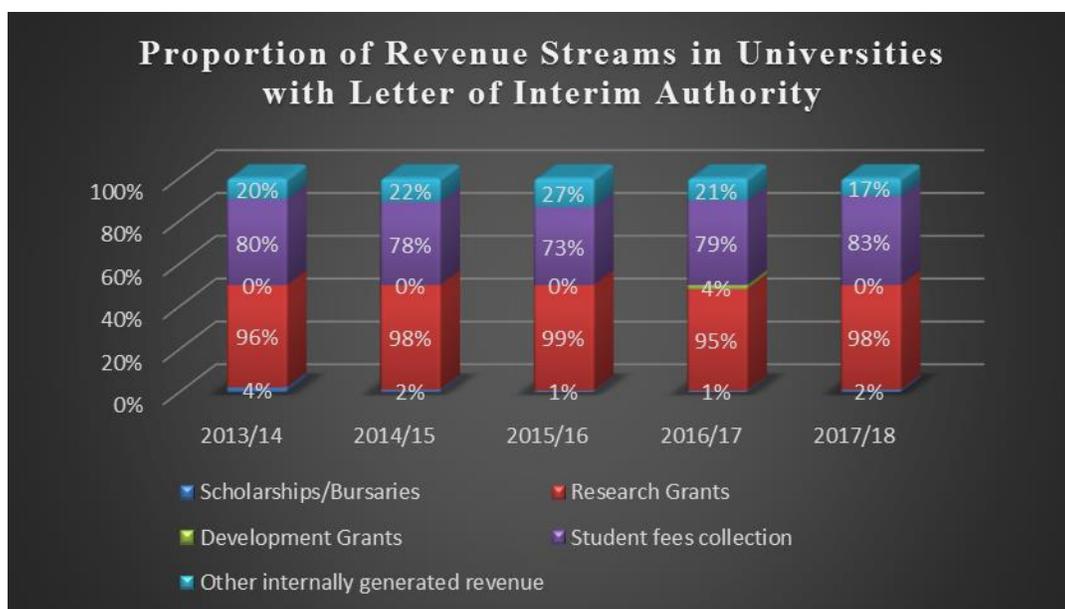


Figure 8.6: Proportion of revenue streams in Universities with Letter of Interim Authority

8.2.4 Revenue Streams in Public Constituent Colleges

Public Constituent Colleges received revenue of 0.4 Billion in 2016/17 and 0.8 Billion in 2017/18, of which 77% were grants from government and 23% from appropriation in aid in both years. The least income was from development partners grants. Income received from government grants were for recurrent allocation amounting to 0.32 Billion in 2016/17 and 0.63 Billion in 2017/18. In regard to appropriation in aid, student fees contributed the highest share of income at 88% and 80% in 2016/17 and 2017/18 respectively; other internally generated revenue was 12% and 20% in the same years.

8.2.5 Revenue Streams in Private Constituent Colleges

Private Constituent Colleges universities derived their revenue from appropriation in aid and grants from development partners. In the review period revenue received increased by 32% from 0.39 Billion in 2013/14 to 0.51 Billion in 2016/17 and recorded a decrease of 33% to 0.34 Billion. Revenue from appropriation in aid increased from 0.38 Billion in 2013/14 to 0.48 Billion in 2016/17, declining in 2017/18 to 0.34 Billion. Grants from development partners increased from 0.004 Billion to 0.037 Billion in 2016/17 and declined to 0.026 Billion in 2017/18.

Student fees contributed the highest proportion of the total appropriation in aid over the review period decreasing from 83.7% in 2013/14 to 77.8% in 2017/18. Other internally generated revenue share contribution increased from 16.3% in 2013/14 to 22.2% in 2017/18.

8.3 Universities Expenditure and Expenditure Items

This section describes the expenditure items on which income by Universities is spent. Expenditure includes current and capital expenditure, where current expenditure includes, salaries & wages, operations & maintenance and other expenditure. Capital expenditure on the other hand refers to spending on assets that last longer than one year. It includes acquisition of non-financial assets and other development.

8.3.1 Expenditure and Expenditure Items in Public Chartered Universities

The total current and capital expenditure in the review period for public chartered universities increased by 4.4% from 85.1 Billion in 2013/14 to 88.9 Billion in 2017/18. Current and capital expenditure was 95% and 5% respectively of the total expenditure in 2017/18. Figure 8.7 shows that the highest current expenditure went to salaries and wages, which increased by 36% from 44 Billion in 2013/14 to 60 Billion in 2017/18. This was followed by operations and maintenance which decreased by 12% and other expenditure decreasing by 36% over the review period. Salaries and wages accounted for 71%, operations and maintenance 34% and other expenditure 18% of the total current expenditure of 84.6 Billion 2017/18.

On the other hand, capital expenditure exhibited a declining trend over the review period with expenditure on acquisition of non-financial assets declining by 71% from 10 Billion 2013/14 to 3 Billion in 2017/17. Other development expenditure also declined by 9% from 1.5 Billion to 1.4 Billion in 2013/14 and 2017/18 respectively. Expenditure on acquisition of non-financial amounted to 3 Billion and other development 1.4 Billion representing 68% and 46% respectively of total capital expenditure of 4.3 Billion in 2017/18.

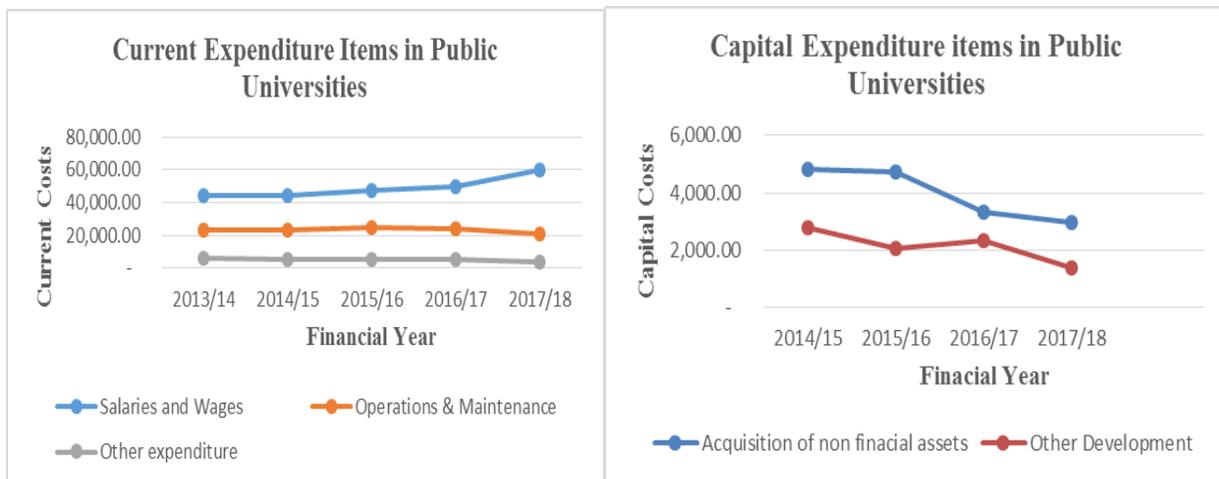


Figure 8.7: Current and Capital Expenditure in Public Universities

8.3.2 Expenditure and Expenditure Items in Private Chartered Universities

Total expenditure in Private chartered universities for the period increased by 17% from 17.8 Billion in 2013/14 to 20.8 Billion in 2016/17 and decreased to 16.2 Billion in 2017/18 recording a 22% decrease. In 2017/18, the total expenditure was 16.2 Billion with the highest proportion of expenditure going to salaries and wages at 53%, followed by operations and maintenance at 32% and the least was other development at 0.4%. The same trend was depicted in current expenditure items as shown in Figure 8.8 with salaries and wages being the highest expenditure item over the period increasing by 30% from 7.9 Billion in 2013/14 to 10.3 Billion in 2016/17 and decreasing by 22% to record an expenditure of 8.5 Billion in 2017/18. This was followed by operations and maintenance and other expenditure. As a proportion of total recurrent expenditure amounting to 15.2 Billion in 2017/18, 53% went to salaries and wages, 35% to operations and maintenance and 9% to other expenditure.

On capital expenditure, acquisition of non-financial assets depicts a decreasing trend over the years from 2.9 Billion in 2013/14 to 0.9 Billion in 2017/18, representing a 68% decrease. Other development also decreased by 66% from 0.2 Billion in 2013/14 to 0.068 Billion in 2017/18. The total capital expenditure amounted to 0.985 Billion, with 93% going to acquisition of non-financial assets and 7% to other development in 2017/18.

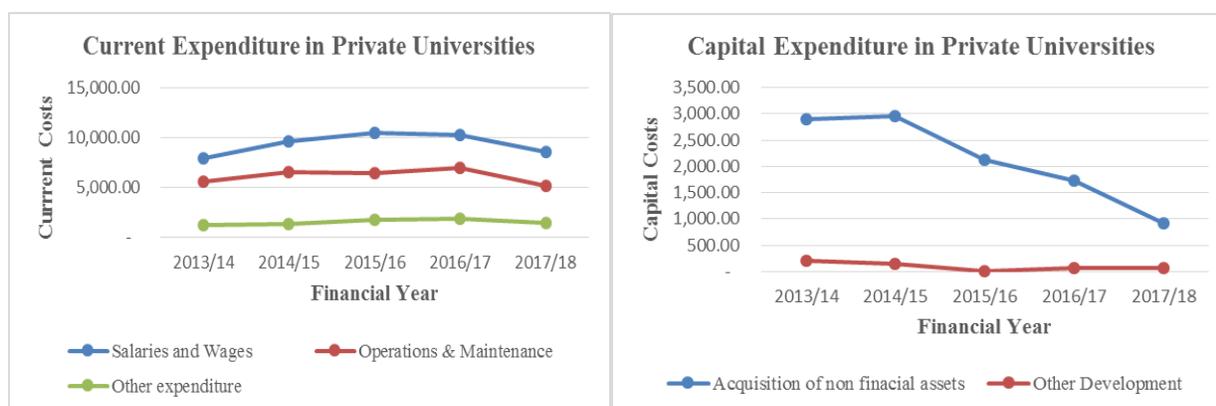


Figure 8.8: Current and Capital Expenditure in Private Universities

8.3.3 Expenditure and Expenditure Items in Universities with Letter of Interim Authority

The total expenditure for universities with letter of interim authority decrease over the review period from 6 Billion in 2013/14 to 4.7 Billion in 2017/18, recording a 22% decrease. The highest proportion of total expenditure in 2017/18 went to recurrent expenditure at 66%,

amounting to 3.1 Billion and capital expenditure 34%, amounting to 1.6 Billion. In regard to expenditure items, 42% went to salaries and wages, 27% to acquisition of non-financial assets, 17% to operations and maintenance, 8% to other expenditure and the least went to other development at 7%.

Figure 8.9 shows that salaries and wages increased over the period from 1.3 Billion in 2013/14 to 2 Billion in 2017/18, representing a 43%. Other expenditure increased by 57% from 0.2 Billion in 2013/14 to 0.4 Billion in 2017/18. However, expenditure on operations and maintenance decreased over the period by 32% from 1.3 Billion to 2 Billion in 2013/14 and 2017/18 respectively. The proportion of current expenditure in 2017/18 that went to salaries and wages was 63%, 25% to operations and maintenance and 11% to other expenditure.

Capital expenditure items depicted a decreasing trend over the period with acquisition of non-financial assets decreasing by 53% and other development by 40%, recording expenditures of 1.3 Billion and 0.32 Billion in 2017/18 respectively. This represented 79% in acquisition of non-financial assets and 21% in other development of the total capital expenditure amounting to 1.6 Billion in 2017/18.

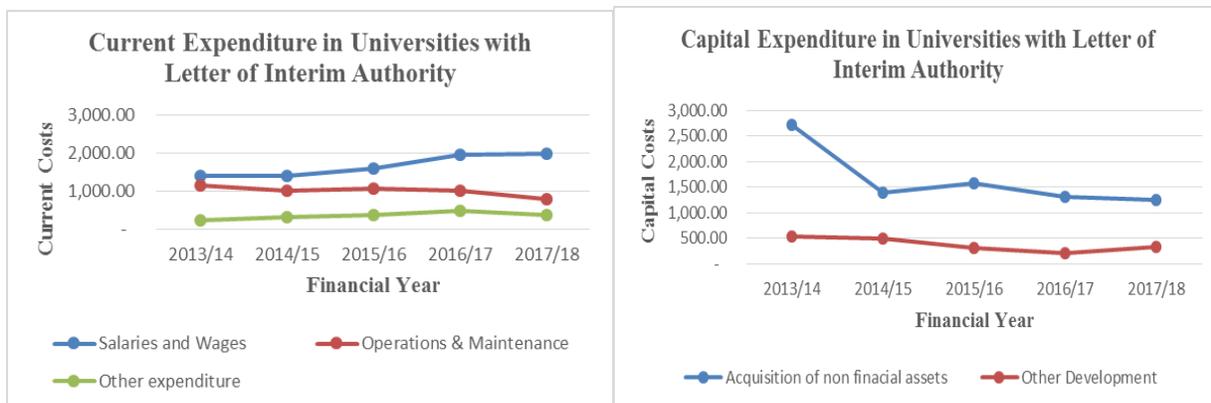


Figure 8.9: Current and Capital Expenditure in Universities with Letter of Interim Authority

8.3.4 Expenditure and Expenditure Items in Public Constituent Colleges

The total expenditure in public constituent colleges amounted to 1.4 Billion in 2016/17, 18% being spent on recurrent and 82% on capital expenditure. In 2017/18, 12.5 Billion was spent; 6% for recurrent and 94% on capital expenditure. The total recurrent expenditure for the year was 0.765 Billion with 59% being spent on salaries and wages, 22% on operations and maintenance

and 20% on other expenditure. Capital expenditure on the other hand amounted to 11.7 Billion with 98% being spent on other development, while 2% on acquisition of non-financial assets.

8.3.5 Expenditure and Expenditure Items in Private Constituent Colleges

The total expenditure increased by 38% from 0.4 Billion in 2013/14 to 0.6 Billion in 2016/17, then declined to 0.36 Billion in 2017/18 representing a 41% decrease. In 2017/18, current expenditure amounted to 0.34 Billion, representing 96% and capital expenditure amounted to 0.014%, representing 4% of total expenditure in the year.

Salaries and wages were 59%, operations and maintenance 30% and other expenditure 11% of the total current expenditure in 2017/18. On the other hand, total capital expenditure in the same year was largely attributed to acquisition of non-financial assets at 70% and other development at 30%.

