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Influence of third-stream activities on university sustainability: a comparative study of Bidii and Zurii University

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INFLUENCE OF THIRD-STREAM ACTIVITIES ON UNIVERSITY SUSTAINABILITY: A COMPARATIVE STUDY OF BIDII AND ZURII UNIVERSITY

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University to the best of my knowledge and belief. It contains no material previously published or written by another person except where due reference is made in the thesis.

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Approval

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1.8 Definition of key terms

Human resource- These are the people who possess the necessary skills, knowledge, values, attitudes and understanding of tasks.

Intangible resources- These are resources that have unlimited capacity and institutions can exploit their value through licensing, renting and selling the resources.

Organizational capabilities- The ability to perform and achieve certain outcomes is necessary to enhance organizational performance. Capabilities are the foundation of competitive advantage, and organizational.

Tangible resources- These are fixed and current assets of an institution. These resources can be measured and quantified and include financial and physical facilities.

Third-stream activities- these are activities that enhance use, generation and application of knowledge, facilities and capabilities of universities in a bid to enhance income generation. It includes alternative forms such as institutional advancement, innovation, bequest, income from contract or sponsored research, entrepreneurial or commercialization activities, philanthropic funding, provision of services and investments.

University- this is an institution of higher learning that is endowed with knowledge, facilities and capabilities that enhance teaching and learning.

University sustainability- this refer to the ability of a higher learning institution to generate sufficient income that will enhance its continuity, efficiency and effectiveness. It also refers to the ability of an organization to actively uphold quality in terms of human resource, processes, learning environment and outcomes in a learning institution

ABSTRACT

Higher education institutions today face a demanding and complex financial context in which traditional modes of funding have been transformed. The pressure to maintain quality and competitive standards in the face of rising financial constraints has been the primary challenge facing universities worldwide. The increasing costs in majority of the universities has left most of them in financial crisis this is due to overdependence on first and second stream funding with little exploration on third-stream funding. This study sought to investigate third-stream activities, challenges that arise in these activities, viability of university activities and roles of different actors. This was done in two universities that is Bidii and Zurii Universities which are fictitious names. The study used resourced based theory and from its tenets objectives were developed on human resource, tangible and intangible resources. It adopted a mixed method research approach and thus a sequential method was used. The data collection methods included questionnaires, interviews and analyzing financial records. The study targeted administrators, lecturers and head of departments in the two universities. The researcher sampled 120 respondents in Zurii while 100 in Bidii university. Quantitative data was analyzed using IBM SPSS version 20 while qualitative data was analyzed using thematic analysis. In Zurii university the study found that there is a positive significant correlation between the university's utilization of tangible resources and finacial sustainability. In Bidii university there is a significant relationship between the institution's use of tangible and agricultural resources and financial sustainability. In both institutions study findings indicated critical resource as a main third-stream activities is human resource. Significant positive correlation between university engagement in linkages and selling software, and financial sustinability was also observed in the both insitutions. The study was crafted as a comparison of a pubic and private insitution. The areas for further research can be to research on reasons as to why most staff members are unaware of the finances that universities make. A deeper examination of the role of human resource in financial sustainability of universities needs to be done in terms of the staff development, remuneration and separation. Effect of management style on financial sustainability of universities, there is need to examine how management of universities influences its sustainability.

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DEDICATION

I dedicate this thesis to my husband Daniel, for being my cheerleader and encouragement throughout the writing. I am grateful that you kept encouraging me even when I felt like it was difficult you made it look easy. I also dedicate it to my parents Mr. and Mrs Ngenoh your prayers and love have made me reach this far. To my nieces and nephew Abby, Ezer, Zawadi, Israella, Gabriella, Fanaka and Joshua, I pray this will make you aim higher

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 Introduction

This chapter presents the background of the problem, statement of the problem, research objectives, research questions, scope and significance of the study. The chapter sought to outline third-stream activities globally, regionally and locally. It presents in a summarized manner the challenges of main stream activities in universities and the importance of seeking alternative means of income. The aim of the chapter is also to outline the issues that universities face in enhancing financial sustainability as well as outline the different mechanisms adopted worldwide.

1.1 Background of the problem

Universities have different ways of funding, there are mainly three forms; first, second and third-streams. First stream are funds that universities obtain through teaching. The second stream is funds from research. Third-stream income includes funds from other alternative forms such as institutional advancement, innovation, bequest, income from contract or sponsored research, entrepreneurial or commercialization activities, philanthropic funding, provision of services and investments (Derec, 2012). These streams aim at enhancing financial sustainability which is a key component of efficiency and effectiveness. In many countries, student numbers have been inconsistent. The numbers have doubled in 20 years in United Kingdom (UK). This doubling however contrasts with the halving of student funding per student. In the UK as well as in other countries, most notably Australia, innovation to diversify the funding base has taken place (Greenaway, 2003). Insufficient main stream funding has been declining; therefore, most institutions have been forced to seek for alternative sources of funding. The various third-stream activities that have been adopted by UK universities include: provision of training to companies, consultancies and seeking external partnerships. Third-stream activities in the UK refer to the generation, use, application and exploitation of knowledge, capabilities and facilities outside academic environments (Gallart, 2002).

Higher Education in Africa has experienced severe funding crisis, in South Africa, a report by HESA (2008) shows that first stream income dropped to 43% of revenue down from 49% in 2000 while income generated by universities in third-stream activities went up by 28% in 2004, up from 27% in 2000.The report further revealed that the government spending fell by 4% of total state finance in 1999 to 2.5% in 2007. The report also further reveals that South African universities have on most cases relied on tuition fees instead of seeking alternative forms of funds such as donations, endowments, investments and entrepreneurship. The overreliance on main stream funds has led to financial strain and crisis. This has therefore affected the quality of teaching due to inadequate facilities, deteriorating classrooms and inadequate teaching and learning resources (Mamo, 2013).

Universities in Kenya are also experiencing financial crisis due to the government's reduction in budgetary allocation to these universities. In 2018-2019 fiscal year; state funded universities were allocated 300 million US Dollars less from the amount they had requested (Nganga, 2018). The reason for the government budget cut is that government intends to put back its spending plan on track. Universities are operating on 100 million US dollars budget deficit. This has strained many activities and most of them have huge debts (Commission of Higher Education Report, 2016). The financial crisis has compromised the quality of education as there are huge financial debts owed to lecturers, poor infrastructure, staff retrenchment and closure of campuses. There are proposals to increase student fees up to three times in 2019 (Nganga, 2018). Despite this there has been little exploration of innovative alternative ways of increasing funds such as third-stream activities in universities and much focus has been on main stream funding.

1.2 Statement of the problem

Higher education institutions today face a demanding and complex financial context in which traditional modes of funding have been transformed. Public sources are not as generous as they often were in the past and frequently have become more demanding and competitive (Wittman, 2013). Universities have for a long time relied on first stream funding which is income from state subsidies and second stream funding (i.e. tuition fees), however there has been less focus on third-stream funding especially in developing countries (Graig, 2009). Provision of mainstream funds has been declining in Kenya. The capitation allocated to universities has been on a declining trend dropping

from 62.4% in 2012-13 to 44.9% in 2015-16. [1]A specific case is in Bidii University where the government funded only 51% of its budget. The contribution of capitation to expenditures of public universities declined from 67.4% in 2012 to 45.4% in 2018 (Nganga, 2018). This has created challenges in staff remuneration and completion of projects (Bidii University Annual Report, 2015).

Overreliance on mainstream funds has led to financial crisis in most public universities, closure of satellite campuses, delayed payment to service providers and conflicts in Kenya (Nganga, 2018). It has also placed increasing pressure on higher education institutions to find additional sources of revenue and to reduce their reliance on public funding by diversifying their revenue structure (Anthony, 2010). In Africa there has been little research on third-stream funding in universities. In Rwanda, Butare (2004) explored thrid stream activities in universities and their institutional capacity to implement these activiites. Mashininga (2018), carried a study in Zambia regarding third-stream activities specifically alumni funding. In Kenya third-stream activities as alternative means of increasing funds and how these activities can raise revenues despite the financial challenges has not been fully explored. The problem of the study is therefore that there hardly exists any information pertaining to the third-stream activities practiced by Tertiary educational institutions in the country. There is likewise a dearth of knowledge on the challenges in generating revenue through these activities, the viable means that can be most beneficial for both public and private tertiary institutions and roles of various actors, including a comparison of public and private universities (of third-stream activities). A cross comparison of a public (Bidii) and private university (Zurii) can provide such insights. The study will further contribute information on how to sustain long-term sustainability of universities and therefore benefit stakeholders who run and direct universities.

1. Bidii University represents a specific public university, though the name has been fictionalized so that the specific public university remains anonymous. It will ensure findings from this research do not jeopardize its reputation while at the same time representing the true state of affairs in the specific institution.

Overall research Objective

The study sought to investigate third-stream activities, challenges that arise in these activities, viability of university activities and roles of different actors.

1.3 Research Objectives

The study's research objective was guided by a resource based conceptual framework which has been used by a study conducted in UK by Prince (2007); on Strategies for developing third-stream activity in new university business schools.

1.4 Research Questions

The same framework of resource based given above guides the development of the following research questions:

I. How do tangible resources influence University Sustainability in Bidii and Zurii Universities?
II. How do intangible resources influence University Sustainability in Bidii and Zurii Universities?
III. What is the influence of human resource on University Sustainability Bidii and Zurii Universities?
IV. What are the challenges and roles of actors in addressing the various challenges of third-stream activities in Bidii and Zurii Universities?

1.7 Justification of the study

The study needed to be undertaken as university sustainability is relevant in enhancing continuity of these institutions. There is scanty evidence on the various third-stream activities that universities have undertaken in Kenya thus this study was important as it helped to reveal these activities, challenges and roles of different actors in enhancing income generation. The researcher undertook the study in Zurii University which is a private institution as it has undertaken better utilization of resources thus it was able to generate 48% more income in 2017 (Zurii University Annual Report, 2017), thus it was necessary to investigate the key factors that have led to more income generation as well as challenges and roles of different actors in income generation. Bidii University which is a public institution was chosen for the study as it has experienced challenges in terms of income generation and funding which has affected its operation (Nakweya, 2019). The study revealed the possible challenges as well as efforts that the university has made towards third-stream activities.

1.5 Significance of the Study

This study will be vital in understanding third-stream activities in few Kenyan universities and how they can enhance sustainability. Third-stream activities enhance university income and increase university funds. University sustainability enhances profits efficiency and effectiveness. The findings will help universities understand the challenges of these activities, policies and strategies that can be adopted by these institutions to further their income and enhance sustainability measures. Academicians, administrators and managers will benefit from this research as they will be able to access information on challenges in generating revenue through these activities, the viable means that can be most beneficial for both public and private tertiary institutions and role of various actors involved in the institutions.

Findings and recommendations from the study will assist the government to know how it can enhance third-stream activities in universities and how it can create an enabling mechanism for various actors. Funds from the government are scarce and therefore diversification is important as institutions seek to enhance their financial base. Findings from the study will enable policy makers to develop relevant policies that help to enhance financial sustainability of universities. It will also be significant to researchers who will be interested in undertaking further research in this area. There has been less focus on the area of third-stream activities in developing countries. This study will provide additional literature and information regarding third-stream activities. The findings will thus provide the necessary basis and literature on third-stream activities as well as university sustainability.

This study will be beneficial to private, public agencies and donors. Third-stream activities are not only limited to staff members in the universities but also involve students. Thus, partnerships and linkages with industries will help placement offices to better place students in internships and employment. It will allow donor agencies to know how to better support universities and students in the quest for financial sustainability.

1.6 Scope of the Study

The study was undertaken in Bidii and Zurii University. These names were fictitious that allowed the respondents to give more information without a fear of undermining their university's image and operations. The study focused on administrators, lecturers, planning committee and heads of departments. The feedback they gave provided insights on consultancies, trainings done and motivations needed to engage in third-stream activities. Heads of departments explained which third-stream activities enhance sustainability of these universities. There has been scanty literature indicating that Zuri University has engaged in third-stream activities. These third-stream activities have not been adequately documented. This study sought to determine the extent to which Zurii University has engaged in these activities. Zurii University grew its income to 48% in 2017 due to better resource utilization (Zurii University Annual Report, 2017). Third-stream activities have influenced financial sustainability in the university in a positive manner. Bidii University, which is a public university, was chosen for the study as it has been facing financial crisis and the extent of its engagement in third-stream activities is unknown. Furthermore, the university has had satellite campuses and has experienced cash crises which has affected how it achieves its core mandates (Nakweya, 2019). This study provided deeper insights on how it has explored other income generating activities to enhance its financial base.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter reviews literature on third-stream activities in universities and university sustainability. It will outline the theoretical and conceptual framework that the study was anchored on. This chapter will help reveal what other researchers have done in relation to third-stream activities and the gaps that exist. It will provide methodologies and theories used in previous studies. It gives new aspects that need further investigation based on previous research works.

2.1 Contextual Background

2.1.1: Global Context

Globally, third-stream funding has been exploited as an alternative model of generating income in most universities, UK universities generate nearly £100 billion (US$131 billion) due to engagement in third-stream activities (UK, 2017). In United Kingdom, universities have implemented myriad activities in relation to income generation. Universities have explored third-stream activities in a bid to enhance income and partnerships with communities. There are four categories of third-stream activities; the first category is placement of undergraduate and postgraduate students and staff. The second category is research focused and concerned with collaboration between Higher Education Institutions and external parties. The third category is networking and dissemination while the fourth category is community-based activities (Higher Education Funding Council for England, 2009). UK government increased funding towards third-stream activities in 2005. The universities were allocated £106.6 million while in 2008 this increased to £110.4 million, thus the UK government has increased focus on third-stream activities in a bid to enhance income. (Higher Education Funding Council for England, 2008). Third-stream activities have generated income for universities; however, the HEFCE (2008) report recommended provision of incentives to staff members as this enhanced involvement in such activities. The report further identified need of staff awareness a factor that enhanced involvement in its activities.

A study conducted by HEFCE (2008), on third-stream projects in 6 UK Universities, showed that third-stream projects generated significant funds in the universities, thus enhancing income. The findings further indicate that commitment and effective management enhance third-stream activities. The same projects encountered challenges such as lack of technical capacity, lack of motivation of staff and inadequate awareness of policies relating to third-stream activities.

In USA, University of California, in its first four decades largely depended on income from state and federal land grants however since the Great Recession, government funding declined drastically. This affected activities in the university as the funds were insufficient. This forced the university to explore other sources of funding. These included patents and licensing income, fundraising and endowments, provision of professional degree programs and partnerships with higher education institutions (Aubrey, 2018). The funds generated from these activities had significantly increased income and enhanced university sustainability.

In Spain, universities have explored third-stream activities as a means of enhancing income. Universities are actively engaged with the business sector and other organizations in its environment. This is to enhance the value of knowledge generated by university research, both socially and economically (Padilla-Angulo, 2019). A study conducted by Errasti, Bezanilla, García-Olalla, Auzmendi & Paños (2018), on factors and maturity level of entrepreneurial universities in Spain showed that there are various factors that influence effective third-stream activities. It showed that most universities have developed mission, strategies and management support in relation to third-stream activities. However, the legal administrative context, staff training and funds for third-stream activities have not been adequately developed in these universities.

2.1.2 Regional Context

The problem of higher education financing is more acute in Africa than in the rest of the world. In the last 15 years, the total number of higher education students in Africa has tripled, increasing from 2.7 million in 1991 to 9.3 million in 2006. However, funds allocated to universities have been insufficient compared to the number of students enrolled in universities (World Bank Report, 2010). Africa has implemented various policies in order to manage its financial crisis in higher education. Some strategies universities have used to reduced costs are freezing salaries, recruitment of teaching staff, reducing scholarships and reducing expenditure on equipment, maintenance and repair. Despite

the aforementioned measures, challenges still exist in enhancing quality education in public institutions. Some institutions have overcrowded classrooms, inefficient service delivery, poor facilities and inadequate investment in research and training. There has therefore been little exploration of third-stream funding as an alternative means of income in most African universities.

In South Africa, a report by HESA (2008) shows that first stream income dropped to 43% of revenue down from 49% in 2000. The income generated by these universities in third-stream activities went up by 28% in 2004, up from 27% in 2000. The report further outlines that universities in South Africa have had challenges in generating third-stream income due to weak relations between institutions of higher education and businesses, alumni and universities, poor geographical and economic conditions of universities, inadequate research capacity of universities and lack of culture of giving. The report concluded that for third-stream activities to be effective there was need to have proper mechanisms that support these activities.

Zambia has had challenges in regard to main stream funding; the funds allocated to universities by the state have been insufficient. The Ministry of Education in Zambia has experienced challenges. This has forced university councils to adopt financial models that enhance sustainability. The Government is also working on having a mandatory policy that ensures that alumni contribute back to their former universities (Mashininga, 2018). This is aimed at enhancing other revenues for universities. The policy will also give an opportunity to graduates to provide extra funds that can be used for infrastructural purposes and expanding research activities.

In Ethiopia, universities have explored third-stream activities in a view to enhance income. A study conducted by Tamrat (2014), on university-industry linkages in Ethiopian universities, showed that universities engage in consultancy services, technology transfer, hiring facilities and collaborative agricultural activities. It indicated the major factors that influence management of income generating activities include: staff development, incentives schemes, financial management and policy directions. There has been an expanded enrollment in most of the universities in the country and this has compromised quality of education due to strained finances. A study conducted by Munyua (2011), on revenue diversification strategies adopted by Ethiopian universities showed that universities have various activities such as consultancy services, renting, leasing university buildings and short-term training for organizations to enhance income and ensure sustainability. These third-stream activities

have supplemented main stream funds. Revenue diversification has been faced with challenges ranging from lack of proper management and leadership.

Rwanda also had challenges in regard to first stream funding, as the government reduced university funding. In 2016, the Government of Rwanda cut the operational budget of University of Rwanda by 50%. This was aimed at enhancing third-stream activities in the university as well as research. The inadequate funds experienced in universities have therefore forced most of them to seek for alternative sources of funds. The main third-stream activity that has been explored by University of Rwanda is alumni funding. The University is aiming to have lecturers engage in income generating such as forming consultancies to help enhance financial sustainability of the university (Rwirahira, 2017).

