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Editorial

This issue of Makerere Journal of Higher Education (MAJOHE) presents five papers from Uganda, Tanzania and Nigeria. Authored by senior academic and administrative staff in their respective higher education institutions, the papers address procurement performance, student and staff attrition and Science and Technology education.

Picho examines the link between the staffing of two tertiary institutions and their performance in the area of public procurement. Starting with cross-referenced exposition of the subject of procurement theory and practice over centuries, this study decries challenges in institutional procurement after which the author attempts to establish whether, in the case of the said tertiary institutions, these problems are related to human capacity. The study reports a positive correlation (.611) between institutional human capacity and procurement performance, so prioritisation of institutional human capacity building is recommended.

Mlengule addresses student attrition (at Cardinal Rugambwa Memorial University College) while Kyaligonza and Kamagara address staff attrition at public universities in Uganda. It is of striking interest that lines of similarity are discernible from these studies albeit which are differently designed and geographically diverse. Moreover, the studies are also largely in tune with Rupia's study on the challenges and prospects in Tanzanian higher education. These three studies discuss some of the dilemmas of neoliberal reform—a persevering theme in scholarship on contemporary African higher education—reporting developments, responses and new approaches that have been tailored to suit the peculiarity of regional and institutional contexts.

Finally, Oyelade and Abolade trace the historical development of Science and Technology Education in Nigeria with specific reference to the challenges that have been experienced and prospects for reform. At a time governments across Sub-Saharan Africa are working to promote industrialization through Science, Technology, Engineering and Mathematics education, this study is particularly timely. It is our hope that policy makers and implementers will find it a useful resource.

As usual, our thanks are due to the authors for publishing their work in MAJOHE; our anonymous reviewers for their insightful feedback; and to

Editorial

African Journals Online (AJOL) for their contribution towards the production, indexing and dissemination of the Journal.

Editor



Human Capacity and Procurement Performance at Two Tertiary Institutions in Uganda

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Abstract. This study aimed at establishing the ways in which institutional human capacity affects performance in public procurement at Uganda College of Commerce (UCC), Pakwach and National Teachers College (NTC), Muni, both located in West Nile sub-region of Uganda. The study followed a cross-sectional survey design. Both quantitative and qualitative approaches were used. This study targeted a random sample of 122 respondents. Purposive sampling was also used to select the Accounting Officers and the Contracts Committee members of the institutions. The findings revealed a positive correlation (.611) between institutional human capacity and procurement performance. Thus, it was concluded that institutional human capacity (measured in terms of professionalism and competence) affected performance in institutions in the region. Therefore, prioritisation of institutional human capacity building is recommended.

Keywords: Procurement; Capacity building; Financial management.

1 Introduction

Historically, the first known procurement order dates back to between 2800 and 2400 BC. The order was for “50 jars of fragrant smooth oil for 600 small weight in grain” (Coe, 1989, p. 87). Other evidence of historical procurement includes the development of the silk trade between China and a Greek colony in 800 BC. In the United States, according to Page (1980) as cited in Scott (2008), government procurement at the municipal level predates that of state and federal governments. In the settlements and colonies, printing was one of a few services contracted out by government. However, there were no professional procurement officials - the practice of procurement being older than the discipline. Goods and services needed by government were supplied by commissioners or commissaries who received a commission on what they

bought for the militia or other administrative units. It was not until the late 1800s that state legislatures began to create boards or bureaus responsible for purchasing, but central purchasing was hardly a practice at that time. In 1810, Oklahoma was the first state government to create a board to procure centrally for all state departments and agencies (Page, 1980). Many local governments soon followed Oklahoma's example, according to Arthur Thomas (1919) as cited in Scott (2008).

Since then, centralized purchasing has gradually become common in state and local governments. However, the centralization trend has been challenged in recent years. Many practitioners and researchers have contended that purchasing authority, especially in government, must be decentralized in order to provide support that is more responsive to end users, eliminate bureaucratic obstacles to programme accomplishment, improve inter-departmental coordination, and empower service delivery managers to procure what they need without impediment by a centralized organization.