8.4 Conclusion and Recommendation

Public universities recorded a deficit of 3.2 Billion in 2017/18, having received revenues amounting to 85.7 Billion and spent 88.9 Billion. On the other hand, private universities operated on a deficit since 2013/14 until 2016/17 and reported a surplus of 18.4 Billion in 2017/18. Total revenue in private universities amounted to 34.5 Billion while the expenditure was 16.2 Billion.

The analysis indicated that public universities rely on government grants as a major source of income and private universities on appropriation in aid and in particular student fees. Also, universities with letter of interim authority rely on appropriation in aid. On expenditure, salaries and wages were the highest expenditure item in all the universities, except for public constituent colleges where capital expenditure was highest. This is explained in that when constituent colleges are established, government provides seed money for development of the institutions, as they grow, it is expected that capital expenditure will reduce and recurrent expenditure to increase.

The universities may not be able to sustain themselves with the resources they currently receive from various income streams. If this trend is not remedied then the university sub-sector may not

be able to meet its objectives as specified in the Universities Act, 2012 section 3(1). Hence, government should be able to increase funding allocation to the university sub sector and ensure that 2% of gross domestic product is allocated to research as stipulated in the Science Technology and Innovation Act, 2013.

Chapter Nine

Conclusions and Recommendations

Academic Programmes

The total number of academic programmes offered in the universities increased significantly by 25.8%, from 3,980 in 2016/2017 to 5,006 in 2017/2018. The previous figure however, excludes Diploma programmes which were 534 in the 2017/2018 academic year. Majority of the academic programmes were in Natural Sciences, Mathematics and Statistics with 929 (19%), followed by Arts and Humanities 842 (17%). The latter had topped in the previous year with 661 programmes. There was a significant increase in the number of programmes under the Engineering, Manufacturing and Construction and the Architecture clusters from 229 programmes in the year 2016/2017 to 299 in the year under review. Agriculture, Forestry, Fisheries and Veterinary had a significant representation with 532 programmes, 97% of which were offered by Public Universities. The cluster with the highest number of programmes in Public Universities was Natural Sciences, Mathematics and Statistics, followed by Arts and Humanities while Private universities majorly offered Arts and Humanities, followed by Business, Administration and Law.

Relevance of programmes offered in the university is very important and should be given due consideration whenever programmes are developed. It is incumbent upon Universities to regularly review their programmes to determine their value, current status and viability both in terms of disciplined-based knowledge and cross-cutting skills. Further, curricula reviews should identify programmes that address the changing labour needs as well as keeping pace with the competitive global environment and other emerging issues. Universities should aim at mounting

more innovative programmes that will produce more analytical, critical and globally competitive graduates.

Enrolment

Total enrolment in Public Universities declined from 547,316 students in the year 2016 to 537,723 students in 2017. Exclusive of Diploma student enrolment, this represents an overall marginal decline in enrolment of 1.75 %. But interestingly, there was an increase of students from 88,360 students in 2016 to 100,139 in Private Universities in 2017 representing a 13.33 % increase. In Public Universities, there was a decline in enrolment from 458,956 students in 2016 to 437,584 students in 2017 representing a 4.66 % decline. The placement of Government Sponsored students by Kenya Universities and Colleges Central Placement Service (KUCCPS) into Private universities, which started in 2016, may explain the increase in enrolment in private universities. Across the different levels, the rise in enrolment was recorded in Doctorate and PGD levels, while the numbers reduced at Bachelors level in Public Universities. At Masters Level, there was a reduction in the number of students who enrolled in Public Universities.

Enrolment of International Students

The number of international students enrolled in Kenyan universities increased from 4,730 in the year 2016/2017 to 4,798 students in the year 2017/2018, a slight increase of 1.41%. The number of international male students enrolled in universities was higher 3,544 (73.86%) compared to that of female students 1,254 (26.14%).

Majority of the international students (52.06%) were enrolled at Bachelors level, followed by Masters (38.12%) and the least number of students enrolled was in the Post graduate Diploma level (1.29%). The same scenario was witnessed in the university categories, where the majority of students enrolled were at Bachelors level for both Public (17.53%) and Private (34.54%) universities respectively. The second highest number of enrolments was at Masters level for both Public (17.44%) and Private Universities (20.68%) respectively. The least number of international students enrolled was in Post Graduate Diploma level for both Public (0.27%) and Private (0.33%) Universities.

Academic Staff

It was noted that the majority, 55% of academic staff had Masters qualification, while 36% of the academic staff had PhD qualification. The Universities Standards and Guidelines, 2014 stipulates that academic staff should possess PhD qualification to have legitimate tenure in the university. However, the data has revealed that there is a big shortfall of academic staff with PhD in the universities. This has serious implications in terms of academic leaders to run academic programmes and mentor upcoming faculty with Master's qualifications. This gap may also affect the quality of teaching and research in the universities. Universities should therefore strive to develop capacity of the staff through scholarships, reduced workloads and *time-offs* to academic staff with Masters to transit to PhD.

In terms of rank, data revealed that academic staff at the rank of Lecturer were the majority at 40%. This was followed by Tutorial Fellows and Senior Lecturers at 33% and 12% respectively. Associate Professors and Professors both combined accounted for only for 8%. These statistics are quite disconcerting in the sense that the bulk of the academic work force -80% - are running the lecture halls, of which a paltry proportion of 20% constitute the Senior Lecturers and Professors. Further analysis revealed that in public universities, academic staff at the rank of Professor declined by 6.7%; while in private universities, they increased by 8%. This shows public universities continue to lose senior faculty to the private sector.

Graduation

The graduates reduced by 5% from year 2016 to 2017. Male graduates dropped by 6% from year 2016 to 2017 while females also saw a decline of 9% in the same period. Public universities accounted for 74% while private universities demonstrated 27% in the year 2017. Public universities came down by 4% from 2016 to 2017 while private universities dropped by 8% in the same period respectively.

In public universities males graduates were 58% while female counterparts constituted 42%. Private universities both males and females were at par at 50% each respectively. In regard to total graduations, Public chartered universities accounted for 73% while there were no graduations in their constituent colleges. Private chartered universities recorded 26% with their constituent colleges and universities with letter of interim authority sharing 1%.

Total graduations by level of award, Bachelors recorded 89%, masters 10% while PhD stood at 1%.

Graduations by domain of award in public universities indicated that Business, Administration and Law, Education, Arts and Humanities represented 61% while Natural Sciences, Mathematics and Statistics, Engineering, Manufacturing and Construction, Agriculture, Forestry, Fisheries and Veterinary, Information Communication and Technology registered 29% as 10% was distributed among Social Sciences, Journalism and Information. The same trend was observed in private universities where Business, Administration and Law, Education, Arts and Humanities represented 72% while Natural Sciences, Mathematics and Statistics, Engineering, Manufacturing and Construction, Agriculture, Forestry, Fisheries and Veterinary, Information Communication and Technology registered 8% as Social Sciences, Journalism and Information, Health and Welfare recorded 20%.

In graduations by domain and grade of award in public universities, the report revealed that second upper class was common at 51%, second lower class 33%, non-graded 12%, first class honors 3% and passes 1%. The same trend was observed in private universities with second upper class at 45%, second lower class 35%, non-graded 20% and passes 5% respectively.

Implications of the findings

Universities are among key factors in constructing a knowledge-based society. Around the world, countries have been pushing for expansion of higher education. The underlying view is clearly that improving the skills of the country will improve the economic position of both individuals and the nation as whole and also enhance global competitiveness. Higher education is seen as the source of innovation that will drive productivity improvements and thus economic growth. And, expansion of higher education is frequently put forth as an attractive government policy because of its potential impact on economic growth. (Browne Report, 2010).

Doctoral training has become an important progenitor of new knowledge, which is crucial to the development of prosperous, developed societies, as they must rely on new knowledge and highly skilled knowledge workers to feed the process of continuous innovation (European Commission 2011).

Research Outputs

Universities play a crucial role in generating new knowledge through research and disseminating it to the public for consumption. By producing new knowledge and exposing students to that knowledge; they prepare knowledgeable, inventive, and motivated graduates who can carry those ideas into private businesses and governments. An analysis of the status of research outputs in Universities in Kenya reveals some gaps which require attention. Data available shows that there are numerous publications, which are being produced in the universities, but there are extremely few innovations and patents coming out of it. Universities need to shift its focus on merely publishing and invest more time and resources on innovation and securing them by patenting. It is in doing so that the investment in university education will be felt in the country.

Publications

Data collected from the 74 universities licensed to operate in Kenya, shows that there were a total of 6,662 publications in all Universities. Public Universities, which recorded 4,465 or (67.0%) publications, had the highest number. This was more than half of all the publications. Private Universities had 1,155 or 17.3%. The remaining 15.5% were from Institutions with Letters of Interim Authority (LIA). In terms of discipline area; Business, Administration and Law recorded the highest number of research outputs with a total of 1,411 publications. It was followed by Natural Sciences, Mathematics and Statistics with 968 publications; Health and Welfare had 885, Education had 660 and Services with 19 had the lowest number of publications. Universities need to be supported to undertake more research so as to scale up their publication outputs.

Innovations

The total number of innovations reported in universities were 391. Public Universities recorded the highest proportion of innovations with 274(70%). Private universities had 117 (29.9%), while Institutions with Letters of Interim Authority had no innovation recorded. The number of innovation was highest in Information and Communication Technology (108), followed by Engineering, Manufacturing and Construction (88) while Arts and Humanities had the lowest number of innovations.

Patents

The total number of patents was 44 with Public universities having the highest 42 (95.4%) number of patents. Private universities registered a small proportion of 2 (4.5%). There were no patents registered in Education, Arts and Humanities, Social Sciences, Journalism and Information. Engineering, Manufacturing and Construction had the highest number of patents.

From this data, it is quite clear that patenting of research outputs is a big challenge to the universities. The proportion of patents to innovations is 1:9. This is extremely low and it implies that very few innovations transit to the next level of patenting. This may be as a result of many factors: one being ignorance of the process of patenting; two could be due to the complex procedures of patenting and three; it may be due to lack of support and motivation by the agencies charged with the task of promoting this sector. As a result of this lethargic disposition by all the key players – University, Government and Corporate body (KIPI) responsible, little of the numerous research studies and innovations made have been translated into tangible products or processes which impact positively on peoples' lives. It is a serious indictment of the whole essence of research, if the findings of research merely end up in the shelves of our institutions of learning.

Income and Expenditure

The public universities experienced deficit in the budget over the period recording a deficit of 3.2 Billion in 2017/18, having received revenues amounting to 85.7 Billion and spent 88.9 Billion. On the other hand, private universities operated on a deficit from 2013/14 to 2016/17 and in 2017/18 there was a surplus of 18.4 Billion having received revenue amounting to 34.5 Billion and the expenditure was 16.2 Billion.

The analysis indicated that public universities rely on government grants as a major source of income and private universities rely on appropriation in aid and in particular student fees. Also, Institutions with Letter of Interim Authority rely on appropriation in aid. On expenditure, salaries and wages was the highest expenditure item in all the universities, except for public constituent colleges where capital expenditure was highest. This is explained in that when constituent colleges are established, government provides seed money for development of the institutions, as they grow it is expected that capital expenditure will reduce and recurrent expenditure to increase.

The universities may not be able to sustain themselves with the resources its currently receives from various income streams. If this trend is not remedied then the university sub-sector may not be able to meet its objectives as specified in the Universities Act, 2012 section 3(1). Hence, government should be able to increase funding allocation to the university sub sector and ensure that 2% of gross domestic product is allocated to research as stipulated in the Science Technology and Innovation Act, 2013.

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ANNEXES

Annex 1: Number of Programmes in Public Chartered Universities

	Name of University	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
1	Chuka University	47	64	1	58	24	194
2	Dedan Kimathi University	5	15	1	28	11	60
3	Egerton University	49	64	5	63	25	206
4	Garissa University	2	2	0	23	4	31
5	Jaramogi Oginga Odinga University of Science & Technology	21	41	0	36	6	104
6	Jomo Kenyatta University of Agriculture & Technology	43	95	0	112	0	250
7	Karatina University	11	25	0	35	0	71
8	Kenyatta University	52	140	16	110	0	318
9	Kibabii University	8	17	1	19	6	51
10	Kirinyaga University	1	1	0	16	13	31
11	Kisii University	36	43	1	84	34	198

12	Laikipia University	14	10	1	28	8	61
13	Maasai Mara University	16	35	0	55	6	112
14	Machakos University	4	10	2	34	20	70
15	Maseno University	62	81	7	98	0	248
16	Masinde Muliro University of Science & Technology	49	66	0	78	12	205
17	Meru University of Science and Technology	4	9	0	34	0	47
18	Moi University	50	111	10	85	0	256
19	Multimedia University	0	15	0	23	11	49
20	Murang'a University	10	13	0	39	8	70
21	Pwani University	38	34	0	61	0	133
22	Rongo University	15	23	1	45	31	115
23	South Eastern Kenya University	8	35	0	46	18	107
24	Taita Taveta University	0	3	0	8	0	11
25	Technical University of Kenya	19	9	0	61	0	89
26	Technical University of Mombasa	4	15	0	39	0	58
27	The Cooperative University of Kenya	0	3	0	15	0	18
28	University of Eldoret	27	40	1	53	17	138
29	University of Embu	9	18	0	29	4	60
30	University of Kabianga	3	19	0	32	11	65
31	University of Nairobi	118	265	32	131	25	571
	Total	725	1321	79	1578	294	3997

Annex 2: Number of Programmes in Public Universities Constituent Colleges

	Name of University	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
1	Alupe University College	0	0	0	15	11	26
2	Bomet University College	0	0	0	10	1	11
3	Kaimosi Friends College University	0	0	0	13	4	17
4	Tharaka University College	1	7	0	3	2	13
5	Tom Mboya University College	6	3	0	13	1	23
6	Turkana University College	0	3	0	5	6	14
	TOTAL	7	13	0	59	25	104

Annex 3: Number of Programmes in Private Chartered Universities

	Name of University	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
1	Adventist University	2	9	0	0	0	11

2	Africa International University	5	11	2	10	9	37
3	Africa Nazarene University	2	8	2	15	12	39
4	Catholic University of East Africa	0	12	0	18	13	48
5	Daystar University	2	9	2	31	12	56
6	Great Lakes University Of Kisumu	1	7	0	12	0	20
7	Kabarak University	9	17	0	30	23	79
8	KAG University	0	1	0	7	0	8
9	KCA University	1	12	1	19	0	33
10	Kenya Highlands Evangelical University	0	2	0	13	4	19
11	Kenya Methodist University	6	19	0	31	24	80
12	Mount Kenya University	2	23	2	60	0	87
13	PAC University	2	5	1	9	8	25
14	Scott Christian University	0	5	0	10	8	23
15	St. Paul's University	3	13	1	19	0	36
16	Strathmore University	2	15	0	13	0	30
17	United States International University -Africa	3	7	0	17	0	27
18	University of Eastern Africa, Baraton	1	6	1	39	13	60
	TOTAL	41	181	12	353	127	719