Higher Education Institutions like Kigali Institute of Science and Technology in Rwanda have come up with innovative third-stream activities. They include solar thermal systems, agro processing, food storage, biogas technology and waste water and solid waste management systems. The total revenue generated by the Centre for Innovations and Technology Transfer in the same institution was US$300,463 in 2002 and US$1,369,316 in 2003 (Butare, 2004). This was effective in supplementing the first and second stream funds in the University.

2.1.3 Local Context

Kenyan Universities have been reeling under financial crisis. Student enrolment has grown exponentially from 10,000 students in 1990 to 539,749 in 2019. 86% of students in universities are enrolled in Public universities however, funds have declined drastically. The public university system debt stands at US$110 million (Munene, 2019). This has affected the quality of education in many public universities including deterioration of facilities and reduced research activities and training. Third-stream activities have not been fully exploited as an alternative means of income despite the fact that most universities are endowed with knowledge resource and tangible assets such as land. Many universities lack adequate capacities to effectively implement alternative income generating activities. Universities have undertaken these activities though they have been unsuccessful and yielded little results. It is therefore critical to enhance research in the area to give insights on how to enhance financial sustainability (Nganga, 2018).

Some universities have tried to engage in third-stream activities in Kenya however not much research has been explored in this area. University of Nairobi earned 3.95 billion in 2011 through income generating activities, while Kenyatta University earned 3.54 billion in 2011. Jomo Kenyatta University of Agriculture and Technology earned 2.36 billion and Egerton University earned 1.39 billion. Moi University earned 1.63 billion while Maseno University earned 629 million in 2011. The bulk of money for many universities are from running hotels, restaurants, bookstores, funeral homes, printing press and parallel programs (Mugwe, 2011). Moi University runs Rivatex East Africa Limited, which was reopened by the President of Kenya in May 2019 and Maseno University still operates Kisumu Hotel. Egerton University runs Lord Egerton Castle, a pharmacy, large scale dairy farms, sheep production and maize farms. University of Nairobi runs an enterprise unit, Chiromo Funeral home and a dental plaza. These activities generate income however there have been challenges in regards to lack of proper management, inadequate capital, inadequate staff morale and funds (Mugwe, 2011).

2.2 Empirical review of factors influencing third-stream activities

A study conducted by Derec (2012) on strategic aspects of third-stream activities in global higher education in England found out that 40% of the academicians in universities engaged in third-stream activities. The study also further revealed that third-stream activities are hindered due to lack of policies and strategies, poor management styles and inadequate infrastructure. The study also revealed that there is lack of commitment on third-stream activities and there is much focus on teaching and research. A different study conducted in UK by Prince (2007) on Strategies for developing third-stream activity in new university business schools discovered that third-stream activities are constrained by resources, capabilities and organizational arrangements. The study adopted a resource-based theory and multiple case design. The study identified two distinct development paths for third-stream activities: focus on delivering funded activity from development partners and learning councils. Universities can focus on more commercially based activities from companies and industries (Baglieri,Baldi & Tucci, 2018).

A different study conducted by Urbano (2014), on entrepreneurial activity and regional competitiveness in Europe indicates that various formal and informal factors are critical in order for third-stream activities to be successfully implemented in a university. The study used a quantitative research design. It used a structural equation model to analyze data from different universities. The

study further concluded that informal factors such as positive attitude from staff members played a critical role in enhancing entrepreneurial activities. It further indicated that availability of role models was crucial to enhance third-stream activities in universities. The study concluded that informal factors have a greater influence on third-stream activities as compared to formal factors.

Miranda, Chamorro & Rubio (2016), conducted a study on income generating projects in University of Eastern Philippines. The study used a descriptive-correlation research design in order to further understand the extent to which third-stream activities had been implemented. The study revealed that staff members and implementing committees have a significant role. Staff members were important when it came to implementation of third-stream activities. Knowledge, experience and training of staff members influenced the implementation of activities. It was therefore important to train people in implementation. The study concluded that third-stream activities were a tool of enhancing financial sustainability. A different study conducted by Hussin & Rashid (2017) on diversifying income generation in public universities in Malaysia, the study used qualitative approach and content analysis. It found out that the challenges towards income generation include; lack of management support, lack of clear policies and lack of skilled personnel. It acknowledges the role of income generating activities in enhancing financial sustainability of universities.

Fuller & Pickemell (2018) conducted a study on identifying groups of entrepreneurial activities at universities in UK identified four categories of third-stream activities that could be adopted by a university. The study used exploratory research design to further understand the third-stream activities in UK universities. The four categories were: staffs spin off activity, non-higher education institution owned spin off activity, graduate start up and university knowledge exploitation activities. These activities enhanced sustainability of universities and generated income. The study identified that staff and management teams have a major role in the enhancing third-stream activities. It is therefore vital to constantly involve key stakeholders in the process of generating third-stream activities. The findings in the study indicated that institutional factors influence third-stream activities. Therefore, policies, organizational capabilities, intangible and tangible resources affected the third-stream activities in a university set up.

In Australia, universities are under increasing pressure to diversify their funding base due to reduction of funding from government. Universities have therefore developed third-stream activities as a method of enhancing their funding base with a view of enhancing university sustainability in challenging economic times (Hazard, 2003). A study conducted by Schmidt & Peachey (2003), on entrepreneurial approaches to generating income at the University of Queensland Cybrary, discovered the university adopted various methods such as consultancy services to enhance its income base. The study focused on an in-depth case study of the universities with the aim of reviewing its third-stream activities from external sources. A need was discovered to enhance public private partnerships in a bid to enhance sustainability. The findings from the study indicated that capability and motivation of staff influenced third-stream activities.

Malaysian universities have increased their income through activities such as endowment, university hospitals, enterprises, entrepreneurship programs and consultancy (UNESCO Bangkok, 2012). A study conducted by Mahamood & Rahman (2015), on financing universities through endowments used in-depth interviews to explain the role of endowment in enhancing university income. The findings indicated that the endowment that universities received played a significant role in increasing universities' income thus enhancing sustainability and quality. The study indicated the role that partnerships have in enhancing income. Universities should therefore create mechanisms beginning from the management and leadership to create relationships with external organizations thus enhancing income generation. A similar study conducted by Ahmad, Soon & Ting (2015) on income generating activities in Malaysian Universities used a qualitative approach to explain various activities that universities had undertaken. The findings from the study indicated that 84% of the universities in Malaysia engage in income generating activities such as consultancies. The major success for the activities was the involvement of staff members in enhancing profitability.

There is need to enhance skill, knowledge of staff members in a university especially in third-stream activities. inadequate skills and knowledge discourages most staff in engaging in third-stream activities. A study conducted by Mangeol (2014), on strengthening business models in higher education institutions: an overview of innovative concepts and practices revealed that skills of employees are critical in enhancing effective third-stream activities. The study further revealed that workload of faculty members influenced the extent to which they engage in third-stream activities.

The attitude of staff members influenced third-stream activities. It was therefore important to cultivate the positive attitude.

A descriptive survey study conducted by Riechi (2012), on Revenue diversification in Kenya's public universities and implications for efficiency and equity: an analysis of educational finance in the African context used case studies of Makerere, Dar-es-Salaam and Nairobi Universities. It adopted the Human Capital theory to explain revenue diversification. The study identified various challenges that universities faced in revenue diversification. They included; poor management systems, shortage of skilled manpower and low staff morale. The study further identified remedies for the above challenges as: adoption of innovative management strategies, educating stakeholders, consensus building, Government support and enhancing competitive advantage. The study however did not focus on the role of the different actors and the viable means that can be most beneficial for both public and private tertiary institutions.

A different study conducted by Chumba, Muturi & Oluoch (2019), on the effect of financial investment strategies on the financial sustainability of universities in Kenya identified that the staff members are not adequately skilled to effectively engage in third-stream activities. The study used a Descriptive and cross-sectional correlational survey design, therefore descriptive statistics included mean while inferential statistics in the study used included Pearson product moment correlation. The most significant income generating activity in most of the universities based on the study were consultancies. However, the study recommended the need to equip staff members thus carry out effective projects. It also indicated the need for universities to carry out viable financial investments projects that are effectively and efficiently operated.

2.3 University Sustainability

University sustainability refers to the ability of an organization to actively uphold quality in terms of human resource, processes, learning environment and outcomes in a learning institution; it is also using appropriate resources into the future (Herlitschka, 2008). University sustainability has become a major issue for universities globally. Growth in costs of higher education has been unprecedented, exceeding amounts sustainable by government funds (Wolff, 2014). Universities have been experiencing scarce resources due to limited funding opportunities and overreliance on one funding system. Every university is an output of different process of economic and intellectual up growth that needs to find equilibrium between teaching, research and extensive range of third-stream activities.

There are various aspects/pillars of financial sustainability, they include: strategic, financial planning, income diversification, sound administration, finance and own income generation (Leon, 2001). A financial and strategic plan is important as it helps to project the expenditure of an organization, its potential to generate income and cover those expenditures. Income diversification is another aspect that is important when analyzing financial sustainability. Organizations need to have alternative sources of income instead of relying on one source which can compromise sustainability. An organization should have efficient procedures and policies that enhance proper administration, transparency and accountability of finances in a bid to enhance financial sustainability. University Sustainability can be achieved through commitment, leadership, investment of time, money, effective management team and team work (Jung, Park & Ahn, 2019).

The main facets of financial plan are projected expenditures and sources of income. These two aspects are important as they help to ensure that there is continuity in an organization. Income diversification has its different aspects which include sources of financing from national foundations, international foundations, local corporations, government, local and others. Sound administration and finance is another financial sustainability pillar the main facets are procedures, institutional policies and issuing of financial statements to enhance decision making in the organization. The fourth pillar of financial sustainability is own income generation its aspects include: generating trust/endowment fund and fundraising for institution building this can include donations from individuals, corporations and agencies (Jung, Park & Ahn, 2019).

Financial crisis in most universities have forced most universities to engage in cost cutting strategies and some have been forced to scale down their operations in a bid to enhance finances (Lim, 2016). The issue of financial crisis in universities is further aggravated by the global economic crisis in the world (Deloitte, 2015). However, some universities have been innovative in engaging in alternative activities such as third-stream to enhance their sustainability. The universities have been forced to reduce overdependence in first and second stream funding especially in first world countries.

Engaging in creative activities enhances profitability in an institution as there are measures to enhance and increase income in an institution. In Rwanda, Kigali Institute of Science and Technology, the Centre for Innovations and Technology Transfer generated a revenue ofUS$300,463 in 2002, while an income of US$1,369,316 was realized in 2003 (Butare, 2004). This enhanced profitability due to creative third-stream activities that the institution had.

Sustainability enhances service delivery, efficiency and effectiveness in an institution. Funds are made available to enhance development and achievement of goals and objectives of an institution (Armstrong, 2014). Engagement in third-stream activities help to supplement the first and second stream sources of funds in an institution. This enhances technical and economic efficiency (which is the use of input resources to maximize output in an institution). A study conducted by Siraj, Teka & Hebo (2019), on financial sustainability of Malaysian public universities: officers' perceptions, found out that officer in the university agreed to critically utilize resources to enhance income. The study revealed that most respondents agreed that increasing student fees was not a feasible method of enhancing sustainability and therefore there was need to engage in third-stream activities to enhance sustainability.

2.4 Theoretical Framework

There are various theories and models that have been developed regarding third-stream funding. These include output-based theory of funding, input based theory, mixed model and resource-based theories.

2.4.1: Output based theory

Output based theory of funding has been promulgated to enhance funding base in a University. This theory was used by Frolich & Rosa (2010) on funding systems for education in Norway. The theory was later advocated by Jongbloed (2000). The theory focused more on funds it has produced through graduates. The other sources of funding under this model included various private-public partnerships and alumni funding. Funding was therefore linked to quantity and quality of outputs. Denmark and Norway adopted this approach to increase funding base of universities.

2.4.2: Input based theory

Input based theory gives prominence to how funds are used within an institution (Jongbloed, 2004). These range from human, material, physical and ideological resources that are located in an institution. The same study by Frolich & Rosa (2010) mentioned above used input based theory. The theory suggested the use of resources to enhance stakeholder participation in the process of increasing funds. Portugal adopted the method as a means of improving funds. The method enabled institutions to design attractive short term training programs that were marketable and had an economic impact

to society. Therefore, an institution could use its staff members to come up with trainings and programs that enhance income into a university.

2.4.3: Mixed model theory

Mixed model theory combines mechanisms such as basic, performance and competitive funding to enhance its base (Morgan, 2006). The theory gives a combination of various aspects of resources to enhance funds. It proposes that universities are endowed with resources both input and output that when fully utilized can enhance financial sustainability. A study conducted by Miranda (2016), on income generating activities in public universities in Philippines used the mixed model theory. Critical to the theory is a need to identify the key resources an institution needs to enhance achievement and performance. The theory therefore brings a complementary aspect between the input and output based theories of funding. These theories are critical in explaining the third-stream funding in universities.

2.4.4: Revenue Diversification Theory

A study conducted by Riechi (2012), on Revenue diversification in Kenya's public universities and implications for efficiency and equity: an analysis of educational finance in the African context used yet another different theory, the resource dependency theory. The theory mentions that an organization or institution has resources that affect it functioning and such resources originate from the organization's environment (Ulrich & Barney, 1984). Organizations depend on multidimensional resources: labor, capital, raw material. Third-stream activities can take place with the availability of resources ranging from tangible, intangible and human resources. It is therefore important to have such resources in place. The theory insists on the need for an institution to work closely with its environment in ensuring efficiency and effectiveness.

2.5: Resource based theory

Resource based theory developed by Barney (1991), outlined that an organization has various resources to enhance organizational efficiency and effectiveness thus sustainability. A study conducted in UK by Prince (2007); on Strategies for developing third-stream activity in new university business schools used this theory. Resources explicated in the theory included tangible, intangible, human resource and organizational capabilities. In the context of a University, third-

stream activities can arise out of these resources, however it is important to note that these are factors that can enhance or hinder third-stream activities. A University can use its tangible resources such as renting buildings, land to organizations to generate income. A University can also use its human resource to train individuals from companies regarding various issues. They can also engage in consultancy services and thereby generate income.

This study was founded on Resource based theory by (Barney, 1991). It states that resources are critical in achieving competitive advantage as well as sustainability of an organization. This theory is relevant in explaining third-stream activities that universities can take advantage of through the use of their various resources. In the context of a university there are various resources that are available they can include tangible, intangible, human resources and organizational capabilities. These resources are critical in enhancing third-stream activities. The theory has been used by Prince (2007), on Strategies for developing third-stream activity in new university business schools in the UK. This theory was relevant to the study since in a university there are various resources that can be fully exploited to enhance third-stream activities thereby enhancing sustainability. The theory outlines that competitive advantage can be delivered to an organization it is able to utilize its resources in unique and valuable manner. Thus, the theory helped to examine the resources in an organization and how to enhance efficiency and effectiveness.

The theory further states that an organization can have several resources which when fully exploited can lead to better organizational performance. These resources can be grouped into tangible and intangible resources. Tangible resources can be readily seen, touched, and quantified, such as physical assets, property, plant, equipment, and cash. Intangible resources are difficult to see, touch, or quantify, such as the knowledge and skills of employees, a firm's reputation, firm's culture, policies and strategies. The theory was therefore vital in describing the resources and capabilities in universities that can be exploited to enhance sustainable competitive advantage. The specific tenets in this theory are:

2.5.1: Tangible Resources

These are fixed and current assets of an institution. These resources can be measured and quantified and include financial and physical facilities (Wernerfelt, 1989). They can also be owned and are transparent. Tangible resources are land or teaching facilities/infrastructure. Land can be used to

enhance agricultural activities thus giving produce that can be sold to generate income. Classrooms and land can be rented to organizations or individuals thus generating income.

This variable was operationalized in the study by examining how universities use resource such as land, whether they rent facilities, installation of solar panels and whether they generate significant income to the universities. A questionnaire was used to determine the activity that generates most income, thus spearman rank correlation was effective in ranking the activities that generate income. Thus the study looked at a period of the last 5 years to examine the extent of profit generated. A questionnaire was used to collect this data then the information was analyzed to determine the extent of profitability.

2.5.2 Intangible Resources

These are resources that have unlimited capacity and institutions can exploit their value through licensing, renting and selling the resources (Hall, 1992). These assets can include: intellectual property: trademarks, copyrights and patents. The reputation, networks and partnerships that the organization can make with its external links are also critical.

This study operationalized intangible resources by exploring the extent to which universities use copyrights, patents, trademarks, software, linkages with industries to generate income. Questionnaire was used to determine which intangible resource generates more income thus a likert scale will help. Since correlation was used the study examined the relationship between one intangible resource and the profitability it has generated in the last five years.

2.5.3 Human Resources

These are the people who possess the necessary skills, knowledge, values, attitudes and understanding of tasks (Itika, 2011). People are critical in enhancing third-stream activities as they help to ensure proper design, implementation and sustainability of activities. Dedicated, motivated and skillful human resource is important in enhancing third-stream activities.

The study examined the extent to which the lecturers engage in consultancies, training organizations, organizing seminars and workshops that help to generate income. Questionnaire was used to determine which human resource activity generates more income thus a likert scale will help. Correlation was used to examine the relationship between one human resource activity and the profitability it has generated in the last five years.

2.5.4 Organizational capabilities

The ability to perform and achieve certain outcomes is necessary to enhance organizational performance. Capabilities are the foundation of competitive advantage, and organizational (Grant, 2002). Capability requires the expertise of various individuals be integrated with tangible and intangible resources. Trainings and consultancy services provided by human resource are critical in enhancing third-stream activities in universities. This aspect was not examined as to describe capabilities will require to look into various components such as Individual differences in the ability to transform resources into valuable activities, the multi-variate nature of activities, the importance of real freedoms in the assessment of a person's advantage and balance of materialistic and non-materialistic factors (Sen, 2004). This will mean a researcher needed at least two years or more to investigate this aspect and it would have generated myriad of data that will take time to analyze and collect.