In addition to centralized purchasing, there was movement toward adopting a uniform government procurement code. The American Law Institute and the National Conference of Commissioners on Uniform State Laws, with the endorsement of the American Bar Association, promulgated the "Uniform Commercial Code" (UCC) and completed it in the fall of 1951. Pennsylvania was the first state to enact the UCC; and by 1980, all states except Louisiana had adopted most provisions of the Uniform Code (Page, 1980). In 1979, the American Bar Association (ABA) issued The Model Procurement Code "after five years of intensive effort directed by a Coordinating Committee on a Model Procurement Code" (American Bar Association, 2000, p. 101). In 2000, the ABA updated this publication and issued The 2000 Model Procurement Code for States and Local Governments.

At the federal level, the first purchasing action occurred in 1778 when the Continental Congress approved the appointment of purchasing commissionaires, whose purchasing work was compensated by two percent of the value of their disbursements in support of the Continental army. However, by the end of the year, as this arrangement led to excessive costs and possibilities of fraud, the purchasing officers were placed on salary. In 1792, the US Congress passed a purchasing-related Act that authorized the departments of War and Treasury to make purchases in the name of the United States. The first significant procurement, made in 1794, was for a group of six large frigates for the new US Navy. However, bad early experiences with this procurement procedure led to the 1795 passage of the first comprehensive procurement legislation, the Purveyor of Public Supplies Act, which became the basis for military procurement. Misconduct and abuses in federal procurement again led to an Act Concerning Public Contracts of 1808, prohibiting members of Congress from benefiting from government contracts

and the Procurement Act of 1809, requiring competition in government procurement. Since then, a series of legislations and executive orders were passed or issued.

Currently, there are 50 states and over 83,000 local procurement entities and as each governmental unit enjoys its autonomy, it is impossible, as space would not be enough, to document various procurement laws and regulations in this article. In 1975, in a pioneering effort, the Council of State Governments published a report tabulating purchasing statutes and regulations of all states, major counties and cities.

Despite many government procurement reform efforts having been undertaken, it seems that all the public procurement problems that were prevalent over eighty years ago are still afflicting the profession today, and will persist. Managing procurements in the public sector has emerged as one of the most daunting challenges facing public managers. Given the importance of public sector procurement, more robust application of theoretical perspectives and empirical research of organizations at the operational level is greatly needed (Brown, Potowski & Van Slyke, 2006). This study takes a step by examining the institutional human capacity and public procurement performance through the lens of institutional theory (Scott, 2008).

This study was guided by institutional theory to explain how institutional dynamics affect public procurement performance in tertiary institutions in the West Nile Sub-Region in Uganda. Institutional theory attempts to describe the deeper and more resilient aspects of how institutions are created, maintained, changed and dissolved (Scott, 2005; Scott, 2008), and deals with the pervasive influence of institutions on human behaviour including the processes by which structures such as rules, routines and norms guide social behaviour.

Institutional theory is the traditional approach that is used to examine elements of public procurement (Obanda, 2010). There is no single and universally agreed definition of “institution” or “institutional theory”. According to Scott (2004), institutions are composed of cultural-cognitive and regulative elements that, together with associated activities and resources, give meaning to life. Scott explains the three pillars of institutions as regulatory, normative and cultural-cognitive. The regulatory pillar emphasizes the use of rules, laws and sanctions as enforcement mechanism, with expedience as the basis for compliance. The normative pillar refers to norms (how things should be done) and values (the preferred or desirable), which are the social obligations, being the basis of compliance. The cultural-cognitive pillar rests on shared understanding (common beliefs, symbols).

Institutional theory highlights the importance of the wider institutional environment as the ground in which organizations are rooted (Scott, 2005). The key idea behind institutionalization is that much organizational action reflects a pattern of doing things that evolves over time and becomes legitimated within

an organization and an environment (Pfeffer, as cited in Eyaa & Oluka, 2011). Institutional theory (Scott, 2001) can be used to explain the problem of managing government procurement, conceptualized as the “smart buyer problem” by Kettl (1993). Kettl argued that, while embracing the market-based promises of procurement, governments have failed to develop the capacity to address even the most fundamental procurement questions, such as what to buy, who to buy from and what has to be bought. He suggests that the problem is partly attributable to institutional barriers in government agencies that prevent them from becoming learning organizations. This study explores the proposition that institutional dynamics within procuring organizations may contribute to this problem. Government institutions do not behave as a single buyer with clearly defined buying objectives. Multiple organizations, each shaped by institutional factors, lay claim to processes relating to Kettl’s smart buyer questions. As key organizational participants become aligned with their own regulative, normative, and socio-cognitive institutional “pillars,” smart buying behaviour may become confounded by institutional factors and constraining organizational structures. For this study, an organizational field consisting of the programme office, procurement office, and budget office will be selected as the level of analysis. Both quantitative and qualitative approaches will be developed to analyse data from public sources, including public institution policy documents, audit reports, and other published information. Data from auto-ethnographic accounts, interviews, content analyses and the case studies will help frame the institutional characteristics of these offices in public institutions.