Annex 4: Number of Programmes in Private Universities Constituent Colleges

	University Name	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
1	Hekima University	0	2	1	1	0	4
2	Marist International University College	0	1	0	2	11	14
3	Tangaza University College	1	10	0	11	0	22
4	Uzima University College	0	0	0	4	3	7
	TOTAL	1	13	1	18	14	47

Annex 5: Number of Programmes in Institutions with Letter of Interim Authority

	Name of University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
1	Aga Khan University	0	2	0	1	1	4

2	AMREF International University	0	0	0	2	0	2
3	GRETSA University	0	0	0	5	23	28
4	International Leadership University	0	4	0	1	0	5
5	Kiriri Women's University of Science and Technology	0	0	0	5	7	12
6	Lukenya University	0	0	0	5	0	5
7	Management University of Africa	1	3	0	3	7	14
8	Pioneer International University	0	0	0	3	0	3
9	Presbyterian University of East Africa	0	2	0	5	17	24
10	RAF International University	0	0	0	2	1	3
11	Riara University	0	0	0	8	0	8
12	The East African University	0	0	0	4	12	16
13	UMMA University	0	1	0	6	0	7
14	Zetech University	0	0	0	7	6	13
	TOTAL	1	12	0	57	74	144

Annex 6: Programmes by Cluster and Academic Level in Public Chartered Universities

Clusters	Programmes by Cluster and Academic Level in Public Chartered Universities						
	University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
Agriculture, Forestry, Fisheries and Veterinary	Chuka University	18	10	0	9	5	42
	Egerton University	15	16	0	11	7	49
	Jaramogi Oginga Odinga University of Science and Technology	0	4	0	7	0	11
	Jomo Kenyatta University of Agriculture & Technology	4	6	0	18	0	28
	Karatina University	0	3	0	5	0	8
	Kenyatta University	14	21	0	10	0	45
	Kibabii University	0	0	0	4	0	4
	Kisii University	5	5	0	13	5	28
	Laikipia University	0	0	0	1	0	1
	Maasai Mara University	0	0	0	2	1	3
	Machakos University	0	0	0	5	0	5
	Maseno University	7	6	0	8	0	21
	Masinde Muliro University of Science & Technology	2	7	0	8	2	19
	Meru University of Science & Technology	1	1	0	9	0	11
	Moi University	0	3	0	3	0	6
	Murang'a University	1	1	0	0	0	2
	Pwani University	3	3	0	11	0	17
	Rongo University	3	4	0	6	4	17
	South Eastern Kenya University	3	10	0	10	4	27
	Taita Taveta University	0	0	0	1	0	1
	Technical University of Mombasa	0	1	0	1	0	2
	The Co-operative University of Kenya	0	0	0	1	0	1
	University of Eldoret	7	9	0	19	4	39
	University of Embu	3	8	0	7	1	19
	University of Kabianga	0	3	0	4		7
	University of Nairobi	32	48	5	13	1	99
	SUB TOTAL	118	169	5	186	34	512
Arts and Humanities	Chuka University	8	12	0	10	1	31
	Dedan Kimathi University	0	0	0	0	1	1

Clusters	Programmes by Cluster and Academic Level in Public Chartered Universities						
	University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
	Egerton University	6	7	0	8	0	21
	Garissa University	0	0	0	1	0	1
	Jaramogi Oginga Odinga University of Science and Technology	0	7	0	6	1	14
	Karatina University	2	5	0	5	0	12
	Kenyatta University	7	22	2	22	0	53
	Kibabii University	0	5	0	2	4	11
	Kisii University	13	12	0	19	8	52
	Laikipia University	8	7	0	11	4	30
	Maasai Mara University	2	6	0	11	3	22
	Machakos University	1	1	0	1	0	3
	Maseno University	15	21	0	22	0	58
	Masinde Muliro University of Science & Technology	5	5	0	4	2	16
	Moi University	11	27	4	20	0	62
	Murang'a University	1	1	0	5	0	7
	Pwani University	8	8	0	20	0	36
	Rongo University	2	3	0	3	0	8
	South Eastern Kenya University	0	5	0	3	1	9
	Technical University of Kenya	1	1	0	2	0	4
	The Co-operative University of Kenya	0		0	3	0	3
	University of Eldoret	0	2	0	7	9	18
	University of Embu	1	3	0	4	2	10
	University of Kabianga	2	3	0	8	0	13
	University of Nairobi	20	60	8	25	2	115
Sub Total	113	223	14	222	38	610	
Business Administration and Law	Chuka University	1	6	0	9	2	18
	Dedan Kimathi University	1	4	0	5	3	13
	Egerton University	2	3	0	6	4	15
	Garissa University	0	0	0	4	1	5
	Jaramogi Oginga Odinga University of Science and Technology	0	2	0	3	1	6
	Jomo Kenyatta University of Agriculture & Technology	4	7	0	7	0	18
	Karatina University	4	4	0	6	0	14

Clusters	Programmes by Cluster and Academic Level in Public Chartered Universities						
	University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
	Kenyatta University	6	19	4	9	0	38
	Kibabii University	1	3	0	2	1	7
	Kirinyaga University	1	1	0	6	2	10
	Kisii University	4	5	0	11	8	28
	Laikipia University	1	1	0	6	2	10
	Maasai Mara University	1	7	0	11	2	21
	Machakos University	2	5	0	4	8	19
	Maseno University	2	5	0	14	0	21
	Masinde Muliro University of Science & Technology	1	2	0	3	1	7
	Meru University of Science & Technology	0	2	0	5	0	7
	Moi University	6	16	3	16	0	42
	Multimedia University	0	3	0	6	5	14
	Murang'a University	2	3	0	5	1	11
	Pwani University	2	1	0	3	0	6
	Rongo University	1	1	1	7	6	16
	South Eastern Kenya University	0	2	0	6	4	12
	Taita Taveta University	0	1	0	3	0	4
	Technical University of Kenya	2	0	0	4	0	6
	Technical University of Mombasa	1	4	0	6	0	11
	The Co-operative University of Kenya	0	2	0	6	0	8
	University of Eldoret	3	1	0	2	3	9
	University of Embu	1	1	0	5	1	8
	University of Kabianga	1	3	0	2	1	7
	University of Nairobi	1	11	0	18	6	35
	SUB TOTAL	51	125	8	200	62	446
Education	Chuka University	9	7	1	4	3	24
	Egerton University	5	6	0	5	6	22
	Garissa University	2	2	0	3	2	9
	Jaramogi Oginga Odinga University of Science and Technology	1	9	0	7	1	18
	Karatina University	2	3	0	4	0	9
	Kenyatta University	5	14	4	12	0	35
	Kibabii University	3	4	1	3	0	11
	Kisii University	5	5	1	8	3	22

Clusters	Programmes by Cluster and Academic Level in Public Chartered Universities						
	University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
	Laikipia University	5	2	1	4	1	13
	Maasai Mara University	5	9	0	10	0	24
	Machakos University	0	4	1	4	2	11
	Maseno University	9	8	3	11	0	31
	Masinde Muliro University of Science & Technology	8	10	0	11	0	29
	Meru University of Science & Technology	0	1	0	1	0	2
	Moi University	13	21	2	10	0	46
	Murang'a University	1	1	0	4	0	6
	Pwani University	3	3	0	4	0	10
	Rongo University	7	6	0	5	4	22
	South Eastern Kenya University	1	3	0	3	0	7
	University of Eldoret	5	9	1	8	0	23
	University of Kabianga	0	4	0	4	4	12
	University of Nairobi	3	16	2	11	2	34
	SUB TOTAL	92	147	17	136	28	420
Engineering, Manufacturing and Construction	Chuka University	0	1	0	1	0	2
	Dedan Kimathi University	3	8	1	14	4	30
	Egerton University	4	2		6		12
	Jaramogi Oginga Odinga University of Science and Technology	0	0	0	2	1	3
	Jomo Kenyatta University of Agriculture & Technology	8	18	0	21	0	47
	Kenyatta University	1	4	0	15	0	20
	Kirinyaga University	0	0	0	1	8	9
	Kisii University	0	0	0	1	0	1
	Maasai Mara University	0	0	0	1	0	1
	Machakos University	0	0	0	3	5	8
	Masinde Muliro University of Science & Technology	3	4	0	6	0	13
	Meru University of Science & Technology	0	0	0	3	0	3
	Moi University	3	7	0	7	0	17
	Multimedia University of Kenya	0	2	0	3	2	7
	Murang'a University	0	1	0	4	3	8

Clusters	Programmes by Cluster and Academic Level in Public Chartered Universities						
	University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
	Pwani University	1	0	0	2	0	3
	Rongo University	0	0	0		4	4
	South Eastern Kenya University	0	0	0		5	5
	Taita Taveta University	0	0	0	1	0	1
	Technical University of Kenya	6	2	0	23	0	31
	Technical University of Mombasa	0	2	0	9	0	11
	University of Eldoret	0	0	0	3	0	3
	University of Kabianga	0	0	0	1	0	1
	University of Nairobi	8	20	3	14	1	46
	SUB TOTAL	37	71	4	141	33	286
Health and Welfare	Chuka University	2	3	0	5	0	10
	Dedan Kimathi University	0	0	0	3	0	3
	Egerton University	2	2	0	4	2	10
	Jaramogi Oginga Odinga University of Science and Technology	0	5	0	3	1	9
	Jomo Kenyatta University of Agriculture & Technology	7	21	0	19	0	47
	Karatina University	0	0	0	2	0	2
	Kenyatta University	2	18	2	12	0	34
	Kirinyaga University	0	0	0	3	1	4
	Kisii University	1	3	0	7	4	15
	Maasai Mara University	0	0	0	2	0	2
	Machakos University	0	0	0	3	0	3
	Maseno University	4	10	0	8	0	22
	Masinde Muliro University of Science & Technology	7	12	1	21	5	46
	Moi University	5	22	1	10	0	38
	Murang'a University	0	0	0	3	0	3
	Pwani University	5	3	0	4	0	12
	Rongo University	0	0	0	1	3	4
	South Eastern Kenya University	0	4	0	5	0	9
	Technical University of Mombasa	0	1	0	3	0	4
	University of Eldoret	0	1	0	0	0	1
University of Embu	0	0	0	2	0	2	

Clusters	Programmes by Cluster and Academic Level in Public Chartered Universities						
	University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
	University of Kabianga	0	0	0	4	2	6
	University of Nairobi	17	46	7	10	3	83
	SUB TOTAL	52	151	11	134	21	369
Information and Communication Technology	Chuka University	0	0	0	2	2	4
	Dedan Kimathi University	1	0	0	2	1	4
	Jaramogi Oginga Odinga University of Science and Technology	5	4	0	5	1	15
	Jomo Kenyatta University of Agriculture & Technology	3	6	0	5	0	14
	Karatina University	0	2	0	3	0	5
	Kenyatta University	1	2	0	6	0	9
	Kibabii University	1	1	0	2	1	5
	Kirinyaga University	0	0	0	3	2	5
	Kisii University	0	0	0	4	2	6
	Laikipia University	0	0	0	2	1	3
	Maasai Mara University	0	1	0	1	0	2
	Machakos University	0	0	0	3	1	4
	Maseno University	1	0	0	8	0	9
	Masinde Muliro University of Science & Technology	1	1	0	4	1	7
	Meru University of Science & Technology	0	0	0	6	0	6
	Moi University	0	0	0	1	0	1
	Multimedia University of Kenya	0	2	0	4	1	7
	Murang'a University	2	2	0	5	1	10
	Pwani University	1	0	0	1	0	2
	Rongo University	0	1	0	0	2	3
	South Eastern Kenya University	0	1	0	2	2	5
	Taita Taveta University	0	1	0	1	0	2
	Technical University of Kenya	1	0	0	2	0	3
	Technical University of Mombasa	0	0	0	2	0	2
	The Co-operative University of Kenya	0	0	0	4	0	4
	University of Eldoret	1	0	0	0	1	2
	University of Kabianga	0	0	0	3	2	5

Clusters	Programmes by Cluster and Academic Level in Public Chartered Universities						
	University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
	SUB TOTAL	18	24	0	81	21	144
Natural Sciences, Mathematics and Statistics	Chuka University	7	13	0	5	0	25
	Dedan Kimathi University	0	3	0	3	1	7
	Egerton University	8	16	0	11	2	41
	Garissa University	0	0	0	13	1	14
	Jaramogi Oginga Odinga University of Science and Technology	9	9	0	3	0	21
	Jomo Kenyatta University of Agriculture & Technology	11	25	0	32	0	68
	Karatina University	3	5	0	7	0	15
	Kenyatta University	6	22	1	15	0	44
	Kibabii University	3	4	0	5	0	12
	Kirinyaga University	0	0	0	3	0	3
	Kisii University	5	10	0	21	2	38
	Laikipia University	0	0	0	4	0	4
	Maasai Mara University	8	11	0	11	0	30
	Machakos University	0		1	7	1	9
	Maseno University	21	28	4	25	0	78
	Masinde Muliro University of Science & Technology	18	18	0	18	0	54
	Meru University of Science & Technology	3	5	0	10	0	18
	Moi University	8	7	0	14	0	29
	Multimedia University of Kenya	0	6	0	7	0	13
	Murang'a University	1	2	0	7	0	10
	Pwani University	15	16	0	15	0	46
	Rongo University	0	0	0	10	2	12
	South Eastern Kenya University	4	10	0	17	2	33
	Taita Taveta University		1	0	2	0	3
	Technical University of Kenya	7	4	0	16	0	27
	Technical University of Mombasa	2	5	0	10	0	17
	University of Eldoret	11	18	0	14	0	43
University of Embu	4	6	0	11	0	21	
University of Kabianga	0	6	0	6	1	13	
University of Nairobi	36	64	7	31	0	138	