2.5.5 Challenges and roles of different actors in Third-stream Activities

The study sought to investigate the challenges that universities face in the implementation of third-stream activities. The empirical literature reviewed indicated that lack of motivation from staff members influenced effective implementation of third-stream activities. Proper leadership and management is important as it helps to enhance third-stream activities. Adequate manpower was crucial in enhancing third-stream activities. Thus it is important to have skilled manpower which is critical for successful implementation of third-stream activities. Lack of specific structure for revenue diversification and inadequate information and awareness among staff members are some of the challenges of third-stream activities (Berrett & Holliday, 2018). The research investigated whether these and other challenges exist and possible sources of different challenges including role of actors resolving such challenges.

In a university there are different stakeholders these include the management team, administrators, head of departments, lecturers and students. They have certain roles and duties in ensuring that there is sufficient supply of income in the university. This can include mobilization of resources, implementation of income generating activities and monitoring the various activities in the university. This study sought to examine the extent of their roles and the challenges they encounter in carrying out these roles.

The challenges and role of the different actors was operationalized by examining the extent to which staff are motivated to engage in third-stream activities, the structures, policies that have been put in place to enhance these activities, whether universities provide training to staff members and the extent to which there is support from the management. This data was collected by means of a questionnaire thus a likert scale was used to examine the challenges, a spearman rank correlation was used to rank the challenges and determine which the major challenges in the universities are.

Table 1: Operationalization of research objectives

Research questions	Aspects	How it is measured (i.e. question)
1. How do tangible resources influence University Sustainability?	Land, rooms, sale of merchandise, agricultural activities, solar panels	Spearman rank correlation and multiple regression analysis
2. How do intangible resources influence University Sustainability?	Intellectual property, software, linkages, partnerships	Spearman rank correlation and multiple regression analysis
3. What is the influence of human resource on University Sustainability?	Training organizations, consultancies, fundraising from alumni and seminars	Spearman rank correlation and multiple regression analysis
4. What are the challenges and roles of actors in addressing the various challenges of third-stream activities in Universities?	Staff Morale, management and leadership, shortage of skilled manpower, structures and policies	Spearman rank correlation
5. University sustainability	Profitability Efficiency	Multiple regression analysis

2.6 Conceptual Framework

Independent Variable **Dependent variable**

Third-stream Activities University Sustainability

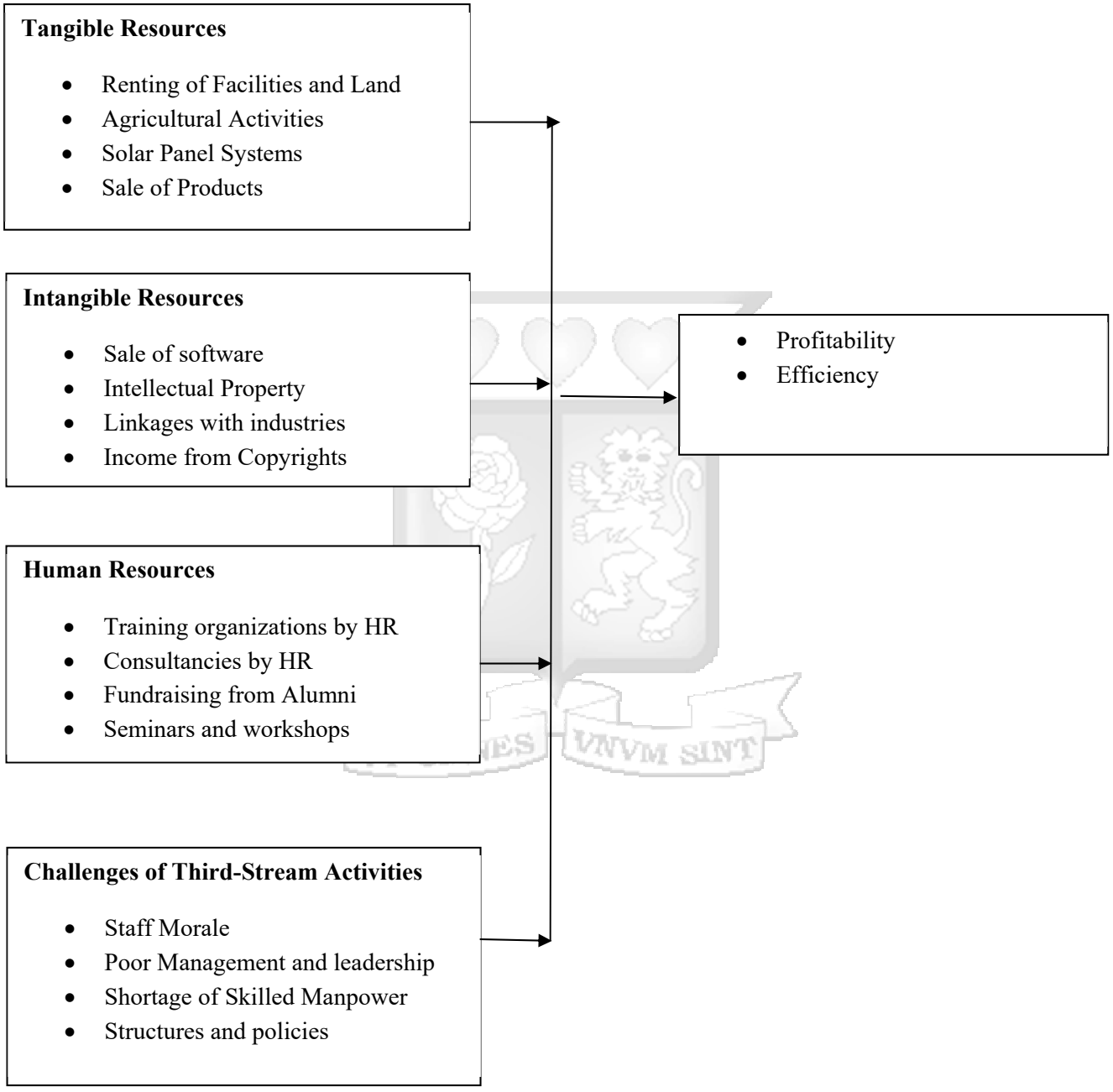

Figure 2.1 Conceptual Framework
Source: Author

The conceptual framework is composed of the independent and dependent variables. The independent variable is third-stream activities. Resources such as human resource, tangible, intangible and organizational capabilities influence the dependent variable which is University sustainability. A study conducted in UK by Prince (2007); on Strategies for developing third-stream activity in new university business schools used this framework. The framework was developed from the theory that the study has adopted. This theory is relevant as opposed to the rest as it combines the various resources that are available in an organization and its shows how these resources can be fully utilized to enhance profitability, efficiency and effectiveness (i.e. university sustainability).

2.7 Summary of Literature Review

The empirical literature reviewed in this chapter indicated a gap in third-stream activities in Kenya. Bidii and Zurii universities, being two universities with different foundations within the same context also face such challenges. Bidii is a public university and Zurii is a private university. Different theories have been used to address the challenge of raising funds through third-stream activities. The aim of the chapter was therefore to give a base on the previous studies that have been done on third-stream activities. Thus it was necessary as the study established the research gap in Kenya, in regards to little research in the area of third-stream activities. It also set the scene for the next methodological chapter.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

The aim of this chapter was to outline the research design, target population, sampling design, methods of data collection and ethical considerations that the study used. The purpose of this chapter was investigate the ways in which tangible, intangible and human resources influence university sustainability therefore there was need to collect the necessary data.

3.1 Research Design

The study adopted a mixed method design; this is a method that involves collection and analyzing of data using qualitative and quantitative methods (Creswell, 2014). A study conducted by Baglieri, Baldi & Tucci (2018) on University technology transfer office business models one size does not fit all used this method. The advantage of using this method is that it is a combination of two methods thus it will provide a complementary aspect. Therefore, the weaknesses of the qualitative method were complemented by the strengths of quantitative and vice versa. Qualitative research is a process of collecting and analyzing data in order to understand a person's feelings, values, culture and beliefs (Munhall, 2012). Therefore, this method allows for further understanding of concepts in a greater depth. The aim of using qualitative research design was to provide a deeper and explicit understanding of the study.

Quantitative research is a process of collecting and analyzing through gathering of numerical data. It is concerned with deductive approach (Creswell, 2014). This method was critical as it helped in collection of data that is relevant in explaining the variables thus allowing for the making of further conclusion and recommendations. Thus, quantitative design helped to generate important data on the relationship between the independent and dependent variables. The Independent variable in the study was third-stream activities which are composed of four major aspects that the study investigated. They include: tangible, intangible, human resources and challenges of third-stream activities. The dependent variable was university sustainability and, in the study, focused on profitability and efficiency. The study first adopted a quantitative design then later qualitative methodology. A sequential approach which is a form of mixed method approach was used by the researcher. The study first obtained information using a questionnaire then interviews. This helped to ensure that relevant and in-depth information was gathered.

3.2 Target Population and Sampling Procedure

Target population refers to the total number of respondents, households and projects that are in an environment. It also refers to the subjects that the study or findings will be generalized (Barnes, 2019). The study targeted administrators in both Bidii and Zurii University. Thus it targeted 331 administrators working in various departments in Bidii University (Bidii University Strategic Plan 2009-2019). The study further targeted 400 administrators working in Zurii University (Zurii University Annual Report, 2017). Sampling is a process whereby a portion of the population is selected in order to enhance research; it saves on time and enhances time management (Calvert, 2013). According to Kothari (2012), an effective and good sample covers 10-30% of the population. Therefore, the study took 30% of the population in each University. 30% of 400 respondents will be 120 in Zurii, while 30% of 331 respondents will be 100 in Bidii. The study selected 120 administrators in Zurii University while in Bidii University the researcher selected 100 respondents to answer the questionnaires that were provided by the researcher. The respondents were randomly selected to ensure there is no biasness. A study conducted by Nikahmad, Ismail & Siraj (2019), randomly selected its participants in Malaysia when studying on financial sustainability of universities.

3.3 Data Collection Methods and Instruments

The study used primary data collection tools to further research on the area of study. The study therefore used questionnaires and analysis of financial records and reports to collect the data from the two universities. The selection of the tools was guided by the nature of the study and objectives of the study.

3.3.1 Questionnaire

A questionnaire is a set of questions that is designed in order to assist collect data on a particular area of interest the use of questionnaires enables the researcher to reach a large number of people therefore it is economical (Brent, 2018). The questionnaire was structured based on the objectives of the study this helped ensure that all the main components of the study were included in the questionnaire. It was composed of section A which helped to collect the background information of the respondents.

The second section was B, which comprised five sections. The first four sections covered the independent variables while the last section comprised the dependent variable. In Section B, the first

part answered questions on tangible resources, the second part covered intangible resources and the third part covered human resources and the fourth part; the challenges and roles of different actors. The final part; the extent to which these resources enhance financial sustainability. The questionnaire consisted of close ended questions; this enhanced effective analysis of data. This enhanced further understanding of the research area. The specific aspects of the questionnaire have been provided in chapter 2.

A rank scale was used to examine each objective, on tangible resource statements/questions such as: university hiring land, facilities, engaging in agricultural activities, sale of merchandise and solar panels will help to examine this objective. The second objective on intangible resources had statements/questions on whether developing of software, intellectual property and patents have contributed significantly to income in the universities. The third part had statements on whether the human resource involves itself in training and consultancies. The fourth part was challenges of third-stream activities the statements in this section were on whether staff are motivated to engage in these activities, whether there are policies, structures and management support. The fifth part was on financial sustainability and thus focused on the perception of respondents on this aspect and if it's an important concept.

3.3.1 Interviews

The study also adopted interviews as a primary data collection tool. This enhanced further understanding of people's feelings, opinions and attitudes on the study. Interviews were particularly of importance as the study adopted a mixed method approach thus helped to collect qualitative data regarding the area of study. Interviews provide an in-depth understanding of the area of study thus providing more information.

3.4 Validity and Reliability

Validity refers to the degree to which an instrument measures what it ought to measure. It therefore is the extent to which an instrument asks questions that enhance accuracy (Paton, 2010). The study used content and construct types of validity. The researcher conducted a pilot study to ensure that the questionnaire and the interview schedules were valid. According to Hoffman et al (2010), a pilot study is important as its helps to make necessary correction regarding the research instruments thus ensure that the instruments contain the necessary content and measure the constructs of the study.

Pilot study was conducted by distributing a few questionnaires to selected respondents in the two universities and analyze the responses and establish if the instruments were valid. The study further sought the opinions of experts in the field of study. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity.

Reliability refers to the degree to which a research instrument yields consistent results or data after repeated trials (Fourie, 2014). The type of reliability that the study employed was test-reliability, which is a measure of reliability that is obtained by managing the same test twice over a period of time it can be weeks or months. The researcher administered the same questionnaires to administrators over a specific time span then Cronbach alpha was used to determine reliability. A score of 0.7 and above is acceptable to consider the instrument as reliable.

3.5 Data Analysis and Presentation

The quatitative data was sorted and coded with the use of IBM SPSS version 20. After cleaning the data the researcher carried out both descriptive and inferential statistics. The questionnaire was composed of both nominal and ordinal scales (likert scale) of measurements. Therefore the study presented frequency tables of the descriptives. The study adopted a non parametric test of relationship under inferential statistics. A spearman rank correlation was used, it is a statistical measure that is used to indicate the strength and direction of association between two variables. This type of correlation is used when the data that is being collected is ordinal in nature (Cavallo, 2019). It indicated the level and strength of relationship between the various variables that is: tangible, intangible, human resource and the extent to which they provide income. Therefore this was ranked on which of the resources provided more income to the university.

A regression analysis was used to examine the type of relationship that exists between the independent and dependent variables. A study conducted by Miranda (2016) on income generating projects of a government academic institution in the Philippines used multiple regression analysis to explain relationship between the variables. The study sought to investigate in the four objectives the relationship between the independent variables and dependent variables. The aspects that were included in the regression model were the relationship between income generation using different resources and extent of profitability that these activities generate. Conclusions and recommendations were made based on the results of the study. Deeper insights and reflections was adduced from the correlations and inferential statistics. The study used a mixed method design thus interview was

analyzed using thematic analysis. This is a process of identifying patterns or themes within qualitative data (Braun, Clarke, Hayfield & Terry, 2018). Thus helped to generate themes regarding third-stream activities and challenges that most of the senior managers face in regards to financial sustainability. These themes will give the general issues in regards to third-stream activities, skills of the staff, resources that are needed to enhance these activities. These themes generated deeper insights that the data from questionnaires might not achieve.

3.6 Ethical Considerations

Confidentially and anonymity of the respondents was maintained in the study. The respondents were not required to write their names in the questionnaire to further enhance anonymity. Individuals that were willing to participate in this exercise as respondents did do voluntarily. Thus, respondents were not forced to engage in the research. Allowing respondents to answer or refuse to answer some questions helped ensure that there is voluntary participation. The researcher did not require respondents to give their identities. All works cited was referenced and originality index report provided as part of the appendices.

The researcher obtained an approval from Ethics Review Board in Strathmore University before undertaking the study and also applied for a consent letter from NACOSTI before undertaking research in the various universities. The study fictionalized the names of the two universities with a view to protect the image of both universities. This allowed the respondents to freely give information as the names of their universities were fictionalized.

3.7: Summary of research methodology chapter

This chapter was critical in examining the methodologies that the researcher used to collect data both quantitative and qualitative. The chapter examined the data collection tools that the study used, sampling methodology as well as the target respondents. It also highlighted the various ethical considerations that the study took into consideration. Thus, this chapter informed the next chapter on the methodology, data collection tools as well as ethical considerations.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1: Introduction

This chapter outlines the findings on the influence of third-stream activities and university sustainability in Bidii and Zurii Universities. The chapter presents a cross comparison of the two universities with respect to response rate, how tangible, intangible and human resources influence third-stream activities. It outlines the findings on the challenges as well as the role of different actors in terms of income generation.

4.2: Response rate

One questionnaire tool was used to collect data from administrators and lecturers from various departments in the two universities. According to Baruch& Holtom (2008), the most adequate response rate is 52.7% while more than this is good. Mugenda and Mugenda (2003), support a response rate of 50% and above which they say is adequate; 60% is good while 70% is considered very good for analysis and reporting. The following table shows the response rate:

Table 4.1: Response rates

Questionnaires distributed in Zurii	Questionnaires distributed in Bidii	Questionnaires returned in Zurii	Questionnaires returned Bidii	Response Rate Zurii %	Response Rate Bidii %
120	100	72	88	60%	88%

The above table indicates that the response rate in Zurii was 60% while in Bidii it was 88%, both of the responses are sufficient since Saunders et al (2007), argue that 50% response rate is adequate while 60% is good and 70% is considered very good for reporting and analysis.

4.3: Demography

The study sought to acquire information in relation to age, gender, highest academic qualification, years of experience and departments that the respondents were working in the respective universities. The purpose of seeking for these data was to ascertain the characteristics of the administrators and lecturers in relation to third-stream activities.

4.3.1: Distribution of respondents by gender in Zurii and Bidii Universities

The study sought to find out the gender of the respondents therefore the administrators and lecturers were asked to indicate their gender in the questionnaire. The purpose of acquiring the information on gender was to determine the influence of gender on perceptions of third-stream activities as well as to examine the differences in responses in regards to gender.

Table 4.2: Gender in Bidii University

		Frequency	Percent
	Male	48	54.5
	Female	40	45.5
	Total	88	100.0

Table 4.3: Gender in Zurii University

		Frequency	Percent
Valid	Male	43	59.7
	Female	29	40.3
	Total	72	100.0

In the first table on gender in Bidii University 54.5% of the respondents were male while in Zurii University 59.7% were male. In comparison 45.5% were female in Bidii while in Zurii the proportion was 40.3%.

4.3.2: Distribution of respondents by age

The key reason for collecting data on the age of the respondents was to find out the predominant age in the two universities as well as their responses in regard to third-stream activities in both universities.