Public procurement is the acquisition of goods, services and works by a procuring entity using public funds (World Bank, 1995). It is the process by which government departments or agencies purchase goods and services from the private sector. Public procurement as a function of government includes decisions about the services that will be delivered to local authorities and the communities they serve (Hughes, 2005). It is utilized not only to secure goods and services required by public sector organizations for their missions and to support services provided to taxpayers, but also used to implement national policies and to achieve social and other objectives (Thai, 2005). Depending on local laws, the relevant government officials will have to follow a set system for procurement. This system could cover the way they advertise for suppliers, the grounds on which they choose a supplier, and the way in which they measure and enforce the requirements they put on the supplier. The usual aims of such a system will be to take advantage of competition between suppliers and to reduce the risk of corruption.

Institutional human capacity often implies a broader focus of empowerment of social capital (Segnestam et al, 2002). It refers to the skills, competences and abilities of people and communities in institutions necessary to achieve set

goals. Human capacity is the stock of knowledge, habits, social and personality attributes, including creativity, embodied in the ability to perform labour to produce economic value (Becker, 1994). Alternatively, human capacity is a collection of resources - all the knowledge, talents, skills, abilities, experience, intelligence, training, judgement, and wisdom - possessed individually and collectively by individuals in a population (Abel & Deitz, 2012). These resources are the total capacity of the people that represents a form of wealth which can be directed to accomplish the goals of the institution. In this study, institutional human capacity was taken to refer to the professionalism and competence of human resources.

According to Van Weele (2006), procurement performance is considered the result of two elements: procurement effectiveness and procurement efficiency. Performance provides the basis for an organization to assess how well it is progressing towards its predetermined objectives, identifies areas of strengths and weaknesses and decides on future initiatives with the goal of how to initiate performance improvements. This means that procurement performance is not an end in itself but a means to effective and efficient control and monitoring of the procurement function (Lardenoije, Van Raaij & Van Weele, 2005). Procurement efficiency and procurement effectiveness represent different competences and capabilities for the procurement function. CIPS Australia (2005) presents the differences between efficiency and effectiveness. Efficiency reflects that the organization is “doing things right” whereas effectiveness relates to the organization “doing the right thing”. This means an organization can be effective and fail to be efficient, the challenge being to balance between the two. In this study, procurement performance was measured using Van Weele’s (2006) definitions of procurement efficiency and procurement effectiveness.

Public Procurement has always been a big part of the developing countries’ economies, accounting for an estimated 9-13% of the developing nations’ Gross Domestic Product (GDP); and it is, therefore, an area that needs attention in the face of increasing non-compliance (Odhiambo & Kamau, 2003). Procurement managers and stakeholders in the Public Service serve institutions created and governed by a complex array of statutes, regulations, policies and directives. They operate in an environment of increasingly intense scrutiny and accelerated changes driven by technology, programme reviews, and public and political expectations for service improvements. When combined, these result into growing institutional complexity and risks. However, Ntayi (2009) observes that millions of dollars get wasted due to inefficient and ineffective procurement structures, policies and procedures as well as failure to impose sanctions for violation of procurement rules, thus resulting in poor service delivery. The level of compliance to procurement regulations can determine whether a public institution meets its goals and objectives or not.

In order to improve the management of public procurement, many countries have come up with procurement reforms. According to Arrowsmith and Trybus (2003), the last decade of the twentieth century has witnessed the start of the global evolution in public procurement. Nonetheless, Thai (2005) asserts that challenges in public procurement go beyond procurement regulations to include procurement process, methods, organizational structure and work force.