Clusters	Programmes by Cluster and Academic Level in Public Chartered Universities						
	University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
	SUB TOTAL	190	314	13	353	12	886
Services	Chuka University	0	9	0	6	9	24
	Dedan Kimathi University	0	0	0	1	1	2
	Karatina University	0	2	0	3		5
	Maasai Mara University	0	0	0	3		3
	Machakos University	0	0	0	2	2	4
	University of Kabianga	0	0	0		1	1
	University of Nairobi	0	0	0		3	3
	SUB TOTAL	0	11	0	15	16	42
Social sciences, Journalism and Information	Chuka University	3	3	0	6	2	14
	Egerton University	7	12	1	12	4	36
	Garissa University	0	0	0	2	0	2
	Jaramogi Oginga Odinga University of Science and Technology	6	1	0		0	7
	Jomo Kenyatta University of Agriculture & Technology of Agriculture & Technology	6	12	0	10	0	28
	Karatina University	0	1	0		0	1
	Kenyatta University	10	18	3	9	0	40
	Kibabii University	0	0	0	1	0	1
	Kisii University	3	3	0		2	8
	Maasai Mara University	0	1	0	3	0	4
	Machakos University	1		0	1	1	3
	Maseno University	3	3	0	2	0	8
	Masinde Muliro University of Science & Technology of Science & Technology	4	7	0	3	1	15
	Moi University	3	8	0	4	0	15
	Multimedia University	0	2	0	3	3	8
	Murang'a University of Kenya	2	2	0	6	3	13
	Pwani University	0	0	0	1	0	1
	Rongo University	2	8	0	13	6	29
	Technical University of Kenya	2	2	0	14	0	18
	Technical University of Mombasa	1	2	0	8	0	11
The Co-operative University of Kenya	0	1	0	1	0	2	

Clusters	Programmes by Cluster and Academic Level in Public Chartered Universities						
	University	Doctorate	Masters	PGD	Bachelors	Diploma	Total
	University of Nairobi	2	0	0	9	7	18
	SUB TOTAL	55	86	4	108	29	282
GRAND TOTAL		725	1321	79	1578	294	3997

Annex 7: Programmes by Cluster and Academic Level in Public Universities Constituent Colleges

Programmes by Cluster and Academic Level in Public Universities Constituent Colleges							
Clusters	University	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
Agriculture, Forestry, Fisheries and Veterinary	Kaimosi Friends College University	0	0	0	1	0	1
	Tom Mboya University College	0	0	0	2	0	2
	Turkana University College	0	0	0	0	1	1
	SUB TOTAL	0	0	0	3	1	4
Arts and humanities	Bomet University College	0	0	0	4	0	4
	Kaimosi Friends College University	0	0	0	1	0	1
	Tharaka University College	1	5		1	0	7
	SUB TOTAL	1	5	0	6	0	12
Business, Administration and Law	Alupe University College	0	0	0	4	7	11
	Bomet University College	0	0	0	3	1	4
	Kaimosi Friends College University	0	0	0	1	1	2
	Tharaka University College	0	1	0	1	1	3
	Tom Mboya University College	0	1	0	2	1	4
	Turkana University College	0	2	0	3	1	6
	SUB TOTAL	0	4	0	14	12	30
Education	Alupe University College	0	0	0	3	1	4
	Bomet University College	0	0	0	2	0	2
	Kaimosi Friends College University	0	0	0	3	0	3
	Tharaka University College	0	1	0	1	0	2
	Tom Mboya University College	6	2	0	3	0	11
	Turkana University College	0	1	0	1	0	2
	SUB TOTAL	6	4	0	13	1	24
Health and Welfare	Alupe University College	0	0	0	3	0	3
	Turkana University College	0	0	0	0	2	2
	SUB TOTAL	0	0	0	3	2	5
Information and Communication Technology	Bomet University College	0	0	0	1	0	1
	Kaimosi Friends College University	0	0	0	1	1	2
	Tharaka University College	0	0	0	0	1	1
	Tom Mboya University College	0	0	0	1	0	1

Programmes by Cluster and Academic Level in Public Universities Constituent Colleges							
Clusters	University	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
	Turkana University College	0	0	0	0	1	1
	SUB TOTAL	0	0	0	3	3	6
Natural sciences, Mathematics and Statistics	Alupe University College	0	0	0	3	0	3
	Kaimosi Friends College University	0	0	0	3	0	3
	Tom Mboya University College	0	0	0	3	0	3
	Turkana University College	0	0	0	1	1	2
	SUB TOTAL	0	0	0	10	1	11
Social Sciences, Journalism and Information	Alupe University College	0	0	0	2	3	5
	Kaimosi Friends College University	0	0	0	3	2	5
	Tom Mboya University College	0	0	0	2	0	2
	SUB TOTAL	0	0	0	7	5	12
GRAND TOTAL		7	13	0	59	25	104

Annex 8: Programmes by Cluster and Academic Level in Private Chartered Universities

Programmes by Cluster and Academic Levels in Private Chartered Universities							
Cluster	Universities	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
Agriculture, Forestry, Fisheries and Veterinary	Africa Nazarene University	0	1	0	1	1	3
	Great Lakes University Of Kisumu	0	0	0	1	0	1
	Kenya Methodist University	1	1	0	1	2	5
	Mount Kenya University	0	0	0	3	0	3
	Scott Christian University	0	0	0	0	1	1
	University of Eastern Africa, Baraton	0	0	0	2	1	3
	SUB TOTAL	1	2	0	8	5	16
Arts and Humanities	Adventist University	2	6	0	0	0	8
	Africa International University	4	7	1	1	2	15
	Africa Nazarene University	2	1	1	3	2	9
	Catholic University of East Africa	0	9	0	11	4	24
	Daystar University	0	3	0	5	2	10
	Great Lakes University Of Kisumu	0		0	1	0	1
	Kabarak University	1	3	0	2	2	8
	KAG University	0	1	0	3	0	4

Programmes by Cluster and Academic Levels in Private Chartered Universities							
Cluster	Universities	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
	KCA University	0	0	0	5	0	5
	Kenya Highlands Evangelical	0	1	0	3	1	5
	Kenya Methodist University	2	4	0	5	9	20
	Mount Kenya University	0	11	0	6	0	17
	PAC University	1	3	0	5	3	12
	Scott Christian University	0	3	0	5	5	13
	St. Paul's University	1	3	0	2	0	6
	Strathmore University		1	0	3	0	4
	United States International University	1	0	0	2	0	3
	University of Eastern Africa, Baraton	0	0	0	12	2	14
	SUB TOTAL	14	56	2	74	32	178
Business, Administration and Law	Adventist University	0	1	0	0	0	1
	Africa International University	0	2	0	4	4	10
	Africa Nazarene University	0	2	0	4	2	8
	Catholic University of East Africa	0	1	0	2	4	7
	Daystar University	0	0	0	6	2	8
	Great Lakes University of Kisumu	0	1	0	2	0	3
	Kabarak University	3	5	0	11	12	31
	KAG University	0	0	0	2	0	2
	KCA University	0	0	0	9	0	9
	Kenya Highlands Evangelical	0	1	0	2	1	4
	Kenya Methodist University	1	2	0	3	2	8
	Mount Kenya University	1	2	1	7	0	11
	PAC University	1	2	1	2	2	8
	Scott Christian University	0	1	0	2	0	3
	St. Paul's University	1	4	0	3	0	8
	Strathmore University	2	6	0	3	0	11
	United States International University	1	2	0	6	0	9
	University of Eastern Africa, Baraton	0	1	0	5	0	6
	SUB TOTAL	10	33	2	73	29	147
Education	Africa International University	1	1	1	3	0	6
	Africa Nazarene University	0	1	0	1	1	3
	Catholic University of East Africa	0	1	0	1	2	4

Programmes by Cluster and Academic Levels in Private Chartered Universities							
Cluster	Universities	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
	Daystar University	0	0	1	3	1	5
	Great Lakes University of Kisumu	0	1	0	1	0	2
	Kabarak University	1	3	0	4	4	12
	KAG University	0	0	0	1	0	1
	KCA University	1	0	0	5	0	6
	Kenya Highlands Evangelical	0	0	0	2	0	2
	Kenya Methodist University	1	4	0	6	3	14
	Mount Kenya University	1	3	1	6	0	11
	Scott Christian University	0	1	0	2	1	4
	St. Paul's University	0	1	0	3	0	4
	Strathmore University	0	1	0	0	0	1
	University of Eastern Africa, Baraton	1	1	1	2	2	7
	SUB TOTAL	6	18	4	40	14	82
Engineering, manufacturing and Construction	Mount Kenya University	0	0	0	4	0	4
	University of Eastern Africa, Baraton	0	0	0	6	3	9
	SUB TOTAL	0	0	0	10	3	13
Health and Welfare	Adventist University	0	1	0	0	0	1
	Catholic University of East Africa	0	0	0	1	1	2
	Daystar University	0	0	0	2	0	2
	Great Lakes University of Kisumu	1	5	0	6	0	12
	Kabarak University	1	3	0	6	4	14
	Kenya Methodist University	1	5	0	11	4	21
	Mount Kenya University	0	4	0	15	0	19
	United States International University	0	0	0	2	0	2
	University of Eastern Africa, Baraton	0	3	0	3	3	9
SUB TOTAL	3	21	0	46	12	82	
Information and Communication Technology	Adventist University	0	1	0	0	0	1
	Africa Nazarene University	0	1	0	2	2	5
	Catholic University of East Africa	0	0	0	1	2	3
	Daystar University	0	0	0	0	1	1
	Great Lakes University of Kisumu	0	0	0	1	0	1
	Kabarak University	3	2	0	5	2	12
	KCA University	0	12	0	0	0	12

Programmes by Cluster and Academic Levels in Private Chartered Universities							
Cluster	Universities	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
	Kenya Highlands Evangelical	0	0	0	4	1	5
	Kenya Methodist University	0	3	0	2	2	7
	Mount Kenya University	0	0	0	3	0	3
	PAC University	0	0	0	1	1	2
	Scott Christian University	0	0	0	1	1	2
	St. Paul's University	0	0	0	3	0	3
	Strathmore University	0	2	0	3	0	5
	United States International University	0	1	0	2	0	3
	University of Eastern Africa, Baraton	0	0	0	3	1	4
	SUB TOTAL	3	22	0	31	13	69
Natural Sciences, Mathematics and Statistics	Catholic University of East Africa	0	1	0	2	0	3
	Daystar University	0	0	0	5	0	5
	Kabarak University	0	1	0	2	0	3
	Kenya Methodist University	0	0	0	2	1	3
	Mount Kenya University	0	0	0	6	0	6
	Strathmore University	0	5	0	1	0	6
	University of Eastern Africa, Baraton	0	1	0	4	0	5
	SUB TOTAL	0	8	0	22	1	31
Services	Mount Kenya University	0	0	0	3	0	3
	Strathmore University	0	0	0	2	0	2
	SUB TOTAL	0	0	0	5	0	5
Social sciences, Journalism and Information	Africa International University	0	1	0	2	3	6
	Africa Nazarene University	0	2	1	4	4	11
	Daystar University	2	6	1	10	6	25
	KAG University	0	0	0	1	0	1
	KCA University	0	0	1	0	0	1
	Kenya Highlands Evangelical	0	0	0	2	1	3
	Kenya Methodist University	0	0	0	1	1	2
	Mount Kenya University	0	3	0	7	0	10
	PAC University	0	0	0	1	2	3
	St. Paul's University	1	5	1	8	0	15
	Strathmore University	0	0	0	1	0	1
	United States International University	1	4	0	5	0	10
University of Eastern	0	0	0	2	1	3	

Programmes by Cluster and Academic Levels in Private Chartered Universities							
Cluster	Universities	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
	Africa, Baraton						
	SUB TOTAL	4	21	4	44	18	91
GRAND TOTAL		41	181	12	353	127	714

Annex 9: Programmes by Cluster and Academic Level in Private Universities Constituent Colleges

Programmes by Cluster and Academic Levels in Private Constituent Colleges							
Clusters	Universities	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Grand Total
Arts and Humanities	Hekima University	0	1	0	0	0	1
	Marist International University College	0	1	0	0	0	1
	Tangaza University College	0		0	5	0	5
	SUB TOTAL	0	2	0	5	0	7
Business, Administration and Law	Marist International University College	0	0	0	1	3	4
	Tangaza University College	0	0	0	1	0	1
	SUB TOTAL	0	0	0	2	3	5
Education	Marist International University College	0	0	0	1	1	2
	Tangaza University College	0	0	0	3	0	3
	SUB TOTAL	0	0	0	4	1	5
Health and Welfare	Uzima University College	0	0	0	4	3	7
	SUB TOTAL	0	0	0	4	3	7
Information and Communication Technology	Marist International University College	0	0	0	0	2	2
	SUB TOTAL	0	0	0	0	2	2
Social Sciences, Journalism and Information	Hekima University		1	1	1		3
	Marist International University College	0	0	0	0	5	5
	Tangaza University College	1	10	0	2		13
	SUB TOTAL	1	11	1	3	5	21
GRAND TOTAL		1	13	1	18	14	47

Annex 10: Programmes by Cluster and Academic Level in Private Universities with Letter of Interim Authority

Programmes by Cluster and Academic Level in Universities with Letter of Interim Authority							
Clusters	Universities	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
Arts and humanities	Gretsa University	0	0	0	1	10	11
	International Leadership University	0	4	0	1	0	5
	Management University of Africa	0	1	0	1	1	3
	Pioneer International University	0	0	0	1	0	1
	Presbyterian University of East Africa	0	0	0	1	4	5
	Riara University	0	0	0	1	0	1
	The East African University	0	0	0	0	6	6
	UMMA University	0	1	0	2	0	3
	SUB TOTAL	0	6	0	8	21	35
Business, Administration and Law	Gretsa University	0	0	0	1	1	2
	Kiriri Women's University of Science and Technology	0	0	0	1	5	6
	Management University of Africa	1	2	0	2	4	9
	Pioneer International University	0	0	0	1	0	1
	Presbyterian University of East Africa	0	1	0	1	2	4
	RAF International University	0	0	0	1	1	2
	Riara University	0	0	0	2	0	2
	The East African University	0	0	0	1	2	3
	UMMA University	0	0	0	1	0	1
	Zetech University	0	0	0	4	3	7
	SUB TOTAL	1	3	0	15	18	37
Education	Gretsa University	0	0	0	1	3	4

Programmes by Cluster and Academic Level in Universities with Letter of Interim Authority							
Clusters	Universities	Doctorate	Masters	Post Graduate Diploma	Bachelors	Diploma	Total
	Kiriri Women's University of Science and Technology	0	0	0	1	0	1
	Presbyterian University of East Africa	0	1	0	2	5	8
	RAF International University	0	0	0	1	0	1
	Riara University	0	0	0	1	0	1
	The East African University	0	0	0	1	2	3
	SUB TOTAL	0	1	0	7	10	18
Health and Welfare	Aga Khan University	0	1	0	1	1	3
	AMREF International University	0	0	0	2	0	2
	Gretsa University	0	0	0	0	6	6
	Presbyterian University of East Africa	0	0	0	0	2	2
	UMMA University	0	0	0	2	0	2
	SUB TOTAL	0	1	0	5	9	15
Information and Communication Technology	Gretsa University	0	0	0	1	3	4
	Kiriri Women's University of Science and Technology	0	0	0	2	2	4
	Management University of Africa	0	0	0		2	2
	Pioneer International University	0	0	0	1	0	1
	Presbyterian University of East Africa	0	0	0	1	2	3
	Riara University	0	0	0	2	0	2
	The East African University	0	0	0	2	2	4
	UMMA University	0	0	0	1	0	1
	Zetech University	0	0	0	2	1	3
	SUB TOTAL	0	0	0	12	12	24
Natural Sciences, Mathematics and Statistics	Kiriri Women's University of Science and Technology	0	0	0	1	0	1
	SUB TOTAL	0	0	0	1	0	1
Social Sciences, Journalism and Information	Aga Khan University	0	1	0	0	0	1
	Gretsa University	0	0	0	1	0	1
	Riara University	0	0	0	2	0	2
	Presbyterian University of East Africa	0	0	0	0	2	2
	Zetech University	0	0	0	1	2	3
	SUB TOTAL	0	1	0	4	4	9
GRAND TOTAL		1	12	0	57	74	144