Table 4.4: Age in Bidii University

		Frequency	Percent
Valid	20-29	29	33.0
	30-39	39	44.3
	40-49	6	6.8
	50 years and above	14	15.9
	Total	88	100.0

Table 4.5: Age in Zurii University

		Frequency	Percent
Valid	20-29	17	23.6
	30-39	30	41.7
	40-49	10	13.9
	50 years and above	15	20.8
	Total	72	100.0

In both institutions majority of the respondents were between the ages of 30-39 years, in Bidii University the percentage was 44.3% while in Zurii University the proportion was 41.7%, this is followed by 20-29 years age bracket at 33% and 23.6% respectively. This deduces the fact that most of the workforce especially in administrative wing is young. Thus, most universities are embracing the idea of employing young taskforce as they are critical in enhancing efficiency and the strength to deliver results in a fast-paced environment. A young taskforce also means that most of them are able to give ideas especially when it comes to technological advancement. Employing young people also

helps the university not to incur much in terms of its salaries as most of them do not have many years of working experience.

4.3.3: Distribution of respondents by academic qualification

The study sought to find out the academic qualification of the respondents the reason for this was to establish the most predominant level of academic qualification of the administrators and lecturers thus informing on their knowledge on third-stream activities.

Table 4.6: Highest level of education (Bidii)

		Frequency	Percent
Valid	Diploma	4	4.5
	Bachelors	19	21.6
	Masters	52	59.1
	PhD	13	14.8
	Total	88	100.0

Table 4.7: Highest level of education (Zurii)

		Frequency	Percent
Valid	Diploma	1	1.4
	Bachelors	29	40.3
	Masters	37	51.4
	PhD	5	6.9
	Total	72	100.0

In both of the institutions the highest level of education of the participants was masters, in Bidii University it is 59.1% while in Zurii it is 51.4%, this is followed closely by bachelors in both institutions. The high percentages can be due to the fact that they work in a learning institution, which may provide a need to continue further in their education. The fact that most of them have masters could be an indication that most institutions provide scholarships, fee waivers to its employees as a way of developing its human resource and also providing motivation. It also indicates that majority

of employees nowadays seek more education as a way to enhance their opportunities especially in universities where administrative staff can also engage in teaching.

4.3.4: Distribution of respondents by position

The position of the respondents was distributed as shown in the table, the reason for this aspect was to make a comparison of the views of administrators and lecturers in regards to third-stream activities.

Table 4.8: Position in University (Bidii)

		Frequency	Percent
Valid	Administrative	43	48.9
	Teaching	33	37.5
	Both	12	13.6
	Total	88	100.0

Table 4.9: Position in University (Zurii)

		Frequency	Percent
Valid	Administrative	43	59.7
	Teaching	6	8.3
	Both	23	31.9
	Total	72	100.0

In both universities majority of the respondents hold administrative positions. In Bidii University 48.9% hold administrative positions while in Zurii it is 59.7%. However, in terms of teaching, 37.5% are teaching in Bidii while 8.3% were teaching in Zurii University. When it comes to holding both administrative and teaching positions in Zurii this percentage is higher at 31.9% and 13.6% in Bidii University. Having more administrative staff and less academic staff has an implication on the recurrent expenditure, this means that most of the money is spent on administrative staff rather than academic who should be more in a university set up. In Private universities there is better utilization of staff members as they hold both administrative and academic positions this means they do not have to employ more administrative staff. Having staff members hold both administrative and teaching

position means that the university is able to fully utilize the staff it has. However, it can imply that the staff may have many responsibilities which at times may be challenging to handle and manage.

4.3.5: Distribution of respondents by department

Bidii and Zurii universities are composed of different faculties/departments, thus the study sought to find out the distribution of the respondents in terms of their departments. The reason for this was to establish the differences in terms of third-stream activities based on the various departments.

Table 4.10 In which department do you work (Bidii University)

		Frequency	Percent
Valid	General administration	27	30.7
	Arts and social sciences	26	29.5
	Information Technology	12	13.6
	Business and Economics	21	23.9
	Pure and Applied Sciences	2	2.3
	Total	88	100.0

Table 4.11: Which department do you work (Zurii University)

		Frequency	Percent
Valid	General administration	28	38.9
	Arts and social sciences	9	12.5
	Information Technology	9	12.5
	Business and Economics	4	5.6
	Other	22	30.6
	Total	72	100.0

The above tables show that in both universities that the majority of respondents work in general administration. In Bidii University 30.7% work in general administration while the least is pure and applied sciences with 2.3%. In Zurii University on the other hand 38.9% work in general administration while based on the respondents 5.6% in Business and Economics.

4.3.5: Distribution of respondents by experience

The respondents have different working experience in the various universities as shown in the table, this information was sought as it helps to examine the views of respondents in terms of their experience.

Table 4.12: How long have you worked in the university (Bidii University)

		Frequency	Percent
Valid	0-2 years	15	17.0
	3-5 years	59	67.0
	Above 5 years	14	15.9
	Total	88	100.0

Table 4.13: How long have you worked in the university (Zurii University)

		Frequency	Percent
Valid	0-2 years	30	41.7
	3-5 years	13	18.1
	Above 5 Years	29	40.3
	Total	72	100.0

In Bidii University majority of the respondents have worked in the institution for 3-5 years while in Zurii University majority of the respondents have worked for 0-2 years. This shows that more administrators have worked for a longer period in Bidii University while in Zurii most have worked 0-2 years. The fact that most of the staff have worked longer in Bidii University shows that employees

prefer working in a public institution probably due to less workload or work pressure in terms of performance. It could also be due to better remuneration or conducive work environment. In Zurii University most of the staff have worked for 0-2 years this could indicate that probably the institution experienced high staff turnover or after 2 years most staff prefer to move to other organizations.

4.4: Influence of tangible resources on university sustainability

This was the first objective of the study, the study sought to examine how tangible resources such as land, hiring facilities, sale of agricultural products, installation of solar panels and sale of merchandise influences the sustainability of universities. In order to understand this, it was important to highlight the descriptive and inferential statistics of each section thereby allowing for the making of inferences from the results. The following results were obtained:

In Zurii university there was a positive correlation of 0.369 which was significant at a value of 0.001 between the university hiring its land and rooms. This is also seen as most of the respondents in Zurii University based on the above table (4.15), 89% strongly disagreed that the university hires out its land to generate income, this then means that the university does not hire its land and has other ways of generating income. In Zurii University as in the table (4.17), most of the respondent strongly agreed at 38% that the university hires its room in a way to enhance income generation, the institution also hires out advertisement space to other organizations that are willing to use the space. This means that the more a university hires it's the more the institution is able through word-of-mouth approaches thus more people can rent out the space. This means that private universities can explore hiring its land like field for purposes of sports grounds and for wedding and advertisement space. The more this is done then more people are able to get awareness on the facilities available in the university thus they will be interested in hiring the rooms therefore provision of more income to the university.

Bidii university results indicated that there is a positive correlation of 0.221 which is significant at 0.038 as in table (4.74), between the university hiring its rooms and engaging in agricultural activities. In table (4.16), it is evident that majority of the respondents agreed by 39.8% and 36.4% strongly agreed that the university hires out its rooms. In table (4.18) most participants strongly agreed that university engages in agricultural activities at 75%. This implies that the more university hires its rooms the more it is able to engage in agricultural activities. This is due to the fact that hiring rooms enhances publicity of the activities the university engages in for example a university is able to sell

its farm produce to the people who have hired rooms. Partnerships and networking opportunities are able to be developed through hiring of rooms. Since the university is located in a rather fertile area it can engage in dairy farming, crop farming and tree farming. Thus, marketing of its produce can be enhanced through hiring of rooms.

There is a positive correlation of 0.455 as in table (4.73) which is significant at 0.000 between university hiring its land and university engaging in agricultural activities in Zurii University. In the table (4.19) most of the respondents strongly disagreed at 80% that the university engages in agricultural activities. In table (4.15) 89% strongly disagreed with the view that the university hires out its land to generate income. This implies that the more the university hires its land able to engage in agricultural activities. Private universities can explore hiring out its land to external organizations especially on weekends or when the university is not so busy. This includes firms that are in need of advertising their products, require sports grounds, need to hold their function in an open space this can help to generate significant income to the university.

In Zurii University the results indicated that there is a negative correlation at -0.288 which is significant at 0.014 as in table (4.73) between university hiring its rooms and installation of solar panel systems. This was also the same case in Bidii university there was a negative correlation of -0.289 which was significant at 0.006 between the institution hiring its rooms and installation of solar panel systems. In comparison with Bidii University it is evident that 46.6% and 34.2% of respondents in Zurii University strongly agreed with the posited view (table, 4.21) that the university installation of solar panel has helped to generate income. In Bidii University the institution has not engaged in solar panel installation as a way of generating income. In table (4.20) on installation of solar panels the majority of participants were strongly disagreed by 68.2% that installation of solar panel in Bidii University has enhanced income generation. Therefore, it is evident that the university has not installed solar panel systems in a way to reduce expenditure and enhance income in the university.

In Zurii University as in the table (4.17), most of the respondent strongly agreed at 38% that the university hires its room in a way to enhance income generation. The above correlation implies that the more the university hires its rooms installation of solar panel systems will reduce. The more there

is installation of solar panel systems the less there is hiring of rooms. The activity of hiring rooms to external organizations means that the university is unable to fully concentrate on solar panel installations. Public and private universities can install solar panel systems in their buildings or have modern green buildings. This is due to the fact that solar panel helps to reduce expenditure and also generate income to universities as they spend less on electricity.

There is a negative correlation at -0.231 which is significant at 0.05 between a university engaging in agricultural activities and sale of merchandise in Zurii University. In comparison with Bidii University there was a positive correlation at 0.287 which was significant at 0.007 between the university engaging in agricultural activities and sale of merchandise. As indicated in the table (4.19) most of the respondents strongly disagreed at 80% that the university engages in agricultural activities. In Zurii university based on table (4.25) majority of the respondents disagreed that sale of merchandise generates significant income at the university at 48.6%. The more Zurii University engages in agricultural activities the less they sell their merchandise. This means that also the more merchandise the university sells the less agricultural activities it can engage. Private universities can explore selling merchandise as a way of enhancing their income this can include producing their own products like T-shirts, books, bags, mugs or clothing. This can be done in partnership with external organizations like alumni who would be interested in buying merchandise from universities. They can also explore agricultural activities especially if they are rural areas where land can be dedicated for activities such as dairy farming or any other form of farming, they however need to make a choice between agricultural activities or sale of merchandise.

The correlation in Bidii University implies that the more the university engages in agricultural activities the more it's able to sell its merchandise. In table (4.22) most of the participants agreed that selling of agricultural produce generated significant income, most participants agreed at 60.2%. Therefore, for public universities engaging in both agricultural activities and sale of merchandise can concurrently work for them. Most of the public universities have courses that deal with agricultural activities and enhancement and most of them are located in huge land areas. Thus, they can explore dairy farming or crop farming where they can sell the products to internal and external parties. The public university can also engage in selling merchandise such as t-shirts, clothing or facilities that

they need to sell as a way of enhancing income generation. Some of the core production items of such merchandise can come from dairy farming.

4.5: Influence of intangible resources on university sustainability

The study sought to examine the influence of intangible resources on university sustainability, in order to understand this aspect, it was vital to look into the descriptive and inferential statistics of the responses of the participants. The following key relationships emerged:

In both Zurii and Bidii University, there was a positive relationship which was significant between linkages, partnerships and developing and selling software, and the dependent variable – financial sustainability. In Zurii University, there was a positive correlation as in table (4.76), of 0.420 which is significant at 0.000 between the university engaging in linkages and selling software, and the dependent variable – financial sustainability. The descriptive statistics indicated that the institution generates significant income through developing and selling software as majority of the participants strongly agreed at 51.4% and 32.4% agreed this is based on the table (4.27). This therefore implying that the more the university engages in linkages, partnerships then it is able to develop and sell software thus generate more income. As indicated in table (4.29), most of the respondents strongly agreed at 67.6% that the university engages in linkages and partnerships as a way of generating income to the university.

Partnerships provide opportunities for innovations and funding in the universities as there are able to link up with software companies that provide chances of growth and development. The more the institution develops and sells software, the more it is able to organize linkages and partnerships with other organizations thus generate income. The fact that most of the participants strongly agreed that the university develops and sells software means that the institution has invested in human resource and provided conducive environment that enhances innovation in terms of technological advancement. This could be an indication that the university has also embraced technology to enhance efficiency and effectiveness in terms of service delivery.

Bidii University as in table (4.75) positive correlation at 0.292 which is significant at 0.006 between the university engaging in linkages and selling software, and financial sustainability. In Bidii table (4.26), 61.4% of the respondents strongly disagreed that developing and selling software generates income in the university, this is an indication that probably the university has not invested so much on software, skilled employees or lack of initiative from the employees on issues to do with software. In table (4.28), most of the respondents strongly agreed at 58% that linkages and partnerships generate significant income in the university. This means that the university has linkages with external parties who enhance income generation in the institution. This could be in terms of research and knowledge transfer. These activities help to generate income and also develop the skill of staff members. Both private and public universities can thus engage in linkages and developing software. Partnerships provide chances of interacting with software companies thus they can help to develop the staff members in universities who in turn can effectively develop software.

4.6: Influence of Human Resource on university sustainability

This was the third objective of the study, it sought to examine the influence of human resource on financial sustainability of universities. Inferential statistics were run to assess the relationship between explanatory variable and financial sustainability, the dependent variable. The following aspects were then identified: In Bidii University there was a positive correlation at 0.636 which is significant at 0.000 between staff members engaging in consultancies and departments organizing seminars and workshops. In table (4.34), 45.6% of the respondents agreed that departments organize seminars and workshops in a way to enhance income generation. This then means that most of the departments in the university actively engage in seminars and conferences that allow internal and external participants as a way of generating income in the university. The university could be having policies that encourage seminars and workshops. The staff members also could be looking for linkages thus more seminars. The postgraduate students are also vital when it comes to workshops and seminars thus this could be an indication that there is a high number of postgraduate students thus need for more seminars and workshops.

In table (4.36), most of the respondents were neutral and also agreed that staff members engage in consultancies, there was a tie at 30.7%, this then is an indication that consultancies are mostly left to the academic staff in the university. The reason for engaging in consultancies could be the university

has policies that encourage staff to engage in these activities this could be in terms of incentives provided and opportunities available. The correlation means that the more the university engages in consultancies the more departments organize seminars and workshops. The same was also in Zurii University, there was a positive correlation, at 0.234 which was significant value of 0.048, between departments organizing seminars and staff members engage in consultancies. In table (4.37) most of the respondents disagreed at 44.6% that the staff members engage in consultancies as a way of generating income in the university. In table (4.35) most of the respondents agreed at 47.3% that university organizes seminars and workshops in a bid to enhance income generation in the university.

Public and private universities therefore need to encourage more seminars as they help staff to engage in consultancies. This can be done through creating links and partnerships with private and public firms. Seminars and workshops can range from inviting external and internal parties to display their products, research and knowledge in a particular area then these parties are charges which in turn creates income for the universities. The fact that most of the universities engage in seminars means that there are management and administrative structures that support seminars. The universities also have conducive environments to support this as they have realized the value and importance of seminars.

There was also a positive correlation, at 0.349 which presented a significant value of 0.003, between university engaging in seminars and having an alumni office that helps generate funds in Zurii University. As indicated in Table (4.40), most of the respondents agreed (58.1%) that there is an alumni office that helps to generate funds. This contrasted with observations from Bidii University where most of the respondents strongly disagreed on this fact. This is an indication that in Zurii University, there are strong relations between the institution and former students. There could also be a strong attachment between the students and institution thus the desire of the students to give back to their institution. There are marketing and networking strategies that the alumni office has employed; this translate into the ability to raise more funds. The management and administrative support could also be a determining factor in alumni office raising funds in the institution. The correlation implies that the more the institution engages in seminars and workshops the more the initiatives generate funds. This then means that seminars and workshops create conducive environments for alumni office to also reach out to former students. External parties are able to

display their products during these seminars increasing their visibility in alumni offices. This correlation also implies that the more alumni office generates funds the more workshops are conducted in the university. Alumni office is able to reach and invite former students in workshops and seminars in the university.

4.7: Challenges of third-stream activities and role of different actors

This was the fourth objective the study. The researcher sought to examine the challenges and role of different actors in third-stream activities. These income generating activities face myriad of challenges from financial, management support and human resource. To examine this aspect, the study combined the descriptive and inferential statistics as shown below:

In Bidii university there was a positive correlation, at 0.419 with a significance value lower than 0.000 (Table 4.78), between the university providing annual training and staff members provision of incentives. This shows that the more annual training is provided the more incentives will be given in the university. As indicated in table (4.43) most of the respondents disagreed (51%) that the university provides annual training regarding income generation, this is therefore an indication that most of the respondents are not given training in terms of income generation thus they cannot be able to effectively participate in income generation activities. As indicated in table 4.45,) it is evident that majority of the respondents strongly disagreed at 75.6% with the view that staff members are given incentives, thus staff members are not given the necessary incentive to participate in income generation therefore most of them are unwilling to participate. Provision of annual training helps to enhance motivation of employees as they become aware of the importance of income generation. Appreciation of the possibility of incentives serves to enhance performance. Training can be provided in collaboration with internal and external parties.

There was also a positive correlation, at 0.332 which with a significance value of 0.002 as indicated in table 4.78, between university providing annual training and having effective policies and structures regarding income generation and the dependent variable financial sustainability. This means that the more the university provides annual training regarding income generation the more the chances of having effective policies and structures regarding third-stream activities and vice versa. Table (4.51) indicates that 56.7% of the respondents strongly disagreed with the view that there are effective policies and structures regarding income generation. Lack of effective policies could be due

to reluctance to establish other income generating opportunities, lack of qualified or skilled personnel, poor staff morale and bureaucratic systems. Public universities therefore ought to provide training to its staff members on how to enhance its income, this will enable the organization to come up with policies that enhance third-stream activities. Training can be done annually in collaboration with internal and external parties that have experience in income generation.

In comparison with Zurii University the study also revealed that there was a negative correlation at -0.251 as in table (4.79) which was significant at 0.033 between the university providing annual training and staff members being given incentives. In table (4.44) most of the respondents were neutral at 44.6%, on the aspect of the university providing annual training in regards to income generation. This means that the more the university provides annual training the less incentives staff members are given in the university. Private universities can therefore focus on either providing annual training to its employees or incentives depending on the budget and the objectives that the institution intends to achieve. Training helps to equip the employees while incentives help to provide the motivation that employees require.