This assertion is supported by the African Peer Review Mechanism Country Review (APRM) Report on Uganda (2009), which asserts that non-compliance with the regulations is so high in Uganda. The same report estimates that more than UGX. 30 billion (US Dollars 184) is lost every year due to non-compliance. De Boer and Telgen (1998), as cited by Gelderman et al (2006), explain that compliance is a problem not only in the third world countries but also evident in the European Union countries. Gelderman et al (2006) further advances reasons for non-compliance as explained by the tendency to avoid red tape involved in the procurement process.

In Uganda, the need for procurement reforms became urgent because of internal and external pressure given the fact that the Government, hence, the taxpayer, was losing huge sums of money in poorly managed procurement processes. The procurement reforms that were recommended in 2001 in Uganda in the Country Procurement Assessment Report are: the abolition of the Central Tender Board; enactment of a Procurement Law (Public Procurement and Disposal of Assets Act); establishment of a policy regulation body, the Public Procurement and Disposal of Assets Authority; establishment of Contract Committees and Procurement Units in procuring entities; harmonization of central and local government regulations; incorporation of procurement plans in sector investment programmes; preparation of standard bidding documents, establishment of a procurement cadre in the civil service and restoration of professionalism in the procurement function. All procurements and disposals handled by public procuring and disposing entities (PDEs) are governed by the regulations in the PPDA Act (2003). These regulations specify procurement and disposal procedures that have to be followed by all persons involved in procurement and disposal processes in order to ensure fairness, transparency, competitiveness and non-discrimination to all potential providers of goods, services and works (PPDA Act, 2003). Local authorities and other government entities, such as parastatals, schools and universities, are by definition public entities. Currently, all procurements are undertaken by the public entities themselves, which has in turn created an extensive demand for high procurement performance in each public entity (Agaba & Shipman, 2006).

Uganda's procurement regulations explicitly identify public universities as procurement entities. In these institutions, Accounting Officers are responsible for the procurement of goods, works and services. In public universities in

Uganda, the University Secretary is the Accounting Officer responsible for the entity. Other players are the Contracts Committee, the Evaluation Committee (ad-hoc), Negotiation Committees (ad-hoc), Procurements and Disposal Units (PDUs) and the User Departments. All these play their independent roles to see to it that whatever is required, as planned, is procured in accordance with the PPDA Act to ensure value for money.

According to the Public Procurement and Disposal of Public Assets Authority (PPDA, 2009), in Makerere University, Standard Bidding documents were not used for procurements handled by the User Departments. As a result, specifications were in most cases not well defined. Bidding Forms issued by the Authority were not utilized. Use of PPDA forms avoids wrong submissions by the bidders and facilitates evaluations. Evaluation reports were in some cases not signed by all the evaluators; for example, one member did not sign the evaluation report for the extension of the Faculty of Economics and Management. Financial loss of UGX 56,032,960 was registered. The decision to award a tender to M/s Plasticom led to a cost increase of UGX 4,000 per chair, increasing the total by an extra UGX 6,444,000, which extra amount could have purchased 460 more chairs if the tender had been awarded to M/s Nice Plastics. From the records available, the team noted that M/s Copy Cat (Uganda) Ltd offered photocopier with superior options at UGX 22,950,000 than that offered by M/s Kazinga Channel at a higher price of UGX 26,356,775. The choice by the committee of a higher priced photocopier caused a financial loss of UGX 3,406,775.

In respect to Gulu University, the Public Procurement and Disposal of Public Assets Authority (2011) revealed that seven cases, representing 14% of the cases, were contracted at sums that varied greatly from those indicated in the procurement plan for the year under review. The audit revealed that six cases, representing 12% of the sample, were not on the procurement plan for the FY 2010/2011. There was a decline in performance (FY 2010/11, the high risk plus medium risk was 96% by number and 99 % by value compared with FY 2007/08 at 77% by number and 81% by value). It was concluded that the entity's performance was very poor. Forty-nine cases, representing 99% by value, were in the high and medium risk categories. It was against this background that the researcher was interested in establishing how institutional human capacity affect performance in public procurement in tertiary institutions in the West Nile sub-region of Uganda.

The procurement function has become increasingly important over the past decades since purchasing and supply has become a major determinant of corporate success. Significant business pressure because of cost pressure and regulatory compliance has forced the procurement function to focus on cost reduction and attaining more value for money. The procurement function usually takes large amounts of organizations' revenue, hence it is becoming an

expensive undertaking for many organizations (Chan & Lee, 2003); and if not properly done it can lead to significant regret.