Annex 11: Enrolment by Gender and Academic Level in Public Chartered Universities

UNIVERSITY	Doctorate		Masters		Postgraduate Diploma		Bachelors		Diploma		Total Male	Total Female	Grand Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female			
Chuka University	50	34	396	271	0	0	7393	4684	725	616	8564	5605	14169
Dedan Kimathi University	73	42	267	79	0	0	4268	1942	228	161	4836	2224	7060
Egerton University	43	39	109	87	0	0	8744	6766	106	163	9002	7055	16057
Garissa University	6	0	23	13	0	0	640	239	198	73	867	325	1192
Jaramogi Oginga Odinga University of Science and Technology	260	141	604	333	0	0	5030	2974	560	629	6454	4077	10531
Jomo Kenyatta University of Agriculture and Technology	1603	946	4894	3677	50	57	18781	13278	1979	1691	27307	19649	46956
Karatina University	72	44	129	122	0	0	3373	2522	0	0	3574	2688	6262
Kenyatta University	463	390	6433	5561	233	165	26177	23102	0	0	33306	29218	62524
Kibabii University	63	44	424	423	93	86	4256	2987	24	6	4860	3546	8406
Kirinyaga University	3	2	0	0	0	0	1375	983	258	122	1636	1107	2743
Kisii University	3736	2449	6242	4835	12	12	1079	526	1294	1328	12363	9150	21513
Laikipia University	55	25	182	137	0	0	4012	3408	196	207	4445	3777	8222
Maasai Mara University	51	91	223	119	0	0	5153	4469	338	260	5765	4939	10704
Machakos University	15	24	46	53	0	0	4557	2949	311	239	4929	3265	8194
Maseno University	2434	1871	487	317	59	51	6420	5039	0	0	9400	7278	16678
Masinde Muliro University of Science and Technology	436	202	472	293	27	27	10641	7119	532	545	12108	8186	20294
Meru University of Science and	2	2	25	32	0	0	3164	1598	0	0	3191	1632	4823
Moi University	175	104	504	304	0	0	18718	16158	0	0	19397	16566	35963
Multimedia University of Kenya	0	0	14	6	0	0	2930	1712	420	430	3364	2148	5512
Muranga University of Science and Technology	13	13	22	16	0	0	1974	1165	106	66	2115	1260	3375
Pwani University	5	4	28	23	0	0	3752	2825	0	0	3785	2852	6637
Rongo University	60	27	91	60	0	0	3054	2362	287	283	3492	2732	6224
South Eastern Kenya University	47	38	239	175	0	0	3969	2609	18	8	4273	2830	7103
Taita Taveta University	0	0	18	9	0	0	1107	519	0	0	1125	528	1653
Technical University of Kenya	19	6	27	18	0	0	7523	2831	0	0	7569	2855	10424
Technical University of Mombasa	0	2	41	12	0	0	5335	2153	0	0	5376	2167	7543
The Co-operative University of Kenya	0	0	52	31	0	0	1415	1645	0	0	1467	1676	3143
University of Eldoret	7	1	37	28	0	0	7490	6042	0	0	7534	6071	13605
University of Embu	28	19	69	54	0	0	3032	2286	19	27	3148	2386	5534
University of Kabianga	22	6	108	78	0	0	4007	3489	392	318	4529	3891	8420
University of Nairobi	986	306	7601	3908	169	31	34779	20056	3330	444	46865	24745	71610
Grand Total	10727	6872	29807	21074	643	429	214148	150437	11321	7616	266646	186428	453074

Annex 12: Enrolment by Gender and Academic Level in Public Constituent Colleges

UNIVERSITY	Doctorate		Masters		Bachelors		Diploma		Total Male	Total Female	Grand Total
	Male	Female	Male	Female	Male	Female	Male	Female			
Alupe University College	0	0	0	0	162	127	2	1	164	128	292
Bomet University College	0	0	0	0	211	223	5	2	216	225	441
Kaimosi Friends University College	0	0	0	0	934	747	17	27	951	774	1725
Tharaka University College	5	2	26	21	30	35	43	25	104	83	187
Tom Mboya University College	11	2	9	3	501	337	13	20	534	362	896
Turkana University College	0	0	18	2	148	60	62	19	228	81	309
Grand Total	16	4	53	26	1986	1529	142	94	2197	1653	3850

Annex 13: Enrolment by Gender and Academic Level in Private Chartered Universities

University	Doctorate		Masters		Postgraduate Diploma		Bachelors		Diploma		Total Male	Total Female	Grand Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female			
Adventist University of Africa	110	13	484	43	0	0	0	0	0	0	594	56	650
Africa International University	37	13	171	68	5	3	416	259	24	49	653	392	1045
Africa Nazarene University	18	2	228	225	9	11	942	1350	199	291	1396	1879	3275
Catholic University of Eastern Africa	113	67	353	396	8	12	2339	2516	140	136	2953	3127	6080
Daystar University	17	52	208	480	0	0	1469	2231	137	178	1831	2941	4772
Great Lake University of Kisumu	1	3	45	46	0	0	527	444	0	0	573	493	1066
Kabarak University	77	53	47	44	0	0	3443	2963	343	308	3910	3368	7278
KAG University	0	0	40	13	0	0	110	77	0	0	150	90	240
KCA University	0	0	399	262	9	1	3727	2789	0	0	4135	3052	7187
Kenya Highlands Evangelical	0	0	11	3	0	0	315	242	30	64	356	309	665
Kenya Methodist University	903	794	1392	1314	0	0	2283	1739	0	0	4578	3847	8425
Mount Kenya University	16	5	530	298	184	97	15513	11292	0	0	16243	11692	27935
Pan Africa Christian University	46	49	73	79	2	2	287	241	569	903	977	1274	2251
Scott Christian University	0	0	30	13	0	0	282	226	33	18	345	257	602
St Pauls University	24	18	78	71	0	0	1574	2016	0	0	1676	2105	3781
Strathmore University	34	25	508	395	0	0	2116	2174	0	0	2658	2594	5252
United States International University	47	77	611	936	0	0	2803	2837	0	0	3461	3850	7311
University of Eastern Africa, Baraton	27	12	38	34	0	0	1337	1297	90	79	1492	1422	2914
Grand Total	1470	1183	5246	4720	217	126	39483	34693	1565	2026	47981	42748	90729

Annex 14: Enrolment by Gender and Academic Level in Private Constituent Colleges

	Doctorate		Masters		Postgraduate Diploma		Bachelors		Diploma		Total	Total	Grand
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
UNIVERSITY													
Hekima University College	0	0	15	5	1	0	116	3	0	0	132	8	140
Marist International University College	0	0	17	10	0	0	178	111	123	126	318	247	565
Tangaza University College	46	22	130	129	0	0	739	288	0	0	915	439	1354
Uzima university	0	0	0	0	0	0	277	209	60	56	337	265	602
Grand Total	46	22	162	144	1	0	1310	611	183	182	1702	959	2661

Annex 15: Enrolment by Gender and Academic Level in Institutions with Letters of Interim Authority

UNIVERSITY	Bachelors		Diploma		Doctorate		Masters		Total Male	Total Female	Grand Total
	Male	Female	Male	Female	Male	Female	Male	Female			
Aga Khan University	7	58	5	24	0	0	73	67	85	149	234
AMREF International University	3	6	0	0	0	0	0	0	3	6	9
GRETSA University	522	488	398	424	0	0	0	0	920	912	1832
International Leadership University	0	0	0	0	0	0	0	0	0	0	0
Kiriri Women's University of Science and Technology	0	1753	0	984	0	0	0	0	0	2737	2737
Lukenya University	331	299	0	0	0	0	0	0	331	299	630
Management University of Africa	1108	1183	28	22	72	29	172	120	1380	1354	2734
Pioneer International University	312	258	0	0	0	0	0	0	312	258	570
Presbyterian University of East Africa	349	373	72	77	0	0	0	0	421	450	871
RAF International University	26	18	5	7	0	0	0	0	31	25	56
Riara University	1114	0	0	0	0	0	0	0	1114	0	1114
The East African University	482	265	35	41	0	0	0	0	517	306	823
UMMA UNIVERSITY	467	216	0	0	0	0	3	20	470	236	706
Zetech University	579	412	670	754	0	0	0	0	1249	1166	2415
Grand Total	5300	5329	1213	2333	72	29	248	207	6833	7898	14731

Annex 16: Enrolment by Cluster in Public and Private Universities

Cluster	Public Chartered University	Public Constituent University Colleges	Private Chartered University	Private Constituent University Colleges	LIA	Grand Total	Proportion
Agriculture, Forestry, Fisheries and Veterinary	28346	72	545	0	43	29006	5%
Arts and Humanities	32638	34	3985	701	923	38281	7%
Business and Administration	97763	923	28001	269	7246	134202	24%
Law	3756	0	3165	0	308	7229	1%
Education	99734	2039	19108	483	1194	122558	22%
Engineering, Manufacturing and Construction	29647	17	686	0	0	30350	5%
Health and Welfare	29817	56	8145	602	531	39151	7%
Information and Communication Technology	25016	118	8825	19	2474	36452	6%
Natural Sciences, Mathematics and Statistics	47566	219	1753	0	133	49671	9%
Services	9902	24	950	0	863	11739	2%

Social Sciences, Journalism and Information	48889	348	15566	587	1016	66406	12%
GRAND TOTAL	453074	3850	90729	2661	14731	565045	100%

Annex 17: Enrolment of Students in Universities by County

UNIVERSITIES (PUBLIC AND PRIVATE)								
	COUNTY	M	%	F	%	T	%	Ratio(M/F)
1	BARINGO	2831	1.4	3108	1.5	5939	1.4	0.91
2	BOMET	4569	2.2	3987	2.0	8556	2.1	1.15
3	BUNGOMA	7464	3.6	6555	3.2	14019	3.4	1.14
4	BUSIA	3426	1.6	2558	1.3	5984	1.5	1.34
5	ELGEYO/MARAKWET	2285	1.1	1881	0.9	4166	1.0	1.21
6	EMBU	3069	1.5	2652	1.3	5721	1.4	1.16
7	HOMA BAY	5302	2.5	3428	1.7	8730	2.1	1.55
8	KAJIADO	2096	1.0	1888	0.9	3984	1.0	1.11
9	KAKAMEGA	5853	2.8	5045	2.5	10898	2.7	1.16

10	KERICHO	4917	2.4	5403	2.7	10320	2.5	0.91
11	KIAMBU	6096	2.9	5437	2.7	11533	2.8	1.12
12	KIRINYAGA	2363	1.1	2878	1.4	5241	1.3	0.82
13	KISII	9929	4.8	8838	4.4	18767	4.6	1.12
14	KISUMU	6132	2.9	5921	2.9	12053	2.9	1.04
15	KITUI	4347	2.1	4231	2.1	8578	2.1	1.03
16	LAIKIPIA	1957	0.9	2212	1.1	4169	1.0	0.88
17	MACHAKOS	6122	2.9	9650	4.8	15772	3.8	0.63
18	MAKUENI	3953	1.9	3781	1.9	7734	1.9	1.05
19	MERU	5730	2.8	4587	2.3	10317	2.5	1.25
20	MIGORI	3821	1.8	3764	1.9	7585	1.8	1.02
21	MOMBASA	4016	1.9	2654	1.3	6670	1.6	1.51
22	MURANG'A	4037	1.9	3415	1.7	7452	1.8	1.18
23	NAIROBI CITY	45723	22.0	39125	19.3	84848	20.6	1.17
24	NAKURU	7272	3.5	6457	3.2	13729	3.3	1.13
25	NANDI	4548	2.2	6179	3.0	10727	2.6	0.74
26	NAROK	4137	2.0	3784	1.9	7921	1.9	1.09
27	NYAMIRA	4217	2.0	3886	1.9	8103	2.0	1.09
28	NYANDARUA	2417	1.2	2597	1.3	5014	1.2	0.93
29	NYERI	3724	1.8	3755	1.9	7479	1.8	0.99
30	SIAYA	4617	2.2	3626	1.8	8243	2.0	1.27
31	THARAKA-NITHI	3280	1.6	3189	1.6	6469	1.6	1.03
32	TRANS NZOIA	3686	1.8	3803	1.9	7489	1.8	0.97
33	UASIN GISHU	6573	3.2	5111	2.5	11684	2.8	1.29
34	VIHIGA	2850	1.4	3038	1.5	5888	1.4	0.94
35	WEST POKOT	3204	1.5	7540	3.7	10744	2.6	0.42
	TOTALS	208269	100.0	202686	100.0	410955	100.0	1.03

Annex 18: Enrolment of Students in Public Universities by County

PUBLIC UNIVERSITIES								
No	COUNTY	M	%	F	%	T	%	Ratio(M/F)
1	BARINGO	2360	1.4	2621	1.5	4981	1.5	0.90
2	BOMET	3947	2.3	3371	2.0	7318	2.1	1.17
3	BUNGOMA	6780	3.9	5878	3.5	12658	3.7	1.15
4	BUSIA	3014	1.7	2203	1.3	5217	1.5	1.37
5	ELGEYO/MARAKWET	2072	1.2	1705	1.0	3777	1.1	1.22
6	EMBU	2652	1.5	2078	1.2	4730	1.4	1.28
7	HOMA BAY	4869	2.8	3032	1.8	7901	2.3	1.61