In Bidii University a positive correlation existed between staff members being given incentives and management team providing adequate leadership at 0.226 which was significant at 0.034 as in table (4.78). In table (4.47) most of the respondents strongly disagreed at 57.8% that management provides adequate leadership in terms of third-stream activities; this is therefore an indication that most of the staff members do not have believe that management is geared towards financial sustainability. This means that the more staff members are given incentives this is an indication of better management team that provides adequate leadership. The management team determines the type of incentives, when to give incentive and who to give incentive. Public universities ought to provide the appropriate leadership which helps to stir and motivate employees towards income generation. It is also necessary to give incentives to employees in terms of remuneration, promotion and vouchers as these helps to motivate employees.

The study also revealed that there was a positive correlation at 0.535 which was significant at 0.000, table (4.78), staff members being given incentives and university having effective policies and structures that enhance income generation in Bidii University. In table (4.51), shows that most staff

members strongly disagree on the fact that there are effective policies in regard to income generation, they strongly disagree at 56.7%. This is an indication that when there are effective policies and structures then the process of incentive distribution to staff is effective. Therefore, public universities ought to put up policies and structures that are efficient and effective in terms of income generation. The staff members ought to be involved in formulating and implementing these policies this then means the university is able to come up with effective incentive.

The results in Zurii University indicated that there was a positive correlation at 0.245 which was significant at 0.038 as in table (4.79) between major challenge in income generation and staff members being given incentives. The above correlation implies that when incentives are given to the staff members then their morale improves. It is necessary for private universities to enhance the morale of staff members this can be done by providing a conducive environment and better remuneration. Better incentives help to enhance staff morale of the staff members; this can be done by encouraging staff members to participate in third-stream activities after which they can be awarded or recognized this enhances their morale.

There was also a negative correlation at 0.485 which was significant at 0.000 between major challenge in income generation and staff members understanding their role in income generation in Zurii University. An increase in staff understanding their role in income generation causes a decrease in major challenge towards income generation. Private universities can focus in helping staff members understand their role towards income generation as this will help decrease staff morale. In table (4.42) above the major challenge in terms of income generation is staff morale, this therefore indicates that most of the staff members are either not motivated or have workload that may be too much. Most respondents agreed at 59.5% that staff morale is the challenge in the university. The major challenge in the study was staff morale, thus when the morale of staff increases, they can understand their role in relation to income generation. Private universities should enhance the morale of staff by providing conducive, better remuneration and effective management. This will help to enhance the staff members in understanding their role in terms of income generation.

A negative correlation existed at -0.422 which was significant at 0.000 as in table (4.79), between staff members being given incentives and staff members understanding their role in terms of income generation in Zurii University. In table 4.46, 41.9% of the staff members agreed that the university provides incentives for staff who participate in income generation activities. In table (4.50) most of the respondents agreed at 45.9% that staff members understand their role in regards to income generation. The more staff members understand their role in terms of income generation then incentives reduce. This means private can focus on either making staff members understand their role when it comes to income generation or provide incentives to the staff. Annual training, seminars and workshops can help staff members understand their role thereby creating a sense of responsibility.

A significant relationship at 0.046 which was positive correlation at 0.236 as in table (4.79), existed between staff members being given incentives and there being effective policies regarding income generation in Zurii University. This means that the more universities have effective policies then they are able to manage the process of providing incentives to staff members. In table (4.52) most staff members agreed at 59% that there are effective policies regarding income generation. The effective policies could be due to proper management, leadership and efficiency in the university.

There was a positive correlation at 0.266 which was significant at 0.024 as in table (4.79), between the management team providing adequate leadership and there being effective policies and structures regarding income generation in Zurii University. In Table 4.48 most of the respondents agreed at 56.8% that management team provides adequate leadership in terms of income generation. In table (4.52) 59.5% of the participants agreed that the university has effective policies and structures in terms of third-stream activities. This means the university has tried to have policies to help in income generation. Better management helps to provide the adequate policies and structures in regard to income generation.

4.8: University Sustainability

The study sought to examine the aspect of university sustainability in both Zurii and Bidii Universities, to examine this relationship it was necessary to use multiple regression to analyze total income which is a combination of first, second and third-stream income. The researcher was only able to get data from Zurii University, these financial statements have been publicized in Bidii University these data on total income, research income and fees. The data on Zurii University was obtained from financial statements of 2009 to 2018:

Table 4.14 Zurii University Financial Statements of 2009 to 2018

Years	Fees	Total income	Research Income
2009	835,522,000	911,739,000	49,860
2010	968,552,000	1,118,142,000	59,175
2011	1,055,672,000	1,210,558,000	52,624
2012	1,237,625,000	1,395,460,000	278,000
2013	1,344,346,000	1,614,227,000	89,710,000
2014	1,645,361,000	2,013,401,000	126,017,000
2015	1,931,631,000	2,348,860,000	140,055,000
2016	2,003,296,000	2,656,411,000	202,818,000
2017	2,228,677,000	2,958,149,000	169,409,000
2018	2,990,000,000	3,572,000,000	181,568,000