The inefficiency and incompetence of overall administration and management of the procurement function in Uganda's public universities contributes to loss of millions of Uganda shillings annually. According to Victor (2012), procurement expenditure could be minimized through implementation of effective procurement practices. The enactment of the Public Procurement and Disposal Act (PPDA Act) and the Regulations, as well as the establishment of a public procurement oversight authority were some of the reforms meant to promote efficiency, effectiveness, good performance and accountability in public procurement.

Regardless of the effort by the Uganda government to improve the performance of the procurement function, public procurement in government universities is still marred by poor procurement performance. Failure to implement or delayed implementation of recommended performance standards has resulted in unnecessarily high operation costs and uncoordinated business activities, thus affecting the function's performance (PPDA, 2007).

It is against this background that this study was conducted to establish the effect of institutional human capacity on performance of the procurement function at Uganda College of Commerce Pakwach and National Teachers' College, Muni, in Arua. These were selected because of complaints related to their procurement performance. The study concentrated on inter-institutional dynamics and their effect on procurement performance. Inter-institutional dynamics were restricted to aspects of institutional legal environment, institutional human capacity, institutional culture, institutional politics and institutional ethical values. Procurement performance was restricted to public procurement efficiency and effectiveness. The research focused on a period of five years, 2010 to 2015, for obtaining information about inter-institutional dynamics and procurement performance.

2 Related Literature

Institutional theory deals with the processes by which structures (including schemes, rules, norms, and routines) become established as authoritative guidelines of social behaviour (Scott, as cited in Kenyakisa & Kiruja, 2015). Different components of institutional theory explain how these elements are created, diffused, adopted, and adapted over time; and how they fall into decline and disuse. Institutional theory states that organizations exist in an institutional environment, which defines and delimits their reality (Scott, as cited in Kenyakisa & Kiruja, 2015).

Institutional theory describes the effects of external institutional pressures on organizations and defines institutions as regulatory structures, government agencies, laws, courts, and professions, as well as interest groups and public opinion (Lowell, as cited in Makabira, 2014). The rules and norms set out by the institutions in an environment are endorsed by various actors. When speaking of actors and institutional environment in this research, reference is made to the norms represented by the actors in the environment and the pressure that these norms exert on other actors in the environment. A strength attributed to institutional theory is its ability to explain non-choice behaviour of organizations, how they conform to norms without questioning them and undertaking public function (Lowell, as cited in Makabira, 2014).

Institutional theory adopts a sociological perspective to explain organizational structures and behaviour (Dunn & Jones, 2010). It draws attention to the social and cultural factors that influence organizational decision-making and, in particular, how rationalized activities are adopted by organizations (Scott, 2001). Institutional theory is the traditional approach that is used to examine elements of public procurement (Obanda, 2010). Scott (2004) identifies three pillars of institutions as regulatory, normative and cultural-cognitive. The regulatory pillar emphasizes the use of rules, laws and sanctions as enforcement mechanisms, with expedience as the basis for compliance. The normative pillar refers to norms and values with social obligation as the basis of compliance. The cultural-cognitive pillar rests on shared understanding, common beliefs and symbols.

De Boer and Telgen (1998) observed that another cause of non-compliance is lack of professionalism. The PPDA Audit Report (2008) revealed that lack of professionalism was high amongst public Procurement Officers in Uganda and this can still be attributed to the fact that the profession is still young in the country. This position is confirmed by Basheka and Mugabira (2008) who state that the level of professionalism in public procurement is low or non-existent. Dobler and Burt (1996) define a profession as a calling requiring specialized knowledge and often long and intense preparation including instruction in skills and methods, maintaining by force of organization or concerted opinion high standards of achievement and conduct, and committing its members to continued study and to a kind of work which has for its prime purpose the rendering of a public service.

This definition is echoed by Millerson (1964) as cited in (Eyaa & Oluka, 2011) who lists the following essential features of a profession. A profession according to Millerson has the following essential features: a skill based on theoretical knowledge; a skill requiring training and education; the demonstration of competence by professional by passing a test; maintenance of integrity by adherence to a code of conduct; service provided for the public good and that the profession is organized. The researcher sought to establish

whether the staff handling procurements in the tertiary institutions in the West Nile Sub-Region were professionals in the sense described by Millerson (1964), whereby they had skill based on theoretical knowledge; a skill requiring training and education; the demonstration of competence by professional by passing a test; maintenance of integrity by adherence to a code of conduct; service provided for the public good and that the profession is organized. This study was, through its findings, to establish the fact.