8	KAKAMEGA	5152	3.0	4366	2.6	9518	2.8	1.18
9	KERICHO	4179	2.4	4676	2.8	8855	2.6	0.89
10	KIAMBU	4171	2.4	3227	1.9	7398	2.2	1.29
11	KIRINYAGA	2001	1.2	2437	1.4	4438	1.3	0.82
12	KISII	9081	5.2	8109	4.8	17190	5.0	1.12
13	KISUMU	5136	3.0	5038	3.0	10174	3.0	1.02
14	KITUI	3624	2.1	3517	2.1	7141	2.1	1.03
15	KWALE	1142	0.7	2294	1.4	3436	1.0	0.50
16	LAIKIPIA	1732	1.0	1944	1.1	3676	1.1	0.89
17	MACHAKOS	5170	3.0	8633	5.1	13803	4.0	0.60
18	MAKUENI	3257	1.9	3074	1.8	6331	1.8	1.06
19	MERU	5073	2.9	3829	2.3	8902	2.6	1.32
20	MIGORI	3510	2.0	3469	2.0	6979	2.0	1.01
21	MOMBASA	3290	1.9	1879	1.1	5169	1.5	1.75
22	MURANG'A	3459	2.0	2750	1.6	6209	1.8	1.26
23	NAIROBI CITY	33872	19.5	29295	17.3	63167	18.4	1.16
24	NAKURU	5521	3.2	4552	2.7	10073	2.9	1.21
25	NANDI	4173	2.4	5779	3.4	9952	2.9	0.72
26	NAROK	3772	2.2	3400	2.0	7172	2.1	1.11
27	NYAMIRA	3873	2.2	3589	2.1	7462	2.2	1.08
28	NYANDARUA	2140	1.2	2256	1.3	4396	1.3	0.95
29	NYERI	3215	1.9	3022	1.8	6237	1.8	1.06
30	SIAYA	4076	2.4	3173	1.9	7249	2.1	1.28
31	THARAKA-NITHI	3113	1.8	2981	1.8	6094	1.8	1.04
32	TRANS NZOIA	3209	1.9	3355	2.0	6564	1.9	0.96
33	UASIN GISHU	5967	3.4	4444	2.6	10411	3.0	1.34
34	VIHIGA	2608	1.5	2750	1.6	5358	1.6	0.95
35	WEST POKOT	3065	1.8	7411	4.4	10476	3.1	0.41
	TOTALS	173418	100.0	169559	100.0	342977	100.0	1.02

Annex 19: Enrolment of Students in Private Universities by County

PRIVATE UNIVERSITIES								
		M	%	F	%	T	%	Ratio(M/F)
1	BARINGO	471	1.4	487	1.5	958	1.4	1.0
2	BOMET	622	1.8	616	1.9	1238	1.8	1.0
3	BUNGOMA	684	2.0	677	2.0	1361	2.0	1.0
4	BUSIA	412	1.2	355	1.1	767	1.1	1.2
5	EMBU	417	1.2	574	1.7	991	1.5	0.7

6	GARISSA	639	1.8	482	1.5	1121	1.6	1.3
7	HOMA BAY	433	1.2	396	1.2	829	1.2	1.1
8	KAJIADO	796	2.3	793	2.4	1589	2.3	1.0
9	KAKAMEGA	701	2.0	679	2.0	1380	2.0	1.0
10	KERICHO	738	2.1	727	2.2	1465	2.2	1.0
11	KIAMBU	1925	5.5	2210	6.7	4135	6.1	0.9
12	KIRINYAGA	362	1.0	441	1.3	803	1.2	0.8
13	KISII	848	2.4	729	2.2	1577	2.3	1.2
14	KISUMU	996	2.9	883	2.7	1879	2.8	1.1
15	KITUI	723	2.1	714	2.2	1437	2.1	1.0
16	MACHAKOS	952	2.7	1017	3.1	1969	2.9	0.9
17	MAKUENI	696	2.0	707	2.1	1403	2.1	1.0
18	MANDERA	396	1.1	168	0.5	564	0.8	2.4
19	MARSABIT	194	0.6	128	0.4	322	0.5	1.5
20	MERU	657	1.9	758	2.3	1415	2.1	0.9
21	MIGORI	311	0.9	295	0.9	606	0.9	1.1
22	MOMBASA	726	2.1	775	2.3	1501	2.2	0.9
23	MURANG'A	578	1.7	665	2.0	1243	1.8	0.9
24	NAIROBI CITY	11851	34.0	9830	29.7	21681	31.9	1.2
25	NAKURU	1751	5.0	1905	5.8	3656	5.4	0.9
26	NANDI	375	1.1	400	1.2	775	1.1	0.9
27	NAROK	365	1.0	384	1.2	749	1.1	1.0
28	NYAMIRA	344	1.0	297	0.9	641	0.9	1.2
29	NYANDARUA	277	0.8	341	1.0	618	0.9	0.8
30	NYERI	509	1.5	733	2.2	1242	1.8	0.7
31	SAMBURU	101	0.3	97	0.3	198	0.3	1.0
32	SIAYA	541	1.6	453	1.4	994	1.5	1.2
33	THARAKA-NITHI	167	0.5	208	0.6	375	0.6	0.8
34	TRANS NZOIA	477	1.4	448	1.4	925	1.4	1.1
35	UASIN GISHU	606	1.7	667	2.0	1273	1.9	0.9
36	WAJIR	375	1.1	279	0.8	654	1.0	1.3
37	WEST POKOT	139	0.4	129	0.4	268	0.4	1.1
	TOTALS	34851	100.0	33127	100.0	67978	100.0	1.1

Annex 20: Enrolment of International Students in Public and Private Universities

UNIVERSITIES							
No.	COUNTRY	M	%	F	%	T	%
1	Aruba	14	0.26	4	0.07	18	0.34
2	Austria	2	0.04	1	0.02	3	0.06
3	Benin	8	0.15	1	0.02	9	0.17

4	Bhutan	93	1.73	26	0.48	119	2.21
5	Botswana	27	0.50	5	0.09	32	0.60
6	Brazil	1	0.02	1	0.02	2	0.04
7	Burkina Faso	9	0.17	4	0.07	13	0.24
8	Burundi	96	1.79	101	1.88	197	3.67
9	Cameroon	162	3.02	47	0.87	209	3.89
10	Canada	2	0.04	5	0.09	7	0.13
11	Central African Republic	5	0.09	0	0.00	5	0.09
12	Chad	10	0.19	2	0.04	12	0.22
13	China	2	0.04	2	0.04	4	0.07
14	Comoros	2	0.04	0	0.00	2	0.04
15	Congo, Democratic Republic of the	318	5.92	212	3.95	530	9.86
16	Cote d'Ivoire	19	0.35	0	0.00	19	0.35
17	Denmark	0	0.00	3	0.06	3	0.06
18	Djibouti	3	0.06	0	0.00	3	0.06
19	Ecuador	2	0.04	0	0.00	2	0.04
20	Egypt	2	0.04	0	0.00	2	0.04
21	Equatorial Guinea	2	0.04	0	0.00	2	0.04
22	Eritrea	10	0.19	7	0.13	17	0.32
23	Ethiopia	65	1.21	15	0.28	80	1.49
24	France	15	0.28	9	0.17	24	0.45
25	Gabon	5	0.09	0	0.00	5	0.09
26	Gambia, The Republic	7	0.13	0	0.00	7	0.13
27	Gaza Strip	2	0.04	0	0.00	2	0.04
28	Germany	3	0.06	1	0.02	4	0.07
29	Ghana	97	1.81	19	0.35	116	2.16
30	Greenland	26	0.48	19	0.35	45	0.84
31	India	86	1.60	40	0.74	126	2.35
32	Italy	5	0.09	2	0.04	7	0.13
33	Jordan	3	0.06	1	0.02	4	0.07
34	Kenya	106	1.97	12	0.22	118	2.20
35	Korea, North	5	0.09	2	0.04	7	0.13
36	Liberia	19	0.35	3	0.06	22	0.41
37	Madagascar	78	1.45	2	0.04	80	1.49
38	Malawi	144	2.68	79	1.47	223	4.15
39	Malaysia	5	0.09	2	0.04	7	0.13
40	Mozambique	26	0.48	5	0.09	31	0.58
41	Namibia	9	0.17	3	0.06	12	0.22
42	Netherlands	3	0.06	0	0.00	3	0.06
43	New Zealand	1	0.02	0	0.00	1	0.02

44	Niger	13	0.24	0	0.00	13	0.24
45	Nigeria	286	5.32	88	1.64	374	6.96
46	Philippines	10	0.19	5	0.09	15	0.28
47	Rwanda	241	4.49	203	3.78	444	8.26
48	Sierra Leone	22	0.41	1	0.02	23	0.43
49	Somalia	171	3.18	39	0.73	210	3.91
50	South Africa	31	0.58	6	0.11	37	0.69
51	Sudan	270	5.03	137	2.55	407	7.57
52	South Sudan	228	4.24	33	0.61	261	4.86
53	Tanzania	324	6.03	261	4.86	585	10.89
54	Togo	26	0.48	1	0.02	27	0.50
55	Turkey	1	0.02	0	0.00	1	0.02
56	Uganda	292	5.43	174	3.24	466	8.67
57	Zambia	126	2.35	32	0.60	158	2.94
58	Zimbabwe	94	1.75	52	0.97	146	2.72
	Totals	3685	68.58	1688	31.42	5373	100.00

Annex 21: Enrolment of International Students in Public Universities

No.	Country	M	%	F	%	T	%
1	Austria	2	0.10	1	0.05	3	0.15

2	Bhutan	87	4.48	26	1.34	113	5.82
3	Botswana	5	0.26	1	0.05	6	0.31
4	Burundi	19	0.98	7	0.36	26	1.34
5	Cameroon	34	1.75	12	0.62	46	2.37
6	Canada	1	0.05	4	0.21	5	0.26
7	China	1	0.05	1	0.05	2	0.10
8	Congo, Democratic Republic of the	40	2.06	11	0.57	51	2.63
9	Eritrea	3	0.15	2	0.10	5	0.26
10	Ethiopia	17	0.88	6	0.31	23	1.18
11	France	2	0.10	1	0.05	3	0.15
12	Gambia, The	2	0.10	0	0.00	2	0.10
13	Germany	2	0.10	1	0.05	3	0.15
14	Ghana	10	0.52	1	0.05	11	0.57
15	Greenland	18	0.93	17	0.88	35	1.80
16	India	4	0.21	2	0.10	6	0.31
17	Jordan	2	0.10	0	0.00	2	0.10
18	Korea, North	5	0.26	2	0.10	7	0.36
19	Liberia	4	0.21	1	0.05	5	0.26
20	Malawi	39	2.01	26	1.34	65	3.35
21	Malaysia	1	0.05	1	0.05	2	0.10
22	Mali	8	0.41	2	0.10	10	0.52
23	Mozambique	2	0.10	0	0.00	2	0.10
24	Nigeria	81	4.17	32	1.65	113	5.82
25	Rwanda	60	3.09	41	2.11	101	5.20
26	Sierra Leone	3	0.15	1	0.05	4	0.21
27	Somalia	105	5.41	14	0.72	119	6.13
28	sudan	31	1.60	5	0.26	36	1.85
29	South Sudan	144	7.42	21	1.08	165	8.50
30	Swaziland	2	0.10	0	0.00	2	0.10
31	Tanzania	65	3.35	43	2.22	108	5.56
32	Uganda	55	2.83	30	1.55	85	4.38
33	Zambia	2	0.10	5	0.26	7	0.36
34	Zimbabwe	2	0.10	3	0.15	5	0.26
	Total	1442	74.29	499	25.71	1941	100

Annex 22: Enrolment of International Students in Private Universities

No.	Country	M	%	F	%	T	%
1	Aruba	14	0.33	4	0.10	18	0.43
2	Benin	8	0.19	1	0.02	9	0.22
3	Bhutan	6	0.14	0	0.00	6	0.14
4	Botswana	22	0.53	4	0.10	26	0.62
5	Burkina Faso	9	0.22	4	0.10	13	0.31
6	Burundi	77	1.84	94	2.25	171	4.09
7	Cameroon	128	3.06	35	0.84	163	3.90
8	Central African Republic	5	0.12	0	0.00	5	0.12
9	Chad	10	0.24	2	0.05	12	0.29
10	Congo, Democratic Republic of the	278	6.64	201	4.80	479	11.45
11	Cote d'Ivoire	18	0.43	0	0.00	18	0.43
12	Eritrea	7	0.17	5	0.12	12	0.29
13	Ethiopia	48	1.15	9	0.22	57	1.36
14	France	13	0.31	8	0.19	21	0.50
15	Gabon	5	0.12	0	0.00	5	0.12
16	Gambia, The	5	0.12	0	0.00	5	0.12
17	Ghana	87	2.08	18	0.43	105	2.51
18	Greenland	8	0.19	2	0.05	10	0.24
19	India	82	1.96	38	0.91	120	2.87
20	Italy	4	0.10	2	0.05	6	0.14
21	Kenya	106	2.53	12	0.29	118	2.82
22	Liberia	15	0.36	2	0.05	17	0.41
23	Madagascar	78	1.86	2	0.05	80	1.91
24	Malawi	105	2.51	53	1.27	158	3.78
25	Malaysia	4	0.10	1	0.02	5	0.12
26	Mozambique	24	0.57	5	0.12	29	0.69
27	Namibia	9	0.22	2	0.05	11	0.26
28	Niger	13	0.31	0	0.00	13	0.31
29	Nigeria	205	4.90	56	1.34	261	6.24
30	Philippines	10	0.24	5	0.12	15	0.36
31	Rwanda	181	4.33	162	3.87	343	8.20
32	Sierra Leone	19	0.45	0	0.00	19	0.45
33	Somalia	66	1.58	25	0.60	91	2.17
34	South Africa	31	0.74	6	0.14	37	0.88
35	Sudan	239	5.71	132	3.15	371	8.87
36	South Sudan	84	2.01	12	0.29	96	2.29
37	Tanzania	259	6.19	218	5.21	477	11.40
38	Togo	26	0.62	1	0.02	27	0.65
39	Uganda	237	5.66	144	3.44	381	9.11
40	United Kingdom	8	0.19	1	0.02	9	0.22
41	United States of America	4	0.10	6	0.14	10	0.24
42	Zambia	124	2.96	27	0.65	151	3.61
43	Zimbabwe	92	2.20	49	1.17	141	3.37

Totals	2821	67.42	1363	32.58	4184	100
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Annex 23: Research Outputs from Public Chartered Universities

University	Publications	Innovations	Patents	Total
University of Nairobi	2,244	134	25	2,403
University of Kabianga	60	0	0	60
University of Embu	62	0	0	62
University of Eldoret	126	0	0	126
The Cooperative University of Kenya	25	2	0	27
Technical University of Mombasa	36	7	7	50
South Eastern Kenya University	108	0	0	108
Chuka University	42	0	0	42
Dedan Kimathi University of Technology	88	42	2	132
Egerton University	71	9	0	80
Garissa University	12	0	0	12
Jaramogi Oginga Odinga University of Science and Technology	213	7	1	221
Karatina University	99	1	0	100
Kibabii University	112	7	0	119
Kenyatta University	199	36	4	239
Kirinyaga University	19	0	0	19
Laikipia University	24	1	0	25
Maasai Mara University	260	0	0	260
Machakos University	35	3	0	38
Maseno University	0	2	0	2
Masinde Muliro University of Science and Technology	76	11	3	90
Meru University	32	4	0	36
Moi University	324	5	0	329
Multimedia University	21	0	0	21
Muranga University of Technology	50	0	0	50
Pwani University	46	0	0	46
Technical University of Kenya	81	3	0	84
TOTAL	4,465	274	42	4,781