Table 4.15 Multiple Regression Analysis

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. reg TotalIncome Fees ResearchIncome
```

Source	SS	df	MS		
				Number of obs	= 10
				F(2, 7)	= 511.36
Model	6.9896e+18	2	3.4948e+18	Prob > F	= 0.0000
Residual	4.7840e+16	7	6.8343e+15	R-squared	= 0.9932
				Adj R-squared	= 0.9913
Total	7.0374e+18	9	7.8194e+17	Root MSE	= 8.3e+07

TotalIncome	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Fees	1.065621	.0863735	12.34	0.000	.8613797	1.269862
ResearchIncome	2.166027	.6915227	3.13	0.017	.5308356	3.801218
_cons	5.21e+07	9.37e+07	0.56	0.595	-1.69e+08	2.74e+08

Total income = β_0 + β_1 Fees +β_2 Research income + μ

Total income = 5.21e + 07 + 1.065621 Fees + 2.166027 Research income

β_0, β_1 and β_2 are the regression coefficients while μ is the error term

β_0 is the intercept.

β_1 measures the change in *y* with respect to *x*1, holding other factors fixed.

$\beta_2$measures the change in *y* with respect to *x*2, holding other factors fixed.

According to the results

β_0 = 5.21e+07 : This is the intercept

β_1 = 1.065621: This means that a change in fees causes a total income to change by 1.065621 holding all other factors constant

β_2 = 2.166027: This means that a change in research income causes total income to change by 2.166027 holding all other factors constant

According to the p values both fees and research income are statistically significant explanatory variables.

The implication of the above regression is that research income has a greater influence on the total income, since if research income increases by 1 unit then the total income goes higher by 2.166 units. This implies that second stream income is critical in enhancing total income of private universities, there is therefore need to invest in research. Universities can do this by providing platforms to carry out research, providing funds and also annual training to its employees on the importance and need of research in universities.

4.9: Qualitative data

The study sought to examine the opinions and views of the head of departments in both Bidii and Zurii Universities in regards to income generation. The purpose of collecting this data was to further understand the extent to which the two universities have engaged in income generation, the challenges and the opportunities available to them. In Bidii University 5 head of departments were interviewed while in Zurii University 4 head of departments. The number was reached as at the 5th respondent in Bidii a point of saturation had been reached this also applied in the case of Zurii University.

Themes were developed in the study as regards to third-stream activities; the following themes were developed in both Bidii and Zurii universities:

1. **Key issues facing universities currently in terms of income generation**

The following themes were identified in regards to the above question:

a) Inadequate skilled manpower

This is a challenge that both Bidii and Zurii universities face in terms of income generation, the personnel employed lack adequate skills in regards to income generation. A head of department in Zurii University mentioned "*human resource plays a critical role in terms of income generation and therefore lack of skilled manpower slows the process of generating more income."*

In Bidii University a respondent mentioned *"employees are the backbone of the university and lack of skilled manpower influences the general sustainability of the university."*

This implies that most of the employees in the organizations focus on accomplishing the tasks as in their job description and would not go an extra mile to come up with innovative practices in terms of income generation. It could also indicate that employees either have the education in terms of degrees and masters however most lack creativity and skill when it comes to income generation. The other implication could also be either most employees are employed without the necessary qualification due to other vices such as tribalism or nepotism. Therefore, there is need to examine the recruitment procedures in universities to ensure that skilled employees are employed. The above statements also imply that either universities do not provide periodic trainings to enhance the skills of employees thereby most of them are not skilled in the area of income generation.

b) Overreliance on government funding

This was a general feeling in Bidii University, which is a public institution most of the respondents felt that there was an overreliance on the funding provided by the government. The institution depends on the government for its recurrent and development expenditure, however the funds provided are not sufficient. A particular respondent mentioned "*being a public university there is reluctance to look for other means of income generation at the same time government funding is declining, there is urgent need to relook the funding models of public universities.*"

Another respondent in Bidi University mentioned "*based on the recent tough economic times, most public universities have tight budgets as there is an overreliance on government funding*."

The above statements imply that most public universities are reluctant to look for other income generation activities due to government funding. Thus their financial sustainability is upon the government this in turn compromises on quality education in most public universities. A delay in

funds provided by government means that recurrent and capital expenditures are affected. This leads to aspects such as delayed payment of staff members and poor facilities this eventually has a negative impact on performance of employees as well as the standard of education provided to the students.

c) Lack of motivation

This was a general feeling in both universities, the staff in both universities lack the urge to participate in income generation especially if they feel they will not have much gain themselves.

In Bidii university a respondent mentioned "*staff look at who gains more is it them or the university, if there is no much incentive or motivation for them, they would rather do what is within their job Description.* "In Zurii University a staff mentioned "*motivation is vital in any activity it is the drive that enables people to perform certain duties and activities without it then there is no point in engaging in an activity."*

These statements imply motivation is critical in an organization and without it most initiatives will not take place. Lack of motivation could be caused by high workload in departments thus most of the staff are overworked and their remuneration is low. This then means most will not be willing to undertake other initiatives. Job insecurity is also another factor that causes lack of motivation, either contracts that are short or an environment that is not conducive for growth and development. There is need to provide recognition and incentives to employees when they participate in activities that enhance income generation. Proper direction and leadership as well as balancing work among departments helps to provide the necessary motivation. Bureaucracy is a challenge in most public universities so it hinders initiatives such as income generation. Processes need to be effective and efficient as this helps to avoid unnecessary drag in activities.

d) Fixed mindsets

In both of the universities there was a general feeling that the staff had a fixed mindset that fees is the only way of generating more income. In Zurii University a staff mentioned "*student fees generate 90% of the income, most staff members are unwilling to look into other ways of enhancing income, therefore their minds are fixed on increasing fees."*

In Bidii University a respondent mentioned *"fixed mindsets influences the ability of most universities to generate income, most institutions believe that school fees is the only way of generating income. Therefore, they would rather increase fees instead of seeking alternative means."*

The above statements imply that most employees and management still uphold the fact that fees are the main source of income and would rather increase fees instead of employing alternative measures of income generation. Fixed mindsets could be due to lack of creativity, motivation, poor management and reluctance to explore alternative mechanisms of generating income in universities. In public universities fixed mindsets could also be due to overreliance on government funding while in private universities it could be due to the fact that most of universities enjoy good public image and have strategically positioned their brands.

e) Inadequate physical infrastructure

Physical infrastructure is critical as it helps to enhance income generation in universities. In Bidii university most of the respondents felt that the infrastructure was inadequate to accommodate more students despite having land. It was also noted that the university has projects that have stalled for a long time. A respondent mentioned "*Inadequate physical infrastructure definitely influences income generation without more of these income generation is definitely a challenge as well as quality, most project have stalled.*"

Most public universities lack adequate physical infrastructure due to lack of adequate funding from the government. Their recurrent expenditures are excessively high thus not much of the funds is left to improve the facilities in the universities. Lack of proper management of the projects also causes most of the facilities to stall. Projects could also be stalling due to lack of prioritization, proper planning and constant project design variation.

2. Meaning of university sustainability

The following themes were developed in the course of the above question:

a) Ability of the university to meet its needs

This was the general opinion of the respondents in both Bidii and Zurii universities, most of the head of departments felt that for a university to be sustainable there is need for them to meet its needs.

A respondent in Zurii mentioned "*a university is termed sustainable if it's able to successfully meet its needs be it financial and educational.*"

A head of department in Bidii University mentioned "a *university is termed sustainable if it's able to meet all the needs that it's mandated to meet that is economic, social and educational.*"

This then implies that university sustainability encompasses various aspects from economic, social and political. Therefore, in order for a university to meet its needs there is need to enhance proper

planning of its resource, enhance resource utilization and focus on innovation. Universities ought to meet the needs of various stakeholders from students, employees, government and the nation.

b) Compromise the future generations

According to most respondents a university is termed sustainable if it's able to successfully meet the present needs without compromising the needs of the future generations. Thus the present influences the future. A respondent in Zurii answered "*university sustainability is not only meeting present needs but also not compromising the future generations in their pursuit of meeting their needs.*"

In Bidii University a respondent answered "*as universities meet their present needs they should not compromise their future generations rather foster their ability to meet those needs.*"

The above statements imply that universities have obligations to not only enhance sustainability at the present rather in many years to come. This aspect can only be enhanced if there is prudence, integrity, accountability and transparency on how funds are used and spent in universities. Provision of services ought to be effective and efficient.

c) Exist constantly

Universities should be able to exist constantly and consistently; this was also a general feeling in most of the respondents. A head of department in Bidii University answered "*apart from meeting present needs a university needs to exist constantly therefore stakeholders need to come together and help enhance university sustainability."*

A respondent in Zurii answered *"sustainability means the ability of a university to exist constantly in the next five years or so."*

This implies that for a university to exist constantly then it needs to enhance its strategic positioning, its brand, investments in booth its tangible, intangible and human resource. Therefore, part of the mandate and vision of a university is enhancing existence.

3. Role of universities in achieving financial sustainability

Universities play a critical role in achieving their own financial sustainability however in Bidii universities most respondents felt that the government also plays a critical role in financial sustainability of universities. The following themes came up in the course of the interview:

a) Creativity and innovation

Universities can achieve financial sustainability if they are creative and innovative in their practices, a respondent in Bidii mentioned "*creativity and innovation are necessary for universities to enhance their finances, there is need to strategize on other income generating activities."*

Another respondent in Zurii mentioned *"innovative and creative financial models are needed in both public and private universities"*

Universities need to provide an environment that enhances creativity and innovation. This can be done through provision of trainings, skill improvement workshops and seminars. There is need for local universities to enhance partnerships and benchmarking from other universities. Enhancing knowledge transfer is critical universities.

b) Government's role

This was a major opinion in Bidii University, the respondents felt that the government should play a role in enhancing income being that the university is a public institution. A respondent mentioned in Bidii "*it is not only the role of the universities alone rather the government plays a critical role in enhancing income generation, they should provide the necessary support base."* This particular issue was mentioned in Bidii while in Zurii University it was not mentioned.

This implies that on one hand there is an overreliance on the government in most public universities and universities feel that they have not received the necessary support from the government. This could be due to the fact that there is an increased growth in the number of public universities and also the government has many financial obligations to meet. Employees in universities need to make use of the knowledge and resources they have to enhance income generation for sustainability to occur in these public universities there is need for innovative funding models.

c) Stakeholder participation

In Zurii university unlike Bidii university most of the respondents felt that it was the role of all stakeholders in the university to enhance financial sustainability. One mentioned "*it is the role of all stakeholders from management to the administration to enhance income generation*"

Inclusive participation is necessary if universities are to enhance its sustainability various stakeholders help to create the necessary partnership that is needed to enhance financial sustainability. Involving all employees in projects help to enhance ownership and thus provide sustainability of universities.

d) Diversify financial models

It is important to diversify financial models in universities as it will enhance financial sustainability of the universities. In both universities most of the respondents agreed that they need to diversify

their financial models in a bid to enhance sustainability. One participant in Zurii University mentioned "for *constituent sustainability it is clear that universities need to enhance their financial models as this is a necessary goal and way of the university."*

A respondent in Bidii University mentioned that *"the current financial models are facing challenges in achieving its goals, it is definitely necessary to relook and come up with models that will enhance sustainability."*

The above statements imply that most of the universities need to come up with sustainable financing models that will combine mainstream, second stream and third-stream income. It is evident that in the near future most of the models might not be sustainable thus it is necessary to make use of the resources endowed in universities from tangible, intangible and human resources.

4. Key resources critical in enhancing third-stream activities

There are several resources that are necessary in enhancing income generation in universities. The following themes were developed:

Human resource

In both the institutions the respondents felt that the human resource of a university is the backbone of the success of an institution. In Zurii University a respondent mentioned "human *resource is the driving force of any university in a bid to enhance income generation."* In Bidii University *another respondent mentioned "people who are employed in an organization are critical, human resource definitely is a critical player when it comes to income generation."*

Human resource is critical in an organization thus there is need to enhance skill development, provide incentives, enhance opportunities for growth and development. Universities ought to have clear recruitment procedures that ensure that qualified and skilled personnel are employed. Inclusive participation of employees in enhancing financial sustainability is critical as they help to provide the necessary ideas and support.

Funds

In both universities the respondents felt that funds are necessary for people to explore other income generation activities. One respondent in Zurii mentioned *"the funds in an institution can be used to create more money"* A respondent in Bidii university mentioned *"an institution can engage in income generation activities provided they are given funds; to get money you need to spend money."*

This implies that universities need to have the necessary financial base to be able to invest in other income generating activities. Thus there is need to have partnerships and donations that help to increase financial base of these universities.

Tangible resources

In Bidii University, most of the respondents felt that tangible resources are critical in enhancing income generation. This includes land and facilities, a head of department answered "tangible *resources such as land is critical in income generation, through land an institution can be able to develop it and make it more productive. A university with facilities can definitely enhance income generation."* This statement implies that it is not only enough to have human resource rather other resources ought to be present in order for an organization to successfully engage in income generation. Tangible resources such as land help a university to engage in agricultural activities, build facilities that enhance income generation.

Solar panel installations

In Zurii university most of the respondents felt that installation of solar panel systems has enhanced income generation in the university. A respondent mentioned "*with solar panel installations it has helped to reduce expenditure as well as green buildings which allow more lighting, with these panels university is able to sell KWH to Kenya power*" In comparison with Bidii university however they have not installed solar panel systems and most of the buildings are not green thereby huge amounts are spent on electricity. This means that most private universities maximize on their resources and try to reduce expenditures. There are also high innovation levels and less bureaucracy in private institutions. They have modernized most of their services thus enhancing level of efficiency and effectiveness.

5. Challenges in third-stream activities

Management support

In Bidii University most of the respondents felt that lack of management support in third-stream activities is a challenge. A respondent mentioned *"management support is critical for an institution to enhance third-stream activities, without it much activities cannot go on"* This implies that most employees in universities feel that the management team does not provide adequate support needed to enhance third-stream activities. This could be due to the management styles employed by the

universities where there is more of a top-down management style, this does not provide the necessary interaction between the employees and the management.

Lack of motivation/incentives

In both of the institutions the respondents felt that the staff were not motivated to engage in third-stream activities. A respondent mentioned in Zurii *"if the staff are not motivated to engage in income generation then it will not yield much."* In Bidii University another answered *"staff who are motivated to engage in third-stream activities can be able to do much."* This indicates that motivation is critical for third-stream activities. Employees need to be provided with the conducive environment and incentives.

Insufficient funds

Funds definitely play a critical role in terms of income generation, most of the participants felt that with more funds they can be able to do much. A respondent mentioned in Zurii University *"with funds institutions can be able to explore on alternative means of generating income."* In Bidii University a respondent answered *"income generation can be fueled up with more availability of funds.* "Thus from the statement above it is clear that most income generating activities are investment opportunities for universities. The challenge could be that most of the universities have financial crisis and therefore they do not have surplus amounts to invest in other activities.

Inadequate skills and knowledge

Staff who are skilled and knowledgeable are critical in enhancing income generation this was the general feeling in both of the universities. In Zurii University a head of department mentioned *"having staff who are skilled in the area of income generation is important as it helps."* In Bidii University a staff mentioned *"lack of skilled manpower is definitely a challenge when it comes to income generation, there is need to have skilled personnel who can help in the process of income generation."*

The statements above indicate that most of the employees have the papers in terms of degrees however they are not able to be creative in terms of income generation. There is an overreliance on traditional models of funding and most employees either are more concerned on what the institution ought to do for them rather than what impact they need to have on the organization.

Creative financial models

There is need to have models that will help to enhance income generation, most of the respondents that were interviewed felt that universities need to rethink the financial models that they are using. In Bidii university one of the staff answered "*there is need to have creative financial models that will help to avoid overreliance on government funding, universities need to make use of the resources they have to make more income.*" In Zurii University another staff mentioned "*as much as at the moment 90% of the finances come from the student fees, there is need to rethink on creative models of finances as in the near future increasing student fees may not be the alternative measure to undertake*." The above statements indicate that most employees agree to the need to have models that are creative. This means that the current traditional models of financing university education face challenges of sustainability and might not be effective in the few years. The current models especially in public universities overly on funds provided by government will little exploration on other income generating activities.

6. Policies and processes of income generation

In both Bidii and Zurii universities it was not clear the policies and processes that have been put in terms of income generation. Most of the head of departments felt that the policies were either not there or not clear to the staff. The following themes were developed:

Lack of clear policies and processes

Most of the respondent felt that the universities have not laid clear policies and processes in terms of income generation. In Zurii University a respondent mentioned "*policies help to provide the clear path to undertake, it is important to have clear policies*." In Bidii University a staff mentioned "*these policies and processes might be there however they might not be clear therefore implementation is a challenge*."

It is evident that universities have policies however most employees are either not aware they exist or have not bothered to read these policies. Thus there is need to have mechanisms that enhance proper implementation of these policies. It could also be that polices are complex and have been developed by a few people at the management level and have not taken proper consideration of the

employees at the bottom. There is need to have forums that allow employees to interact with these policies and be given the necessary training.

Staff involvement and awareness

The people who were interviewed felt that the staff need to be involved and aware of the policies and processes of income generation. In Zurii University a staff mentioned "*for policies to be effective there is need to involve the staff and make them aware of their roles and responsibilities*." In Bidii University a staff mentioned "*most staff are not involved or aware of the policies and processes of income generation, it is only left to a few individuals*."

This means that most employees feel left out when it comes to policy preparation and implementation therefore it's more of top down style of management instead of inclusive involvement of all staff members.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1: Introduction

The purpose of the study was to investigate third-stream activities, challenges that arise in these activities, viability of university activities and roles of different actors. In order to achieve this the researcher collected data from university administrators and head of departments in various faculties. A mixed method approach was used in the study specifically sequential. This chapter will thus present the summary, conclusion and recommendations of the study this is based on the findings that were established in chapter four.

5.2: Summary of the study

The study sought to examine the third-stream activities, challenges that arise in these activities, viability of university activities and roles of different actors. To examine this aspect, the study developed four research objectives, specifically on the influence of tangible, intangible and human resources on university sustainability. The final objective was on the challenges and role of different actors in third-stream activities. The study's research objective was guided by resource based conceptual framework which has been used by a study conducted in UK by Prince (2007); on Strategies for developing third-stream activity in new university business schools. A conceptual framework was further developed. The researcher used two data collection tools specifically a questionnaire and an interview, these were developed with the help of the conceptual framework.

The study had targeted 120 respondents in Zurii while 100 in Bidii university the response rate in Zurii was 60% while in Bidii it was 88%. A simple random sampling method was used to get the respondents. The study used a mixed method approach specifically sequential method thereafter quantitative data was analyzed using SPSS while qualitative data, thematic analysis was used. The following findings in the study were then established.

5.3: Summary of the findings

5.3.1: Influence of tangible resources on university sustainability