Procurement professionals need to acknowledge and devise strategies for managing all these complex challenges. The professionals must be seen as champions of efficiency and effectiveness and must acknowledge the challenges and their various forms, and their sources. The requirements to educate professionals and equip them with new and higher-level skills have consequently become urgent (Sauber et al, 2008). A skill is the ability either to perform some specific behavioural task or the ability to perform some specific cognitive process that is related to some particular task (Peterson and Van Fleet, 2004). However, Lan, Riley and Cayer (2005) reported that finding, hiring and retaining dedicated, energetic, and ethical employees with special skills is always hard. While we understand that professionalism is a key mechanism for, and primary target of institutional change, the precise role of professions and professional service firms in processes of institutional change remain under-theorized (Hwang & Powell, 2009; Scott, 2008).

Considerable attention has been given to the profile of a Procurement Officer who can demonstrate value and deliver superior performance in public procurement. The performance of procurement function in any organization requires that the individuals handling the procurement activity should have the necessary professional qualifications. A research study by Hudson (2008) has shown that in order to attain superior performance in an evolving role, Procurement Officers must have an uncommonly varied mix of both technical and behavioural competences. In addition, the Procurement Officers must identify, develop and disseminate relevant competences at the appropriate levels within the procurement hierarchy (Boyatzis, 2007; Hudson, 2008; Humphreys et al, 1998). This calls for self-efficacy to further complement procurement officers' competences and enhance procurement performance.

Bandura (as cited in Hudson, 2008) asserts that people are likely to engage in activities to the extent that they perceive themselves to be competent at those activities. This implies that Procurement Officers are more likely to attempt, to persevere, and to perform better at tasks at which they have a sense of efficacy.

Challenges, however, still exist where changes from an operational to a strategic role have not been matched with corresponding competences among Procurement Officers. In addition, failure to build self-efficacy among Procurement Officers have continued to undermine the officers' capability to learn how to cope more effectively with the increasing demand to demonstrate

long term strategic value (Hudson, 2008). As a result, there are irregularities in the procurement process including inadequate procurement planning, poor record keeping and abuse of process such that even the highly talented Procurement Officers cannot perform their job effectively (Heslin & Klehe, 2006; Atkinson, 2003). The truth about the same in the tertiary institution in the West Nile sub-region of Uganda were yet to be established by the study.

The diversity of the work involved in public procurement necessitates that Procurement Officers are competent in a wide variety of generic procurement skills in addition to the specific technical skills and knowledge required when procuring for different sectors and commodities. Thus, it is arguably becoming more important to identify, develop and assess the competences of Procurement Officers in public procurement to ensure that procurement activity is both compliant with legislation and obtaining value for money.

Previous studies (Ryan, Emmerling & Spencer, 2009; Boyatzis, 2007; Spencer, 2001, 2003) have highlighted the validity and utility of competences in predicting workplace performance across a variety of settings, possibly including procurement performance. In addition, competences are a product of a job; and once generated, they link work, people and strategies for improving performance (McLagan, as cited in Boyatzis, 2007). Hudson (2008) reinforces the above studies, asserting that identifying and nurturing competences is crucial if Procurement Officers are to distinguish themselves as high performers. It was yet a question to answer if the Procurement Officers in the tertiary institutions in West Nile sub-region of Uganda identify and nurture their competences.

According to Boyatzis (2007), the theory of performance is the basis for the concept of competence. Maximum performance is believed to occur when the person's capability or competence is consistent with the needs of the job demands (roles and responsibilities) and the organizational environment, systems and structures (Boyatzis, as cited in Ryan, Emmerling & Spencer, 2009).

Owuoth and Mwangangi (2015) showed that work professionalism has a positive effect on procurement performance in public sector in Kenya. The findings revealed that procurement performance was positively and significantly correlated with professionalism at ($r = 0.225, p=0.008 < 0.05$). This implied that professionalism has positive effects to procurement performance in public sector. These findings support the findings of Odhiambo and Kamau (2013) that the procurement system requires the input of professionals with good negotiating skills and a good grasp of market dynamics to improve procurement performance in the public sector. They argued that formalizing the professionalism of procurement capability is inextricably linked to raising the profile and credibility of procurement practice and promoting the development of a common and transferable body of knowledge (Odhiambo & Kamau, 2013).