Annex 24: Research Outputs from Private Chartered Universities

University	Publications	Innovations	Patents	Total
Adventist University	0	0	0	0
African International University	42	1	0	43
African Nazarene University	63	3	0	66
Catholic University of Eastern Africa	117	0	0	117
Daystar University	57	0	0	57
Great Lakes University	4	0	0	4
Kabarak University	47	2	0	49
KAG East University	0	0	0	0
KCA University	27	0	0	27
Kenya Highlands Evangelical University	11	0	0	11
Kenya Methodist University	0	0	0	0
Mount Kenya University	207	5	2	214
Pan Africa Christian University	24	0	0	24
Scott Christian University	1	0	0	1
St. Paul's University	60	0	0	60
Strathmore University	75	68	0	143
United States International University-Africa	352	0	0	352
University of Eastern Africa, Baraton	68	38	0	106
Total	1,155	117	2	1274

Annex 25: Research Outputs from Universities with Letters of Interim Authority

University	Publication	Innovation	Patent	Total
Aga Khan University	121	0	0	121
AMREF International University	0	0	0	0
Gretsa University	37	0	0	37
International Leadership University	2	0	0	2
Kiriri Women's University of Science and Technology	31	0	0	31
Lukenya University	146	0	0	146
Management University of Africa	28	0	0	28
Pioneer University	0	0	0	0
Presbyterian University of East Africa	0	0	0	0
RAF University	1	0	0	1
Riara University	7	0	0	7
The East African University	121	0	0	121
Umma University	36	0	0	36
Zetech University	77	0	0	77
Total	607	0	0	607

Annex 26: Graduation in Public Chartered Universities

Public Chartered Universities	Gender		Total	Percent
	Male	Female		
Chuka University	1092	890	1982	3
The Cooperative University of Kenya	203	221	424	1
Dedan Kimathi University of Technology	933	461	1394	2
Egerton University	2583	1931	4514	7
Garissa University	14	2	16	0
Jaramogi Oginga Odinga University of Science & Technology	730	478	1208	2
Jomo Kenyatta University of Agriculture & Technology	3556	2718	6274	10
Kenyatta University	4291	3013	7304	12
Kibabii University	502	389	891	1
Kirinyaga University	182	94	276	3
Kisii University	1855	1628	3483	6
Laikipia University	919	741	1660	3
Maasai Mara University	674	525	1199	2
Machakos University	194	111	305	0
Maseno University	1786	1243	3029	5
Masinde Muliro University of Science & Technology	1425	1051	2476	4
Meru University of Science & Technology	389	380	769	1
Moi University	1225	1481	2706	4
Multimedia University	389	261	650	1
Murang'a University of Technology	141	108	249	0
Pwani University	504	329	833	1
Rongo University	575	358	933	2
South Eastern Kenya University	572	491	1063	2
Technical University of Kenya	956	467	1423	2
Technical University of Mombasa	768	322	1090	2
University of Eldoret	1954	1632	3586	6
University of Embu	151	113	264	0
University of Kabianga	866	629	1495	2
University of Nairobi	5369	3416	8785	14
Total	34798	25483	60281	100

Annex 27: Graduations by award in Public Chartered Universities

Public Chartered Universities	Graduation award				Total
	Bachelors	PGD	Masters	PhD	
Chuka University	1951	13	16	2	1982
The Cooperative University of Kenya	424	0	0	0	424
Dedan Kimathi University of Technology	1368	0	20	6	1394
Egerton University	4373	0	123	18	4514
Garissa University	8	0	8	0	16
Jaramogi Oginga Odinga University of Science & Technology	1125	0	60	23	1208
Jomo Kenyatta University of Agriculture & Technology	4766	0	1347	161	6274
Kenyatta University	6446	0	792	66	7304
Kibabii University	876	0	14	1	891
Kirinyaga University	276	0	0	0	276
Kisii University	3332	39	103	9	3483
Laikipia University	1633	9	13	5	1660
Maasai Mara University	1180	0	13	6	1199
Machakos University	300	0	5	0	305
Maseno University	2777	0	204	48	3029
Masinde Muliro University of Science & Technology	2402	1	43	30	2476
Meru University of Science & Technology	762	0	7	0	769
Moi University	2670	0	29	7	2706
Multimedia University	650	0	0	0	650
Murang'a University of Technology	242	0	7	0	249
Pwani University	788	0	36	9	833
Rongo University	922	0	6	5	933
South Eastern Kenya University	1033	0	29	1	1063
Technical University of Kenya	1423	0	0	0	1423
Technical University of Mombasa	1076	0	14	0	1090
University of Eldoret	3520	4	46	16	3586
University of Embu	253	0	11	0	264
University of Kabianga	1473	0	22	0	1495
University of Nairobi	6339	0	2337	109	8785
Total	54388	66	5305	522	60281

Annex 28: Graduations by Grade of Award in Public Chartered Universities

Public Chartered Universities	Grade of award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Chuka University	75	124	1247	525	11	1982
The Cooperative University of Kenya	0	4	225	195	0	424
Dedan Kimathi University of Technology	59	33	555	701	46	1394
Egerton University	262	145	2069	1937	101	4514
Garissa University	8	0	6	2	0	16
Jaramogi Oginga Odinga University of Science & Technology	83	24	620	474	7	1208
Jomo Kenyatta University of Agriculture & Technology	1983	257	2045	1770	219	6274
Kenyatta University	1057	93	3227	2886	41	7304
Kibabii University	15	11	556	307	2	891
Kirinyaga University	3	17	191	62	3	276
Kisii University	204	43	2458	775	3	3483
Laikipia University	27	48	1129	448	8	1660
Maasai Mara University	19	31	813	336	0	1199
Machakos University	5	10	183	107	0	305
Maseno University	252	63	1738	953	23	3029
Masinde Muliro University of Science & Technology	250	164	949	1075	38	2476
Meru University of Science & Technology	7	42	436	278	6	769
Moi University	36	59	1962	648	1	2706
Multimedia University	0	16	326	293	15	650
Murang'a University of Technology	7	7	158	77	0	249
Pwani University	79	9	428	306	11	833
Rongo University	11	32	664	226	0	933
South Eastern Kenya University	30	39	654	333	7	1063
Technical University of Kenya	0	56	767	582	18	1423
Technical University of Mombasa	14	23	475	547	31	1090
University of Eldoret	66	64	2163	1277	16	3586
University of Embu	11	6	113	117	17	264
University of Kabianga	60	34	830	567	4	1495

University of Nairobi	2811	445	3492	1776	261	8785
Total	7434	1899	30479	19580	889	60281

***Non-graded Award;**

Annex 29: Graduations by Domain of Award in Public Chartered Universities

Public Chartered Universities	Domain of Award										Total
	1	2	3	4	5	6	7	8	9	10	
Chuka University	731	56	214	396	57	78	0	406	44	0	1982
The Cooperative University of Kenya	0	0	1	423	0	0	0	0	0	0	424
Dedan Kimathi University of Technology	0	0	0	679	96	112	427	0	33	47	1394
Egerton University	1277	869	0	424	774	0	155	689	169	157	4514
Garissa University	0	0	0	16	0	0	0	0	0	0	16
Jaramogi Oginga Odinga University of Science & Technology	485	21	4	262	78	75	40	97	146	0	1208
Jomo Kenyatta University of Agriculture & Technology	0	0	695	2758	642	356	848	293	682	0	6274
Kenyatta University	2844	705	593	1384	910	63	153	183	469	0	7304
Kibabii University	491	87	0	193	58	62	0	0	0	0	891
Kirinyaga University	0	0	0	206	43	27	0	0	0	0	276
Kisii University	1242	279	204	1262	49	123	0	237	87	0	3483
Laikipia University	762	322	0	361	141	66	0	8	0	0	1660
Maasai Mara University	426	140	75	362	79	22	0	31	0	64	1199
Machakos University	162	0	0	107	0	23	0	0	0	13	305
Maseno University	828	189	388	513	393	155	108	289	166	0	3029
Masinde Muliro University of Science & Technology	979	172	230	278	229	74	121	163	230	0	2476
Meru University of Science & Technology	0	0	0	213	250	188	0	118	0	0	769
Moi University	864	112	42	1311	366	0	6	4	1	0	2706
Multimedia University	0	0	223	251	0	176	0	0	0	0	650
Murang'a University of Technology	0	0	0	152	39	58	0	0	0	0	249
Pwani University	370	60	0	162	148	0	0	54	39	0	833
Rongo University	342	0	210	202	111	1	0	67	0	0	933
South Eastern Kenya	376	28	0	206	262	34	0	157	0	0	1063

University											
Technical University of Kenya	0	115	190	310	371	57	380	0	0	0	1423
Technical University of Mombasa	0	0	87	266	300	47	390	0	0	0	1090
University of Eldoret	1241	0	0	908	703	0	67	667	0	0	3586
University of Embu	2	0	0	26	86	0	0	150	0	0	264
University of Kabianga	475	57	0	390	232	55	0	248	38	0	1495
University of Nairobi	1000	2160	641	2184	706	87	847	647	513	0	8785
Total	14897	5372	3797	16205	7123	1939	3542	4508	2617	281	60281

Domain of award legend

1= Education

2= Arts and Humanities

3= Social Sciences, Journalism and Information

4= Business, Administration and Law

5= Natural Sciences, Mathematics and Statistics

6= Information and Communication Technology

7= Engineering, Manufacturing and Construction

8= Agriculture, Forestry, Fisheries and Veterinary

9= Health and Welfare

10= Services

Annex 30: Graduations in Private Chartered Universities

Private Chartered Universities	Gender		Total	%
	Male	Female		
Adventist University	61	6	67	0.32
Africa International University	176	104	280	1.35
Africa Nazarene University	356	612	968	4.66
Catholic University of Eastern Africa	601	640	1241	5.98
Daystar University	327	607	934	4.50
Great Lakes University of Kisumu	147	185	332	1.60
Kabarak University	325	325	650	3.13
KAG East University	30	26	56	0.27
KCA University	606	531	1137	5.48
Kenya Highlands Evangelical University	12	12	24	0.12
Kenya Methodist University	1464	1317	2781	13.40
Mount Kenya University	4479	3739	8218	39.60
Pan Africa Christian University	54	71	125	0.60
Scott Christian University	14	13	27	0.13
St. Paul's University	454	633	1087	5.24
Strathmore University	432	538	970	4.67
United States International University	593	828	1421	6.85
University of Eastern Africa, Baraton	181	253	434	2.09
Total	10312	10440	20752	100.00

Annex 31: Graduations by Award in Private Chartered Universities

Private Chartered Universities	Graduation award				Total
	Bachelors	PGD	Masters	PhD	
Adventist University	0	0	67	0	67
Africa International University	188	4	62	26	280
Africa Nazarene University	696	0	272	0	968
Catholic University of Eastern Africa	978	5	215	43	1241
Daystar University	714	3	210	7	934
Great Lakes University of Kisumu	302	0	26	4	332
Kabarak University	623	0	15	12	650
KAG - East University	49	0	7	0	56
KCA University	1022	4	111	0	1137
Kenya Highlands Evangelical University	24	0	0	0	24
Kenya Methodist University	2561	0	213	7	2781
Mount Kenya University	7585	136	492	5	8218
Pan Africa Christian University	83	0	42	0	125
Scott Christian University	22	0	5	0	27
St. Paul's University	1006	0	81	0	1087
Strathmore University	769	0	196	5	970
United States International University	891	0	462	68	1421
University of Eastern Africa, Baraton	396	0	34	4	434
Total	17909	152	2510	181	20752

Annex 32: Graduations by Grade of Award in Private Chartered Universities

Private Chartered Universities	Grade of Award					Total
	Non graded	First class	Second upper	Second lower	Pass	
Adventist University	67	0	0	0	0	67
Africa International University	92	43	118	25	2	280
Africa Nazarene University	272	13	423	252	8	968
Catholic University of Eastern Africa	311	107	517	287	19	1241
Daystar University	220	21	113	512	68	934
Great Lakes University of Kisumu	134	18	166	14	0	332
Kabarak University	27	41	291	283	8	650
KAG - East University	7	7	22	19	1	56
KCA University	115	90	661	271	0	1137
Kenya Highlands Evangelical University	0	0	24	0	0	24
Kenya Methodist University	796	44	1088	700	153	2781
Mount Kenya University	1117	143	4652	2283	23	8218
Pan Africa Christian University	42	1	34	39	9	125
Scott Christian University	5	6	11	5	0	27
St. Paul's University	81	95	583	303	25	1087
Strathmore University	201	71	347	340	11	970
United States International University	530	57	133	701	0	1421
University of Eastern Africa, Baraton	38	6	120	205	65	434
Total	4055	763	9303	6239	392	20752

Annex 33: Academic Staff by Gender in Public Chartered Universities

Public Chartered University	Professor		Associate Professor		Senior Lecturer		Lecturer		Tutorial Fellow		Graduate Assistant		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Chuka University	3	1	10	3	23	12	101	58	70	48	24	6	231	128	359
Dedan Kimathi University of Technology	7	0	8	3	17	4	43	12	147	49	12	1	234	69	303
Egerton University	34	4	60	16	69	23	183	77	72	40	12	4	430	164	594
Garissa University	0	0	4	0	5	1	33	3	37	9	18	1	97	14	111
Jaramogi Oginga Odinga University of Science and Technology	7	2	10	5	32	4	65	19	200	31	4	2	318	63	381
Jomo Kenyatta University of Agriculture and Technology	0	0	0	0	0	0	264	93	276	114	79	51	619	258	877
Karatina University	2	1	11	2	7	6	28	22	124	72	3	2	175	105	280
Kenyatta University	23	4	38	20	142	96	527	265	142	123	0	0	872	508	1380
Kibabii University	7	0	10	1	18	8	82	32	108	40	0	0	225	81	306
Kirinyaga University			2		1		10	8	50	31	9	7	72	46	118
Kisii University	4	0	8	0	62	31	124	56	87	48	7	6	292	141	433
Laikipia University	1	0	8	3	12	1	130	67	13	8	3	2	167	81	248
Maasai Mara University	3	0	11	2	28	8	61	8	126	63	18	6	247	87	334
Machakos University	5	2	5		15	1	55	13	72	44	9	7	161	67	228
Maseno University	23	1	28	7	31	9	121	67	81	37	0	0	284	121	405
Masinde Muliro University of Science and Technology	19	3	21	3	69	33	257	117	138	90	40	20	544	266	810
Meru University of Science and Technology	48	8	50	16	284	56	224	109	45	41	118	81	769	311	1080
Moi University	3		6		24	7	11	6	221	81	6	3	271	97	368
Multimedia University of Kenya	3		11		13	8	120	59	150	59	35	14	332	140	472
Muranga University of Technology	1	1	4	1	4	1	12	2	21	11	3	0	45	16	61
Pwani University	10	2	11	4	14	4	48	28	58	19	8	3	149	60	209
Rongo University	7	2	13	0	7	2	169	58	17	11	0	0	213	73	286
South Eastern Kenya University	5	0	7	1	16	4	67	17	107	64	4	10	206	96	302
Taita Taveta University	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Technical University of Kenya	29	6	36	4	78	34	199	154	511	291	99	42	952	531	1483
The Cooperative University of Kenya	1	0	6	0	4	2	7	4	25	4	6	2	49	12	61
University of Eldoret	20	2	32	7	34	25	295	212	64	28	32	22	477	296	773
University of Embu	2	1	2	1	6	1	73	36	112	43	3	3	198	85	283
University of Kabianga	6	1	10	0	21	2	109	59	125	79	0	0	271	141	412
University of Nairobi	138	30	201	48	295	116	501	299	152	123	16	16	1303	632	1935
Grand Total	411	71	623	147	1331	499	3919	1960	3351	1701	568	311	10203	4689	14892