This was the first objective of the study where the study sought to investigate the influence of tangible resources on university sustainability. It was established that in Bidii University the tangible resource that played a critical role in enhancing university sustainability was engaging in agricultural activities, selling agricultural products and sale of merchandise. Therefore, this means that the public institution has been engaging constantly in agricultural activities in a way to enhance income generation, 47.7% of the respondents agreed that Bidii University has engaged in agricultural activities and thus enhanced income. A study conducted by Chumba, Muturi & Oluoch (2019), on the effect of financial investment strategies on the financial sustainability of universities in Kenya, identified that the most significant third-stream activity is consultancies however from this study agricultural activities is also a major significant third-stream activity. The reason behind engaging in agricultural activities is because the institution has vast land the institution is on a 61-acre land. Part of this land has been given to agriculture thus there is dairy farming, beekeeping and crop farming. This has been able to generate income however the activity has faced challenges such as inadequate funding.

The study also found out that there was a positive correlation between the university hiring its rooms and engaging in agricultural activities. Public universities need to hire its rooms for parties who are interested in holding meetings this allows for marketing opportunities for their products. There is need to establish warehouses that allow for storage, distribution and marketing of their products. In the findings the university has also not installed solar panel systems, as part of their strategic planning public universities need to build green buildings that enhance lightening and solar panel activities. This will help reduce expenditures on electricity which in turn enhances income in the university.

In Zurii University which is a private institution there was a difference the university does not engage in agricultural activities as compared to Bidii University. However, the university has installed solar panel systems in a way to enhance its income and also reduce expenditure. The study found out that there is a negative correlation between hiring of rooms and installation of solar panel systems. In 2018, the university generated 784,058 KWH of energy out of this it sold 188,994 to Kenya Power and Lightning Company. It was important to note that the university has also invested in an Energy center in a bid to increase and manage its solar energy income. In 2018 based on the university's annual report of 2018, the university had tangible and intangible resources worth 5,145,000.

It is evident that tangible resources are critical in university sustainability. This is because with tangible resources an institution is able to invest and make use of its resources thereby generate income, this supports the study that was conducted by Riechi (2012), on revenue diversification in universities in Kenya, where his findings indicate that tangible resources are important in income generation. Zurii university has installed solar panel systems thereby 67% of their buildings are green. Private universities can enhance their income through activities such as endowment, university hospitals, enterprises, entrepreneurship programs and consultancy as Malaysian universities have done (UNESCO Bangkok, 2012). A study conducted by Mahamood & Rahman (2015), on financing universities through endowments explained the role of endowment in enhancing university income and how they can enhance income generation significantly.

5.3.2: Influence of intangible resources on university sustainability

This was the second objective of the study; the researcher was interested in examining to what extent does intangible resources influence university sustainability. In Bidii University, there was a positive correlation between the universities engaging in linkages and developing of software, 71% of the respondents agreed that linkages and partnerships generated significant income in the last 5 years. The university has had partnerships with private organizations as well as public, this is in a bid to enhance its income. It was also important to note that the university has a collaboration and partnership policy showing its commitment to enhance partnerships. Through partnerships the university has been able to receive donations in terms of funds and facilities. The university was able to generate income worth 5 million based on the findings.

In Zurii University the study established that linkages and partnerships are the intangible resource that generate significant income in the university. 84.7% of the respondents agreed that linkages and partnerships generate income to the university. There was also a positive correlation which was significant between the university engaging in linkages and developing of software. In 2018 based on the university annual report of 2018, the university had tangible and intangible resources worth 5,145,000. The university has had partnerships with private and public institutions this has been beneficial in enhancing income generation. Based on its 2018 annual report the university had 94 partnerships, which were important in generating endowments and donations worth 513 million this is an increment of 33%. Thus based on these findings it is important to note that linkages and partnerships are critical in enhancing third-stream income. The findings on partnerships concur with

a study conducted in USA, California by Aubrey (2018), on income generation in universities that partnerships are some of the important and vital ways of generating income in universities. However, through this study it was established that there is a positive correlation which is significant between linkages and development of software in both public and private universities.

Public and private universities ought to fully exploit opportunities available in terms of partnerships and linkages this is due to the fact that through these activities they are able to enhance knowledge, facility and software development. Universities can also explore enterprise development centers/start up hubs where they can assist small and medium enterprises in planning, capacity building, training and value added services. This helps in enhancing income generation through its knowledge base and capacity building. Startup hubs also help to enhance entrepreneurial skills among students who eventually contribute towards alumni funding and fundraising in universities. These hubs can be established through collaboration with external organizations/businesses that have successfully implemented businesses. There is need to have effective policies that govern the partnership and agreement.

5.3.3: Influence of human resource on university sustainability

The third objective was to examine the influence of human resource on university sustainability, the findings from the study indicate that human resource is critical in third-stream activities in universities. This is from the top to the bottom employees, the management helps to stir the correct direction towards income generation while the administrators and other employees are critical in implementation. There was a positive correlation between universities engaging in consultancies and organizing seminars in both Bidii and Zurii universities. This means that the more universities engage in consultancies then they are able to engage in more seminars. In Bidii University, 59.1% of the respondents stated that human resource is critical when it comes to university sustainability. Thus the leadership and management provided by an institution influences how a university is able to implement and strategize on third-stream activities. It is important to involve staff in income generation activities as it helps in developing a sense of ownership. Through human resource, in Bidii University they were able to engage in seminars and workshops that helped to generate significant income.

In Zurii University, the study indicated that 81.9% agree that human resource is critical in enhancing third-stream activities. People in an organization help to drive the agenda of implementation of third-stream activities. Employees are able to engage in seminars, workshops and consultancies in a university. In Zurii, seminars and workshops generated significant income in the university, consultancies were also critical. The university was also able to generate increase in consultancy income by 46% in 2018, this is based on the 2018 annual report of Zurii University. The findings on the role that human resource is critical in enhancing income generation concur with the findings by Riechi (2012), on revenue diversification in universities in Kenya, the study identified through human capital theory that management and skilled manpower is critical in enhancing third-stream activities. However, through this study it was established that there is a positive correlation between universities engaging in consultancies and organizing seminars.

The study also found out that in both Zurii and Bidii universities the workforce is young. In both institutions majority of the respondents were between the ages of 30-39 years, in Bidii University the percentage is 44.3% while in Zurii University it is 41.7%, this is followed by 20-29 age bracket at 33% and 23.6% respectively. A young taskforce means that the universities are able to make use of individuals at their prime age thereby enhance efficiency and effectiveness when it comes to achievement of objectives. Most young people have energy and new perspectives regarding issues thereby development, most young people are eager to learn and gain experience. It also means that the university's wage bill will not be high as they have not acquired more experience thereby have to be paid more. A young taskforce means that they are able to assist in the area of technological advancement as most of them are familiar with technology.

The study also noted that in Bidii University majority of the respondents have worked in the institution for 3-5 years while in Zurii University majority of the respondents have worked for 0-2 years. In Zurii 41.7% have worked for 0-2 years while 67% have worked for 3-5years in Bidii. Individuals working for a short time in the organization means that employees are able to give their best during this short span time. It also is good as the more individuals stay in an organization they get used to its systems and activities thus not a good factor.

5.3.4: Challenges and role of different actors in third-stream activities

This was the fourth objective of the study, it sought to examine the challenges of third-stream activities and the role of different actors when it comes to third-stream activities. Several challenges were identified in the study, in both Bidii and Zurii universities based on the interview that was conducted on head of departments, they indicated that lack of adequate skilled personnel is a challenge that greatly influences university sustainability. The study findings also indicated that motivation and incentives to employees influences to a great extent the implementation of third-stream activities this concurs with a study conducted by HEFCE (2008), on third-stream projects in 6 UK Universities, the findings of the study indicate that motivation of the employees is critical if the management is to effective implement third-stream activities therefore enhance income generation. In Bidii university majority of the respondents agreed that inadequate funds influences to a great extent third-stream activities thus a challenge.

In Bidii University the findings in the institution indicate that an overreliance on government funding is a challenge in third-stream activities. Head of departments indicate that the institution being a public university relies heavily on funding from the government therefore most employees are not willing to engage in other activities to generate more income. Thus employees have fixed mindsets and are unwilling to explore other income generating activities and would rather approve increase in fees as a way of enhancing income. This concurs with Nganga (2018) study's that universities have proposals to increase fees up to three times in a bid to enhance income rather than having innovative practices that can enhance university sustainability. Collaboration among all the stakeholders is imperative to find a feasible and preferable outcome towards the successful development of third-stream activities in universities. It is necessary for universities to identify institutions that have significantly made income through third-stream activities and take their staff for benchmarking opportunities. Involving staff members in third-stream activities is crucial for them to succeed, staff involvement leads to ownership of projects and there after improves sustainability and success. Change of fixed mindsets starts with the management, there is need for proper leadership and provision of annual training on how universities can enhance their sustainability.

Miranda, Chamorro & Rubio (2016), conducted a study on income generating projects in University of Eastern Philippines, the study identified that the major challenge of income generating activities is the lack of skilled personnel in terms of income generation. This study found out that there is a

positive correlation between staff morale and incentives provided to staff members. In Zurii University the study identified that the major challenge of third-stream activities is staff morale at 59.5%. This means that universities ought to provide incentives, annual training, benchmarking opportunities and better management in order to enhance staff morale which is a great factor for third-stream activities to be implemented effectively.

5.4: Conclusion

In conclusion it is clear that universities need to further explore the area of third-stream activities. Income generation is critical in university sustainability for universities to survive tough economic times it is important for them to fully exploit the resources they can acquire. It is also important for the universities to motivate its employees, provision of incentives and positive drive helps employees to be able to further their efforts in third-stream activities. Management and proper leadership is also necessary this is because management helps to provide the guidance and direction in terms of third-stream activities. Innovation and creativity is critical for universities to be able to withstand tough economic times, from the study it is evident that Zurii University's ability to use solar panel systems has critically been of help in reducing electricity bills and thereby enhancing income generation in the university. Public universities also need to fully exploit its resources such as land, overreliance on government funding may not be sustainable. Universities have to come up with creative and innovative practices that would enhance income generation.

Based on the findings it was also evident that the policies in terms of income generation are not clear to the employees and most of them are unwilling to read these policies. Most employees would rather stick to their job descriptions either due to workload that is unmanageable. The findings also indicated that human resource is a critical component in the area of third-stream activities thus most employees should be given a chance and be involved in the area of third-stream activities. To enhance staff morale, it is necessary to clearly indicate in their key performance indicators income generation in departments is necessary. Thereafter there is need to provide the critical resources and conducive environment for third-stream activities. Staff members need to be given salary increments, recognition and bonuses when they engage in income generating activities. Staff involvement is important for projects implementation, they need to be aware and involved in third-stream activities that take place in universities this can be done by allowing staff members to give ideas and suggestion

on how to enhance income generation. Involvement of staff members allows for ownership of projects thus successful implementation.

Public private partnerships are necessary in public universities this can be done by providing necessary policy framework. These partnerships are important as they help in enhancing income generation, quality education and infrastructural development, these are key for universities to be sustainable. Partnerships enhance linkages that are necessary for sustainability of universities.

5.5: Recommendations

In reference to the findings of the study the following recommendations were made:

5.5.1: Recommendations to the Government

The Government needs to conduct effective evaluation of potentiality of universities having third-stream activities as alternative means of generating income. Evaluation will help to reveal the possible ways of initiating and implementing third-stream activities. There is need for the government to hold seminars, workshops and conferences to train and equip university employees on ways to enhance income generation. The government also needs to provide policies and monitor implementation of third-stream activities. Provision of benchmarking opportunities for universities also help to analyze ways of enhancing income generation. The government can also encourage universities to engage in third-stream activities by provision of funds and grants in a manner to enhance knowledge utilization in universities.

The government needs to come up with relevant policy frameworks that provides guidance and direction in reference to third-stream activities. This can be done by proper consultation and involvement of universities, involvement of universities in preparation of these documents leads to ownership and information flow which is crucial for success. There is need to have proper budgeting as it is a planning process that coordinates many activities and influences implementation. Government ought to take into consideration the challenges that exist in both private and public universities thereby enhance proper budgeting and policy frameworks.

Zurii University has enhanced partnerships and installation of solar panel systems; the government needs to provide opportunities to enhance the growth of these partnerships. The government also needs to provide grants that help private universities implement third-stream activities. In Bidii University the study found out that the university is extensively involved in agricultural activities, the

government can support these activities by provision of grants and marketing opportunities for the products this will enhance growth and implementation of third-stream activities.

5.5.2: Recommendations to the university management and staff

The management of the university needs to carefully consider alternative measures of generating income both private and public universities. In order for universities to be sustainable it is important that universities come up with ways of resource utilization and mobilization. Management needs to spearhead innovation and creativity in income generation, more needs to be done in consultancies the staff members need to be motivated when they engage in third-stream activities. It is also important to establish policies and processes of implementing third-stream activities. Policies provide direction to the processes of universities. There is need to involve staff members in the process of coming up with sustainable measures of improving the university finances. Management also needs to provide training and benchmarking opportunities to their staff as this will help give exposure to the staff on third-stream activities. It is important to come up with offices that specifically deal with third-stream activities and fundraising opportunities for universities. Staff members also need to actively be aware that financial sustainability is not only the responsibility of the management rather it affects them in one way or the other. Therefore, sensitization is necessary as it helps staff to be aware of their expectation. The staff members also need to be proactive and participate in training opportunities provided in the area of third-stream activities.

University management needs to clearly indicate that in job description and key performance indicators that staff members need to identify third-stream activities that they can create in their departments. There is need to have policy review that enhance income generating activities. Staff members who create income generating activities in their departments need to be given salary increment and bonuses as a way of enhancing their morale thereby encourage other departments and staff members.

5.5.3: Recommendation for further research

This study was only limited to two universities which was a cross comparison of a private and public institution. The areas for further research will be to research on reasons as to why most staff members are unaware of the finances that universities make. A deeper examination of the role of human resource in financial sustainability of universities needs to be done in terms of the staff development, remuneration and separation. Effect of management style on financial sustainability of universities, there is need to examine how management of universities influences its sustainability. The study can be expounded to more universities or cross comparison with other universities in the world. Factors influencing financial sustainability of universities is also another study area that can be considered.

5.6: Limitations of the study

This study limited itself to the resource based theory which comprises of tangible, intangible and human resources. There are other factors that studies can explore that influence university sustainability such as quality and students. These factors can be analyzed on a deeper perspective. The study also limited itself to two universities thereby a cross comparison of a private and public university. Further studies can examine public universities or private universities in a particular region or departments that focus on specific subjects or areas of specializations.

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APPENDIX 1: QUESTIONNAIRE

TITLE: INFLUENCE OF THIRD-STREAM ACTIVITIES ON UNIVERSITY SUSTAINABILITY; A COMPARATIVE STUDY OF BIDII AND ZURII UNIVERSITY

The purpose of this study is to establish the third-stream activities that universities have undertaken and how they influence financial sustainability. Kindly answer the following questions. Where alternatives are given, tick the correct answer in the blank space.

SECTION A: BACKGROUND INFORMATION

1. What is your gender?
   Female [ ] Male [ ]
2. What is your age bracket?
   20-29 Years [ ]
   30-39 Years [ ]
   40 -49 Years [ ]
   50 Years and Above [ ]
3. Highest level of education?
   Certificate [ ]
   Diploma [ ]
   Bachelors [ ]
   Masters [ ]
   PhD [ ]
4. What is your position in the university?
   Administrative [ ] Teaching [ ] Both [ ]
5. Which department/faculty do you serve in?
   General administration [ ]
   Arts and Social Sciences [ ]
   Information Technology [ ]
   Business and Economics [ ]
   Agriculture [ ]
   Pure and Applied Sciences [ ] Other (Specify)…….
6. How long have you worked in this institution?
   0-2 years [ ] 3-5 years [ ] Above 5 years [ ]

SECTION B:

PART ONE: TANGIBLE RESOURCES

Please rate the extent to which you agree or disagree with the following statements by making tick (X) over the appropriate number of the 1 to 5-point scale next to the statement

5= Strongly agree	4= agree	3= neutral	2= Disagree	1= Strongly disagree

S.NO	Statement	1	2	3	4	5
1.	The university hires its land to external organizations therefore generates income					

2.	The institution hires its rooms, advertisement space to external organizations thus acquires income					
3.	University makes use of its land by engaging in agricultural activities thus generating income to the university					
3.	Installation of solar panel systems has enhanced income generation in the university					
4.	Selling of agricultural products to internal and external stakeholders has enhanced income generation in the university.					
5.	Sale of university merchandise such as t-shirts, books, caps, bags and badges contributes significant income in the university					

PART TWO: INTANGIBLE RESOURCES

Please rate the extent to which you agree or disagree with the following statements by making tick (X) over the appropriate number of the 1 to 5-point scale next to the statement

5= Strongly agree	4= agree	3= neutral	2= Disagree	1= Strongly disagree

S.NO	**Statement**	1	2	3	4	5
1	Developing and selling computer software contributes significant income to the university					
2	Linkages and partnerships with industries enhance income generation in the university					
3	The university generates significant income from copyrights, patent and trademarks					

PART THREE: HUMAN RESOURCE

Please rate the extent to which you agree or disagree with the following statements by making tick (X) over the appropriate number of the 1 to 5-point scale next to the statement

5= Strongly agree	4= agree	3= neutral	2= Disagree	1= Strongly disagree

S.NO	**Statement**	1	2	3	4	5
1	Staff members are involved in provision of external training to companies and industries thus generating income					
2	Departments organize seminars and workshops with external companies thus enhancing income generation					

3	Staff members engage in consultancies thus generating significant income					
4	There is an alumni office that engages the former students thus helps to generate funds for the university					

PART FOUR: CHALLENGES OF THIRD-STREAM ACTIVITIES

1. Which of the following is a major challenge of income generation in your university?
   Staff Morale [ ]
   Poor management and leadership [ ]
   Inadequate structures and policies [ ]
   Shortage of skilled manpower [ ]
   Inadequate funds [ ]
   Other (Specify)……

S.NO	Statement	1	2	3	4	5
1	University provides annual training in regards to income generation to staff members					
2	Staff members are given incentives in participating in income generation activities thus motivated.					
3	The management team provides adequate leadership to enhance proper management of income generating activities.					
4	Staff members understand their role and responsibilities in regards to income generation in the university					
5	There are effective policies and structures in regards to income generation					

PART FIVE: FINANCIAL SUSTAINABILITY AND PROFITABILITY

1. Which of the following factors influences financial sustainability to a great extent?
   Tangible resources [ ]
   Intangible resources [ ]
   Human resource [ ]
   Other (Specify)……..

S.NO	Statement	1	2	3	4	5
1	Financial sustainability is a collective responsibility for all staff members and stakeholders					
2	The management team is concerned with enhancing financial sustainability through coming up with income generation activities in the university					
3	University enhances proper financial planning in a bid to enhance financial sustainability.					

PROFITABILITY

1. Which of the following resources generated significant income in the last 5 years in university?
   - Hiring land [ ]
   - Hiring rooms/facilities [ ]
   - Agricultural Activities [ ]
   - Sale of merchandise [ ]
   - Solar panel systems [ ]
   - Other …….(specify)

2. Was the selected activity profitable to the university?
   Yes [ ] No [ ]

If No why……

3. How much estimated income was generated in the selected resource in the last 5 years?
Less than 1 million [ ] 2-5 million [ ] 6-10 million [ ] 10 million and above [ ]

4. Which of the following activities under intangible resources generated more income in the last 5 years?
   - Developing and selling software[ ]
   - Linkages and partnerships with external organizations [ ]
   - Intellectual property [ ]
   - Other [ ] specify…….

5. Was the selected activity profitable to the university?
   Yes [ ] No [ ]

If No why…….

6. How much estimated income was generated in the selected resource in the last 5 years?
Less than 1 million [ ] 2-5 million [ ] 6-10 million [ ] 10 million and above [ ]

7. Which activities listed below generated significant income in the last 5 years?
   - Consultancies [ ]
   - Seminars and workshops [ ]
   - Alumni funding [ ]

8. Was the selected activity profitable to the university?
   Yes [ ] No [ ]

If yes……

9. How much estimated income was generated in the selected resource in the last 5 years?
Less than 1 million [ ] 2-5 million [ ] 6-10 million [ ] 10 million and above [ ]

APPENDIX II: INTERVIEW GUIDE

TITLE: INFLUENCE OF THIRD-STREAM ACTIVITIES ON UNIVERSITY SUSTAINABILITY; A COMPARATIVE STUDY OF BIDII AND ZURII UNIVERSITY

1. What are the key issues facing your university currently in terms of income generation?
2. When you hear the term university sustainability, what does this mean to you?
3. What role, if any, do you feel universities should play in achieving financial sustainability?
4. Which key resources have been critical in enhancing third-stream activities?
5. What different barriers and challenges have you experienced in regards to third-stream activities?
6. Which policies and processes have been put in place to ensure increased income in the university?

APPENDIX III: CONSENT FORM

TITLE OF PROPOSAL: THIRD-STREAM ACTIVITIES AND UNIVERSITY SUSTAINABILITY; A COMPARATIVE STUDY OF BIDII AND ZURII UNIVERSITY.

NAME OF RESEARCHER: DORCAS CHEPKOECH NGENOH

Purpose of study: This study aims to examine the extent of third-stream activities and how they influence university sustainability with a use of comparative study of Bidii and Zurii University. In case of any further clarification please contact the researcher on this number: 0715615330

Please tick yes or no

I voluntarily accept to participate in the study ☐

I understand I can withdraw any time, refuse to answer any question without any consequence ☐

I understand I will not benefit directly in participating in the in this research ☐

I understand that all information provided in this study will be treated confidentially ☐

I understand that my identity remains anonymous in the study ☐

I understand that extracts of my interview may be used in the study ☐

Name of the Participant……

Signature……..

Date……

Signature of researcher

I believe the participant is giving consent to participate in the study

Signature…….

Date……

APPENDIX IV: LIST OF TABLES

Table 4.14:The university hires its land (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	73	83.0	83.0	83.0
	Disagree	12	13.6	13.6	96.6
	Neutral	3	3.4	3.4	100.0
	Total	88	100.0	100.0	

Table 4.15: The university hires its land (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	1.4	1.4	1.4
	strongly disagree	65	89.0	89.0	90.4
	Disagree	7	9.6	9.6	100.0
	Total	73	100.0	100.0	

Table 4.16:Institution hires its rooms (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	3.4	3.4	3.4
	Disagree	5	5.7	5.7	9.1
	Neutral	13	14.8	14.8	23.9
	Agree	35	39.8	39.8	63.6
	Strongly agree	32	36.4	36.4	100.0
	Total	88	100.0	100.0	

Table 4.17: Institution hires its rooms (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	1.4	1.4	1.4
		3	4.1	4.1	5.5
	Neutral	15	20.5	20.5	26.0
	Agree	26	35.6	35.6	61.6
	Strongly agree	28	38.4	38.4	100.0
	Total	73	100.0	100.0	

Table 4.18: University engages in agricultural activities (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	2.3	2.3	2.3
	Agree	20	22.7	22.7	25.0
	Strongly agree	66	75.0	75.0	100.0
	Total	88	100.0	100.0	

Table 4.19: University engages in agricultural activities (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	1.4	1.4	1.4
	Disagree	59	80.8	80.8	82.2
	Total	13	17.8	17.8	100.0
		73	100.0	100.0	

Table 4.20:Installation of solar panel enhances income generation (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	60	68.2	68.2	68.2
	Disagree	23	26.1	26.1	94.3
	Neutral	5	5.7	5.7	100.0
	Total	88	100.0	100.0	

Table 4.21: Installation of solar panel enhances income generation (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	1.4	1.4	1.4
	Neutral	13	17.8	17.8	19.2
	Agree	25	34.2	34.2	53.4
	Strongly agree	34	46.6	46.6	100.0
	Total	73	100.0	100.0	

Table 4.22: Selling of agricultural produce (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	4.5	4.5	4.5
	Disagree	3	3.4	3.4	8.0
	Neutral	8	9.1	9.1	17.0
	Agree	53	60.2	60.2	77.3
	Strongly agree	20	22.7	22.7	100.0
	Total	88	100.0	100.0	

Table 4.23: Selling of agricultural produce (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Strongly disagree	58	78.4	78.4	81.1
	Disagree	14	18.9	18.9	100.0
	Total	74	100.0	100.0	

Table 4.24:Sale of merchandise (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	5.7	5.7	5.7
	Disagree	1	1.1	1.1	6.8
	Neutral	32	36.4	36.4	43.2
	Agree	31	35.2	35.2	78.4
	Strongly agree	19	21.6	21.6	100.0
	Total	88	100.0	100.0	

Table 4.25: Sale of merchandise (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	10	13.5	13.5	16.2
	Disagree	36	48.6	48.6	64.9
	Neutral	22	29.7	29.7	94.6
	Strongly Agree	4	5.4	5.4	100.0
	Total	74	100.0	100.0	

4.5: Intangible resources

Table 4.26: Developing and selling software (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	54	61.4	61.4	61.4
	Disagree	25	28.4	28.4	89.8
	Neutral	1	1.1	1.1	90.9
	Agree	6	6.8	6.8	97.7
	Strongly agree	2	2.3	2.3	100.0
	Total	88	100.0	100.0	

Table 4.27: Developing and selling software (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Neutral	10	13.5	13.5	16.2
	Agree	24	32.4	32.4	48.6
	Strongly agree	38	51.4	51.4	100.0
	Total	74	100.0	100.0	

Table 4.28: Linkages and partnerships (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	6.8	6.8	6.8
	Disagree	6	6.8	6.8	13.6
	Neutral	6	6.8	6.8	20.5
	Agree	19	21.6	21.6	42.0
	Strongly agree	51	58.0	58.0	100.0
	Total	88	100.0	100.0	

Table 4.29: Linkages and partnerships (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	22	29.7	29.7	32.4
	Strongly agree	50	67.6	67.6	100.0
	Total	74	100.0	100.0	

Table 4.30: Copyrights, patent and trademarks (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	10	11.4	11.4	11.4
	Disagree	25	28.4	28.4	39.8
	Neutral	15	17.0	17.0	56.8
	Agree	29	33.0	33.0	89.8
	Strongly agree	9	10.2	10.2	100.0
	Total	88	100.0	100.0	

Table 4.31: Copyrights, patent and trademarks (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Disagree	20	27.0	27.0	29.7
	Neutral	45	60.8	60.8	90.5
	Strongly agree	2	2.7	2.7	93.2
	Strongly disagree	5	6.8	6.8	100.0
	Total	74	100.0	100.0	

Table 4.32:Staff members are involved in provision of training (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	57	63.3	64.8	64.8
	Disagree	18	20.0	20.5	85.2
	Neutral	2	2.2	2.3	87.5
	Agree	10	11.1	11.4	98.9
	Strongly agree	1	1.1	1.1	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.33: Staff members are involved in provision of training (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	35	47.3	47.3	50.0
	Disagree	9	12.2	12.2	62.2
	Neutral	13	17.6	17.6	79.7
	Strongly agree	15	20.3	20.3	100.0
	Total	74	100.0	100.0	

Table 4.34: Departments organize seminars and workshops (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	7.8	8.0	8.0
	Disagree	15	16.7	17.0	25.0
	Neutral	15	16.7	17.0	42.0
	Agree	41	45.6	46.6	88.6
	Strongly agree	10	11.1	11.4	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.35: Departments organize seminars and workshops (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	35	47.3	47.3	50.0
	Disagree	7	9.5	9.5	59.5
	Neutral	20	27.0	27.0	86.5
	Strongly Agree	6	8.1	8.1	94.6
	Strongly disagree	4	5.4	5.4	100.0
	Total	74	100.0	100.0	

Table 4.36: Staff members engage in consultancies (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	15	17.0	17.0	17.0
	Disagree	12	13.6	13.6	30.7
	Neutral	27	30.7	30.7	61.4
	Agree	27	30.7	30.7	92.0
	Strongly agree	7	8.0	8.0	100.0
	Total	88	100.0	100.0	

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Table 4.37:Staff members engage in consultancies (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	19	25.7	25.7	28.4
	Disagree	33	44.6	44.6	73.0
	Neutral	14	18.9	18.9	91.9
	Strongly Agree	6	8.1	8.1	100.0
	Total	74	100.0	100.0	

Table 4.38:There is an alumni office that helps to generate funds (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	68	75.6	77.3	77.3
	Disagree	9	10.0	10.2	87.5
	Neutral	7	7.8	8.0	95.5
	Agree	1	1.1	1.1	96.6
	Strongly agree	3	3.3	3.4	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.40:There is an alumni office that helps to generate funds (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	43	58.1	58.1	60.8
	Neutral	15	20.3	20.3	81.1
	Strongly agree	14	18.9	18.9	100.0
	Total	74	100.0	100.0	

Table 4.41:Major challenge in income generation in university (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Staff Morale	13	14.8	14.8	14.8
	Poor management and leadership	17	19.3	19.3	34.1
	Inadequate structure and policies	14	15.9	15.9	50.0
	Shortage of skilled manpower	14	15.9	15.9	65.9
	Inadequate funds	30	34.1	34.1	100.0
	Total	88	100.0	100.0	

Table 4.42: Major challenge in income generation in university (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Inadequate funds	8	10.8	10.8	13.5
	Inadequate structures and policies	6	8.1	8.1	21.6
	Poor management and leadership	4	5.4	5.4	27.0
	Shortage of skilled manpower	10	13.5	13.5	40.5
	Staff Morale	44	59.5	59.5	100.0
	Total	74	100.0	100.0	

Table 4.43:University provides annual training in regards to income generation (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	10.2	10.2	10.2
	Disagree	45	51.1	51.1	61.4
	Neutral	25	28.4	28.4	89.8
	Agree	9	10.2	10.2	100.0
	Total	88	100.0	100.0	

Table 4.44: University provides annual training in regards to income generation (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	16	21.6	21.6	24.3
	Disagree	14	18.9	18.9	43.2
	Neutral	33	44.6	44.6	87.8
	Strongly disagree	9	12.2	12.2	100.0
	Total	74	100.0	100.0	

Table 4.45: Staff members are given incentives (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	68	75.6	77.3	77.3
	Disagree	9	10.0	10.2	87.5
	Neutral	6	6.7	6.8	94.3
	Agree	5	5.6	5.7	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.46: Staff members are given incentives (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	31	41.9	41.9	44.6
	Disagree	22	29.7	29.7	74.3
	Neutral	13	17.6	17.6	91.9
	Strongly disagree	6	8.1	8.1	100.0
	Total	74	100.0	100.0	

Table 4.47:Management team provides adequate leadership (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	52	57.8	59.1	59.1
	Disagree	9	10.0	10.2	69.3
	Neutral	10	11.1	11.4	80.7
	Agree	14	15.6	15.9	96.6
	Strongly agree	3	3.3	3.4	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.48: Management team provides adequate leadership (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	42	56.8	56.8	59.5
	Disagree	13	17.6	17.6	77.0
	Neutral	13	17.6	17.6	94.6
	Strongly Agree	4	5.4	5.4	100.0
	Total	74	100.0	100.0	

Table 4.53: Which factors influence financial sustainability? (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tangible resources	17	19.3	19.3	19.3
	Intangible resources	18	20.5	20.5	39.8
	Human resource	52	59.1	59.1	98.9
	Other	1	1.1	1.1	100.0
	Total	88	100.0	100.0	

Table 4.54: Which factors influence financial sustainability? (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Human resources	59	81.9	81.9	81.9
	Intangible resources	5	6.9	6.9	88.9
	Tangible resources	8	11.1	11.1	100.0
	Total	72	100.0	100.0	

Table 4.55: Financial sustainability is a collective responsibility of all staff members (Bidii)

T		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	8.9	9.1	9.1
	Disagree	3	3.3	3.4	12.5
	Neutral	4	4.4	4.5	17.0
	Agree	22	24.4	25.0	42.0
	Strongly agree	51	56.7	58.0	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.56: Financial sustainability is a collective responsibility of all staff members (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	42	56.8	56.8	59.5
	Strongly agree	30	40.5	40.5	100.0
	Total	74	100.0	100.0	

Table 4.57: Management team is concerned with enhancing financial sustainability (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	49	54.4	55.7	55.7
	Disagree	12	13.3	13.6	69.3
	Neutral	13	14.4	14.8	84.1
	Agree	10	11.1	11.4	95.5
	Strongly agree	4	4.4	4.5	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.58: Management team is concerned with enhancing financial sustainability (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	48	64.9	64.9	67.6
	Disagree	9	12.2	12.2	79.7
	Neutral	7	9.5	9.5	89.2
	Strongly agree	8	10.8	10.8	100.0
	Total	74	100.0	100.0	

Table 4.59: University enhances proper financial planning (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	51	56.7	58.0	58.0
	Neutral	16	17.8	18.2	76.1
	Agree	17	18.9	19.3	95.5
	Strongly agree	4	4.4	4.5	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.60: University enhances proper financial planning (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	24	32.4	32.4	35.1
	Neutral	17	23.0	23.0	58.1
	Strongly Agree	31	41.9	41.9	100.0
	Total	74	100.0	100.0	

Table 4.61: Which of the following resources generated significant income in last 5 years? (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.2	2.2	2.2
	Hiring land	1	1.1	1.1	3.3
	Hiring rooms	17	18.9	18.9	22.2
	Agricultural activities	50	55.6	55.6	77.8
	Sale of merchandise	4	4.4	4.4	82.2
	Other	16	17.8	17.8	100.0
	Total	90	100.0	100.0	

Table 4.62: How much estimated income was generated in the selected resource? (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 Million	8	9.1	9.1	9.1
	2-5 million	31	35.2	35.2	44.3
	6-10 million	11	12.5	12.5	56.8
	10 million and above	20	22.7	22.7	79.5
	Not sure	18	20.5	20.5	100.0
	Total	88	100.0	100.0	

Table 4.63: Which of the following resources generated significant income in last 5 years? (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Solar panel systems	3	4.2	4.2	4.2
	Agricultural activities	5	6.9	6.9	11.1
	Leasing land/facilities	14	19.4	19.4	30.6
	Other specify.....	13	18.1	18.1	48.6
	Sale of merchandise	2	2.8	2.8	51.4
	Solar panel systems	35	48.6	48.6	100.0
	Total	72	100.0	100.0	

Table 4.64: How much estimated income was generated in the selected resource?(Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10 million and above	35	48.6	48.6	48.6
	2-5 million	25	34.7	34.7	83.3
	6-10 million	12	16.7	16.7	100.0
	Total	72	100.0	100.0	

Table 4.65: Which of the intangible resource generated more income in the last 5 years? (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Developing and selling software	10	11.4	11.4	11.4
	Linkages and partnerships	63	71.6	71.6	83.0
	Intellectual property	15	17.0	17.0	100.0
	Total	88	100.0	100.0	

Table 4.66: How much estimated income was generated in the selected resource in the last 5 years? (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 Million	8	9.1	9.1	9.1
	2-5 million	39	44.3	44.3	53.4
	6-10 million	6	6.8	6.8	60.2
	10 million and above	19	21.6	21.6	81.8
	Not sure	16	18.2	18.2	100.0
	Total	88	100.0	100.0	

Table 4.67: Which of the intangible resource generated more income in the last 5 years? (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Developing and selling software	4	5.6	5.6	5.6
	Linkages and partnerships with external	61	84.7	84.7	90.3
	Other specify.....	7	9.7	9.7	100.0
	Total	72	100.0	100.0	

Table 4.68: How much estimated income was generated in the selected resource in the last 5 years? (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10 million	33	45.8	45.8	45.8
	2-5 million	24	33.3	33.3	79.2
	6-10 million	11	15.3	15.3	94.4
	Less than a Million	4	5.6	5.6	100.0
	Total	72	100.0	100.0	

Table 4.69: Which activities generated significant income in the last 5 years? (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Consultancies	35	39.8	39.8	39.8
	Seminars and workshops	39	44.3	44.3	84.1
	Alumni funding	14	15.9	15.9	100.0
	Total	88	100.0	100.0	

Table 4.70: How much estimated income was generated in the selected resource in the last 5 years? (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 million	20	22.7	22.7	22.7
	2-5 million	32	36.4	36.4	59.1
	6-10 million	11	12.5	12.5	71.6
	Not sure	25	28.4	28.4	100.0
	Total	88	100.0	100.0	

Table 4.71: Which activities generated significant income in the last 5 years? (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Alumni funding	8	11.1	11.1	11.1
	Consultation	29	40.3	40.3	51.4
	Seminars	35	48.6	48.6	100.0
	Total	72	100.0	100.0	

Table 4.72: How much estimated income was generated in the selected resource in the last 5 years? (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10 million and above	30	41.7	41.7	41.7
	2-5 million	35	48.6	48.6	90.3
	6-10 million	3	4.2	4.2	94.4
	Less than 1 million	4	5.6	5.6	100.0
	Total	72	100.0	100.0	

Table 4.49:Staff members understand their role in regards to income generation (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	49	54.4	55.7	55.7
	Disagree	22	24.4	25.0	80.7
	Neutral	13	14.4	14.8	95.5
	Agree	4	4.4	4.5	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.50: Staff members understand their role in regards to income generation (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	34	45.9	45.9	48.6
	Disagree	15	20.3	20.3	68.9
	Neutral	11	14.9	14.9	83.8
	Strongly agree	10	13.5	13.5	97.3
	Strongly disagree	2	2.7	2.7	100.0
	Total	74	100.0	100.0	

Table 4.51:There are effective policies and structures in regards to income generation (Bidii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	51	56.7	58.0	58.0
	Disagree	14	15.6	15.9	73.9
	Neutral	13	14.4	14.8	88.6
	Agree	7	7.8	8.0	96.6
	Strongly agree	3	3.3	3.4	100.0
	Total	88	97.8	100.0	
Missing	System	2	2.2		
Total		90	100.0		

Table 4.52: There are effective policies and structures in regards to income generation (Zurii)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.7	2.7	2.7
	Agree	44	59.5	59.5	62.2
	Disagree	5	6.8	6.8	68.9
	Neutral	19	25.7	25.7	94.6
	Strongly agree	4	5.4	5.4	100.0
	Total	74	100.0	100.0	

4.8.1: Influence of tangible resources on financial sustainability of universities

Table 4.73: Correlations in Zurii university

			The university hires its land	Institution hires its rooms	University engages in agricultural activities	Installation of solar panel enhances income generation	Selling of agricultural activities	Sale of merchandise
Spearman's rho	The university hires its land	Correlation Coefficient	1.000	.369**	.455**	-.154	-.161	.
		Sig. (2-tailed)	.	.001	.000	.195	.176	.
		N	72	72	72	72	72	0
	Institution hires its rooms	Correlation Coefficient	.369**	1.000	.153	-.288*	-.017	.
		Sig. (2-tailed)	.001	.	.199	.014	.887	.
		N	72	72	72	72	72	0
	University engages in agricultural activities	Correlation Coefficient	.455**	.153	1.000	.188	-.231	.
		Sig. (2-tailed)	.000	.199	.	.114	.051	.
		N	72	72	72	72	72	0
	Installation of solar panel enhances income generation	Correlation Coefficient	-.154	-.288*	.188	1.000	-.084	.
		Sig. (2-tailed)	.195	.014	.114	.	.481	.
		N	72	72	72	72	72	0
	Selling of agricultural activities	Correlation Coefficient	-.161	-.017	-.231	-.084	1.000	.
		Sig. (2-tailed)	.176	.887	.051	.481	.	.

		N	72	72	72	72	72	0
	Sale of merchandise	Correlation Coefficient	.	.	.	.	.	.
		Sig. (2-tailed)	.	.	.	.	.	.
		N	0	0	0	0	0	0

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

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4.74: Correlation in Bidii university

			The university hires its land	Institution hires its rooms	University engages in agricultural activities	Installation of solar panel enhances income generation	Selling of agricultural activities	Sale of merchandise
Spearman's rho	The university hires its land	Correlation Coefficient	1.000	-.008	.052	-.062	-.080	.067
		Sig. (2-tailed)	.	.944	.630	.566	.461	.538
		N	88	88	88	88	88	88
	Institution hires its rooms	Correlation Coefficient	-.008	1.000	.221*	-.289**	.382**	.116
		Sig. (2-tailed)	.944	.	.038	.006	.000	.282
		N	88	88	88	88	88	88
	University engages in agricultural activities	Correlation Coefficient	.052	.221*	1.000	-.086	.124	-.199
		Sig. (2-tailed)	.630	.038	.	.427	.249	.063
		N	88	88	88	88	88	88

	Installation of solar panel enhances income generation	Correlation Coefficient	-.062	-.289**	-.086	1.000	-.176	.098
		Sig. (2-tailed)	.566	.006	.427	.	.101	.364
		N	88	88	88	88	88	88
	Selling of agricultural activities	Correlation Coefficient	-.080	.382**	.124	-.176	1.000	.287**
		Sig. (2-tailed)	.461	.000	.249	.101	.	.007
		N	88	88	88	88	88	88
	Sale of merchandise	Correlation Coefficient	.067	.116	-.199	.098	.287**	1.000
		Sig. (2-tailed)	.538	.282	.063	.364	.007	.
		N	88	88	88	88	88	88

*. Correlation is significant at the 0.05 level (2-tailed).

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

Table 4.75: Correlations in Bidii University

			Developing and selling software	Linkages and partnerships	Copyrights,patent and trademarks
Spearman's rho	Developing and selling software	Correlation Coefficient	1.000	.292**	.181
		Sig. (2-tailed)	.	.006	.092
		N	88	88	88
	Linkages and partnerships	Correlation Coefficient	.292**	1.000	.080
		Sig. (2-tailed)	.006	.	.456

	Copyrights,patent and trademarks	N	88	88	88
		Correlation Coefficient	.181	.080	1.000
		Sig. (2-tailed)	.092	.456	.
		N	88	88	88

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

Table 4.76: Correlations in Zurii university

			Developing and selling software	Linkages and partnerships	Copyrights,patent and trademarks
Spearman's rho	Developing and selling software	Correlation Coefficient	1.000	.420**	.
		Sig. (2-tailed)	.	.000	.
		N	72	72	0
	Linkages and partnerships	Correlation Coefficient	.420**	1.000	.
		Sig. (2-tailed)	.000	.	.
		N	72	72	0
	Copyrights,patent and trademarks	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	0	0	0

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

Table 4.76: Correlations in Bidii University

			Staff members are involved in provision of training	Departments organize seminars and workshops	Staff members engage in consultancies	There is an alumni office that helps to generate funds
Spearman's rho	Staff members are involved in provision of training	Correlation Coefficient	1.000	.071	-.055	.074
		Sig. (2-tailed)	.	.509	.614	.494
		N	88	88	88	88
	Departments organize seminars and workshops	Correlation Coefficient	.071	1.000	.636**	.131
		Sig. (2-tailed)	.509	.	.000	.225
		N	88	88	88	88
	Staff members engage in consultancies	Correlation Coefficient	-.055	.636**	1.000	.117
		Sig. (2-tailed)	.614	.000	.	.276
		N	88	88	88	88
	There is an alumni office that helps to generate funds	Correlation Coefficient	.074	.131	.117	1.000
		Sig. (2-tailed)	.494	.225	.276	.
		N	88	88	88	88

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

Table 4.77 Correlations in Zurii university

			Staff members are involved in provision of training	Departments organize seminars and workshops	Staff members engage in consultancies	There is an alumni office that helps to generate funds
Spearman's rho	Staff members are involved in provision of training	Correlation Coefficient	1.000	-.051	.026	-.007
		Sig. (2-tailed)	.	.668	.829	.951
		N	72	72	72	72
	Departments organize seminars and workshops	Correlation Coefficient	-.051	1.000	.234*	.349**
		Sig. (2-tailed)	.668	.	.048	.003
		N	72	72	72	72
	Staff members engage in consultancies	Correlation Coefficient	.026	.234*	1.000	-.195
		Sig. (2-tailed)	.829	.048	.	.101
		N	72	72	72	72
	There is an alumni office that helps to generate funds	Correlation Coefficient	-.007	.349**	-.195	1.000
		Sig. (2-tailed)	.951	.003	.101	.
		N	72	72	72	72

*. Correlation is significant at the 0.05 level (2-tailed).

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

Table 4.78 Correlations in Bidii university

			Major challenge in income generation in university	University provides annual training in regards to income generation	Staff members are given incentives	Staff members understand their role in regards to income generation	Management team provides adequate leadership	There are effective policies and structures in regards to income generation
Spearman's rho	Major challenge in income generation in university	Correlation Coefficient	1.000	.164	.124	.061	.139	.205
		Sig. (2-tailed)	.	.126	.248	.575	.197	.056
		N	88	88	88	88	88	88
	University provides annual training in regards to income generation	Correlation Coefficient	.164	1.000	.419**	.053	.132	.322**
		Sig. (2-tailed)	.126	.	.000	.627	.219	.002
		N	88	88	88	88	88	88
	Staff members are given incentives	Correlation Coefficient	.124	.419**	1.000	.029	.226*	.535**
		Sig. (2-tailed)	.248	.000	.	.787	.034	.000
		N	88	88	88	88	88	88
	Staff members understand their role in regards to income generation	Correlation Coefficient	.061	.053	.029	1.000	.004	.016
		Sig. (2-tailed)	.575	.627	.787	.	.970	.881
		N	88	88	88	88	88	88
	Management team provides	Correlation Coefficient	.139	.132	.226*	.004	1.000	.059

	adequate leadership	Sig. (2-tailed)	.197	.219	.034	.970	.	.583
		N	88	88	88	88	88	88
	There are effective policies and structures in regards to income generation	Correlation Coefficient	.205	.322**	.535**	.016	.059	1.000
		Sig. (2-tailed)	.056	.002	.000	.881	.583	.
		N	88	88	88	88	88	88

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

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations in Zurii university

			Major challenge in income generation in university	University provides annual training in regards to income generation	Staff members are given incentives	Management team provides adequate leadership	Staff members understand their role in regards to income generation	There are effective policies and structures in regards to income generation
Spearman's rho	Major challenge in income generation in university	Correlation Coefficient	1.000	-.066	.245*	.095	-.485**	-.015
		Sig. (2-tailed)	.	.580	.038	.426	.000	.899
		N	72	72	72	72	72	72

University provides annual training in regards to income generation	Correlation Coefficient	-.066	1.000	-.251*	.159	.121	-.211
	Sig. (2-tailed)	.580	.	.033	.183	.310	.075
	N	72	72	72	72	72	72
Staff members are given incentives	Correlation Coefficient	.245*	-.251*	1.000	-.041	-.422**	.236*
	Sig. (2-tailed)	.038	.033	.	.730	.000	.046
	N	72	72	72	72	72	72
Management team provides adequate leadership	Correlation Coefficient	.095	.159	-.041	1.000	.211	.266*
	Sig. (2-tailed)	.426	.183	.730	.	.075	.024
	N	72	72	72	72	72	72
Staff members understand their role in regards to income generation	Correlation Coefficient	-.485**	.121	-.422**	.211	1.000	.124
	Sig. (2-tailed)	.000	.310	.000	.075	.	.299
	N	72	72	72	72	72	72
There are effective policies and structures in regards to income generation	Correlation Coefficient	-.015	-.211	.236*	.266*	.124	1.000
	Sig. (2-tailed)	.899	.075	.046	.024	.299	.
	N	72	72	72	72	72	72

*. Correlation is significant at the 0.05 level (2-tailed).

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

APPENDIX V: Letter of Research Authorization from Strathmore University

Strathmore UNIVERSITY

21st January 2020

Ms Ngenoh, Dorcas
dorkingenoh@gmail.com

Dear Ms Ngenoh,

RE: Third Stream Activities and University Sustainability; a case of Bidii and Zurii Universities

This is to inform you that SU-IERC has reviewed and **approved** your above research proposal. Your application approval number is **SU-IERC0597/19** .The approval period is **21st January, 2020 to 20th January, 2021.**

This approval is subject to compliance with the following requirements:

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

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

Yours sincerely,

for: Dr Virginia Gichuru,
Secretary; SU-IERC

Cc: Prof Fred Were,
Chairperson; SU-IERC

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APPENDIX VI: Letter of Research Authorization from NACOSTI

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This is to Certify that Miss.. Dorcas Ngenoh of Strathmore University, has been licensed to conduct research in Kisii, Nairobi on the topic: Influence of third stream activities and university sustainability; a comparative study of Bidii and Zurii universities. for the period ending : 24/January/2021.

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