Annex 34: Academic Staff by Gender in Private Chartered Universities

Private Chartered University	Professor		Associate Professor		Senior Lecturer		Lecturer		Tutorial Fellow		Graduate Assistant		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Adventist University of Africa	9	0	20	6	26	1	1	0	0	0	0	0	56	7	63
Africa International University	5	0	3	1	2	4	25	15	30	31	0	0	65	51	116
Africa Nazarene University	1	0	2	4	8	8	88	47	0	0	5	4	104	63	167
Catholic University of Eastern Africa	7	1	11	5	30	18	139	84	66	50	3	5	256	163	419
Daystar University	3	1	7	1	24	15	99	104	3	5	0	0	136	126	262
Great Lakes University of Kisumu	1	2	0	1	1	5	33	19	7	12	2	4	44	43	87
Kabarak University	4	0	9	2	35	13	129	77	11	9	15	8	203	109	312
KAG - EAST University	0	1	0	0	1	0	2	1	15	10	1	0	19	12	31
KCA University	3	0	0	0	9	2	17	11	114	48	50	20	193	81	274
Kenya Highlands Evangelical University	3	0	0	0	3	0	9	4	6	5	1	1	22	10	32
Kenya Methodist University	1	0	4	2	15	2	45	28	46	46	7	4	118	82	200
Mount Kenya University	4	1	19	4	35	19	96	70	215	185	27	19	396	298	694
Pan Africa Christian University	1	3	3	2	12	9	14	12	19	18	0	4	49	48	97
Scott Christian University	1	1	0	0	8	6	28	27	0	0	4	0	41	34	75
St. Paul's University	1	0	4	4	26	8	193	167	0	0	8	6	232	185	417
Strathmore University	4	1	4	1	17	9	49	28	130	98	30	22	234	159	393
United State International University	15	5	31	10	84	30	100	58	0	0	0	0	230	103	333
University of Eastern Africa, Baraton	5	1	3	4	6	5	27	18	41	19	13	14	95	61	156
Grand Total	68	17	120	47	342	154	1094	770	703	536	166	111	2493	1635	4128

Annex 35: Academic Staff by Gender in Universities with Letters of Interim Authority

Universities with LIA	Professor		Associate Professor		Senior Lecturer		Lecturer		Tutorial Fellow		Graduate Assistant		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Aga Khan University	0	1	0	1	1	2	2	5	2	1	0	0	5	10	15
AMREF International University	0	0	2	0	3	3	4	2	1	0	0	0	10	5	15
GRETSA University	2	0	2	0	1	0	0	0	19	23	17	23	41	46	87
International Leadership University	3	0	3	0	3	1	16	22	0	0	0	0	25	23	48
Kiriri Women's University of Science and Technology	0	0	1	0	3	3	6	1	28	16	1	1	39	21	60
Lukenya University	1	0	2	1	6	2	6	6	25	20	0	0	40	29	69
Management University of Africa	0	0	7	0	12	6	17	11	15	12	1	0	52	29	81
Pioneer International University	1	0	1	0	2	2	4	3	14	3	3	1	25	9	34
Presbyterian University of East Africa	3	0	1	0	5	0	12	10	1	0	1	0	23	10	33
RAF International University	0	0	0	0	0	0	9	1	0	0	0	0	9	1	10
Riara University	3	1	0	0	3	3	12	10	49	26	2	0	69	40	109
The East African University	6	0	0	0	10	4	9	2	12	11	6	2	43	19	62
UMMA University	0	0	1	0	4	2	14	5	9	2	0	0	28	9	37
Zetech University	1	0	0	0	4	3	0	0	26	9	47	33	78	45	123
Grand Total	20	2	20	2	57	31	111	78	201	123	78	60	487	296	783

Annex 36: Academic Staff by Gender in Public Constituent Colleges

Public Constituent Colleges	Professor		Associate Professor		Senior Lecturer		Lecturer		Tutorial Fellow		Graduate Assistant		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Alupe University College	2	0	1	2	1	0	13	5	9	3	1	0	27	10	37
Bomet University College	0	0	0	0	2	1	2	2	23	17	0	0	27	20	47
Kaimosi Friends University College	1	0	2	0	2	0	6	1	12	7	0	0	23	8	31
Tharaka University College	0	0	3	0	1	0	13	5	15	9	10	5	42	19	61
Tom Mboya University College	2	0	1	0	3	0	41	16	1	1	0	0	48	17	65
Turkana University College	0	0	2	0	2	0	4	1	24	1	9	10	41	12	53
Grand Total	5	0	9	2	11	1	79	30	84	38	20	15	208	86	294

Annex 37: Academic Staff by Gender in Private Constituent Colleges

Private Constituent	Professor		Associate Professor		Senior Lecturer		Lecturer		Tutorial Fellow		Graduate Assistant		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Hekima University College	0	0	1	0	16	2	14	2	0	0	0	0	31	4	35
Marist International University College	1	0	0	0	2	2	14	14	22	18	0	0	39	34	73
Tangaza University College	15	2	18	1	29	6	28	18	3	0	0	0	93	27	120
Uzima University College	2	0	0	0	11	2	27	11	0	0	16	14	56	27	83
Grand Total	18	2	19	1	58	12	83	45	25	18	16	14	219	92	311

Annex 38: Staff by Qualification in Public Chartered Universities

Public Chartered Universities	PhD		Masters		Bachelors		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
Chuka University	119	65	88	57	24	6	231	128	359
Dedan Kimathi University of Technology	5	0	18	21	12	20	35	41	76
Egerton University	204	73	203	84	23	7	430	164	594
Garissa University	15	1	60	12	22	1	97	14	111
Jaramogi Oginga Odinga University of Science and Technology	101	36	183	55	4	2	288	93	381
Jomo Kenyatta University of Agriculture and Technology	264	93	276	114	79	51	619	258	877
Karatina University	34	26	117	63	2	2	153	91	244
Kenyatta University	522	271	376	246	1	0	899	517	1416
Kibabii University	83	21	175	76	27	17	285	114	399
Kirinyaga University	13	9	50	32	14	6	77	47	124
Kisii University	122	49	163	86	7	6	292	141	433
Laikipia University	149	71	15	8	3	2	167	81	248
Maasai Mara University	94	22	124	67	16	4	234	93	327
Machakos University	78	16	70	43	12	9	160	68	228
Maseno University	152	66	132	55	0	0	284	121	405
Masinde Muliro University of Science and Technology	152	72	243	121	53	25	448	218	666
Meru University of Science and Technology	41	12	225	81	30	10	296	103	399
Moi University	207	87	558	215	2	1	767	303	1070
Multimedia University of Kenya	57	25	237	107	41	15	335	147	482
Muranga University of Technology	31	8	68	36	5	1	104	45	149
Pwani University	75	32	69	25	6	2	150	59	209
Rongo University	46	16	147	47	14	13	207	76	283
South Eastern Kenya University	93	20	110	65	4	10	207	95	302
Taita Taveta University	0	0	0	0	0	0	0	0	0
Technical University of Kenya	158	81	279	202	119	71	556	354	910

Technical University of Mombasa	74	20	228	73	128	51	430	144	574
The Cooperative University of Kenya	14	5	27	7	6	2	47	14	61
University of Eldoret	158	87	281	175	14	12	453	274	727
University of Embu	85	39	115	44	3	3	203	86	289
University of Kabianga	75	28	245	132	132	73	452	233	685
University of Nairobi	802	301	487	250	56	41	1345	592	1937
Grand Total	4023	1652	5369	2599	859	463	10251	4714	14965

Annex 39: Staff by Qualification in Private Chartered Universities

University	PhD		Masters		Bachelors		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
Adventist University	56	7	0	0	0	0	56	7	63
Africa International University	21	11	51	33	0	0	72	44	116
Africa Nazarene University	36	15	67	40	4	4	107	59	166
Catholic University of Eastern Africa	89	59	126	56	13	23	228	138	366
Daystar University	50	34	85	90	0	0	135	124	259
Great Lakes University of Kisumu	9	7	34	22	5	10	48	39	87
Kabarak University	52	19	127	89	21	7	200	115	315
KAG - EAST University	2	2	6	7	1	0	9	9	18
KCA University	25	12	103	41	39	18	167	71	238
Kenya Highlands Evangelical University	4	0	18	4	1	1	23	5	28
Kenya Methodist University	16	19	96	59	7	3	119	81	200
Mount Kenya University	102	51	267	228	27	19	396	298	694
Pan Africa Christian University	62	60	70	66	4	8	136	134	270
St. Paul's University	37	16	196	170	0	0	233	186	419
Strathmore University	74	39	130	98	29	23	233	160	393
United States International University	91	39	99	58	0	0	190	97	287

University of Eastern Africa, Baraton	19	16	65	31	12	13	96	60	156
Grand Total	745	406	1540	1092	163	129	2448	1627	4075

Annex 40: Staff by Qualification in Universities with Letter of Interim Authority

Universities with LIA	PhD		Masters		Bachelors		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
Aga Khan University	8	6	7	11	2	1	17	18	35
AMREF International University	6	4	4	1	0	0	10	5	15
GRETSA University	5	0	18	21	12	20	35	41	76
International Leadership University	19	7	20	14	0	0	39	21	60
Kiriri Women's University of Science and Technology	10	4	24	16	1	1	35	21	56
Lukenya University	15	9	22	20	0	0	37	29	66
Management University of Africa	24	3	22	26	1	0	47	29	76
Pioneer International University	4	2	18	6	2	1	24	9	33
Presbyterian University of East Africa	10	1	13	11	0	0	23	12	35

RAF International University	4	0	5	1	0	0	9	1	10
Riara University	17	13	51	26	2	0	70	39	109
The East African University	25	6	12	12	4	3	41	21	62
UMMA University	14	2	9	7	5	0	28	9	37
Zetech University	7	1	28	10	46	31	81	42	123
Grand Total	168	58	253	182	75	57	496	297	793

Annex 41: Staff by Qualification in Public Constituent Colleges

Public Constituent Colleges	PhD		Masters		Bachelors		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
Alupe University College	10	5	17	4	1	0	28	9	37
Bomet University College	4	4	15	9	0	0	19	13	32
Kaimosi Friends University College	26	5	59	19	9	4	94	28	122
Tharaka University College	9	4	21	12	11	4	41	20	61
Tom Mboya University College	16	6	26	10	0	0	42	16	58
Turkana University College	6	1	21	1	8	9	35	11	46
Grand Total	71	25	159	55	29	17	259	97	356

Annex 42: Staff by Qualification in Private Constituent Colleges

Private Constituent Colleges	PhD		Masters		Bachelors		Total		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
Hekima University College	68	6	22	15	0	0	90	21	111
Marist International University College	15	5	22	28	0	0	37	33	70
Tangaza University College	62	9	31	18	0	0	93	27	120

Uzima University College	8	2	32	12	16	14	56	28	84
Grand Total	153	22	107	73	16	14	276	109	385

Annex 33: ISCED Fields Of Education and Training*

Code	Broad Field	Programmes Under Field
01	Education	<ul style="list-style-type: none"> • Education science • Training for pre-school teachers • Teacher training without subject specialization
02	Arts and humanities	<ul style="list-style-type: none"> • Audio-visual techniques and media production • Fashion, interior and industrial design • Fine arts • Handicrafts • Music and performing arts • Religion and theology • History and archaeology • Philosophy and ethics • Languages • Language acquisition • Literature and linguistics
03	Social sciences, journalism and information	<ul style="list-style-type: none"> • Economics • Political sciences and civics • Psychology • Sociology and cultural studies • Journalism and information • Journalism and reporting • Library, information and archival studies
04	Business, administration and law	<ul style="list-style-type: none"> • Accounting and taxation • Finance, banking and insurance • Management and administration

		<ul style="list-style-type: none"> • Marketing and advertising • Secretarial and office work • Wholesale and retail sales • Work skills • Law
05	Natural sciences, mathematics and statistics	<ul style="list-style-type: none"> • Biology • Biochemistry • Environment sciences • Natural environments and wildlife • Chemistry • Earth sciences • Physics • Mathematics • Statistics
06	Information and Communication Technologies (ICTs)	<ul style="list-style-type: none"> • Computer use • Database and network design and administration • Software and applications development and analysis
07	Engineering, manufacturing and construction	<ul style="list-style-type: none"> • Chemical engineering and processes • Environmental protection technology • Electricity and energy • Electronics and automation • Mechanics and metal trades • Motor vehicles, ships and aircraft • Food processing • Materials (glass, paper, plastic and wood) • Textiles (clothes, footwear and leather) • Mining and extraction • Architecture and construction • Architecture and town planning • Building and civil engineering
08	Agriculture, forestry, fisheries and veterinary	<ul style="list-style-type: none"> • Crop and livestock production • Horticulture • Forestry • Fisheries • Veterinary
09	Health and Welfare	<ul style="list-style-type: none"> • Dental studies • Medicine • Nursing and midwifery • Medical diagnostic and treatment technology • Therapy and rehabilitation • Pharmacy • Traditional and complementary medicine and therapy • Care of the elderly and of disabled adults • Child care and youth services • Social work and counselling
10	Services	<ul style="list-style-type: none"> • Domestic services • Hair and beauty services

		<ul style="list-style-type: none"> • Hotel, restaurants and catering • Sports • Travel, tourism and leisure • Hygiene and occupational health services • Community sanitation • Occupational health and safety • Security services • Military and Defense • Protection of persons and property • Transport services
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***Source: UNESCO Institute for Statistics, 2014**

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