Saunders (1997) believed that successful functioning of organizational structures and effective operation of planning control systems is dependent on the quality and ability of staff employed. Strategic plans should include information on the acquisition, development, use and reward of human assets. Plans need to take into account the current state of development of the procurement function and the strategic direction in which its state might change. Multi-skilling provides employees with a variety of skills and should be developed extensively. Training is beneficial and generates more than the equivalent cost in payback.

Leenders and Fearon (2002) noted that the large number of items, huge monetary volume involved, need for an audit trail, severe consequences of poor performance, and the potential contribution to effective organizational operations associated with the procurement function are five major reasons for developing a sound, professionally managed procurement system. They further argue that qualifications are crucial for value-based management which requires employees to assess and improve processes while contributing to team performance. In addition, qualifications enhance staff's ability to perform, enabling them to make better decisions, work as a team, and adapt to change, while increasing efficiency, quality, productivity and job satisfaction. Training is often for improving immediate work while education develops people for the long term. To enable individuals to create value consistently, both education and training are needed.

Cousins (2003) stressed that with the ever-increasing popularity of purchasing partnership philosophy, organizations must take a closer look at the educational levels of procurement staff. With procurement's perceived movement from a clerical service to a strategic business function, the calibre of staff in terms of training, education and skills must increase to fulfil its strategic potential. The author asserted that employees need to learn new skills for improving work performance. Procurement comprises a wide range of supply chain processes such as management of value analysis processes, supplier negotiations and quality certification; and supply market research as well as early supplier involvement in processes such as development of specifications and purchase of inbound transportation. This calls for higher professional skills for enhanced performance. In the wake of hunches that the tertiary institutions in the West Nile Sub-Region is operating in line with what Cousins (2003) advocates, only such a study would clarify it.

Baily et al (2005) propounded that knowledge of the mission, the existence of top-down objectives with related performance measures, and process guidelines to link individual or group performance to the firm's goals and expectations of upper management require good qualifications. The use of teams, cross-functional managers, broad process and linkage-oriented job responsibilities, and extensive information systems enable individuals to

balance conflicting objectives and improve processes. Professional qualifications are the fulcrum around which performance turns. Without well-motivated, able and well trained staff, even the more brilliantly conceived plans and strategies can fail. A motivated team whose members work for and with each other can beat a team of less motivated people even if they are greater in talent. To improve procurement performance, it is essential to understand the roles that are to be performed, the standards to be achieved and how performance is evaluated. The question to be answered here was whether the staff had professional qualifications which are the fulcrum around which performance turns; whether they were well-motivated, able and well trained staff.

According to the Scottish Government (2008), the diversity of the work involved in public procurement necessitates that Procurement Officers are competent in a wide variety of generic procurement skills in addition to the specific technical skills and knowledge required when procuring for different sectors and commodities. Thus, it is arguably becoming more important to identify, develop and assess the competences of Procurement Officers in public procurement to ensure that procurement activity is both compliant with legislation and obtains value for money.

According to Boyatzis (2007), a competence is defined as a capability, ability or an underlying characteristic of an individual which is casually related to effective or superior performance. It is a set of related but different sets of behaviour organized around an underlying construct, which we call the “intent”. The behaviours are alternate manifestations of the intent, as appropriate in various situations or times. The concept of competence is used to refer to applied knowledge and skills, performance delivery, and the behaviours required to get things done very well (Armstrong & Baron, 1995). If the procurement staff in the West Nile tertiary institutions had the necessary competencies, this study was to reveal.

According to Hutton and Moulton (2004), competences are divided into two categories, the technical or operant competences and the behavioural or personal competences. Technical competences are any technical skills which are necessary for a job role; behavioural competences are usually an expression of the softer skills involved in effective performance at a company. Technical competences are typically learned in an educational environment or on the job. On the other hand, behavioural competences like decisiveness, integrity and dealing with pressure are learned through life experiences and form our behaviour patterns. Technical competences are often seen as being more important since they are more overt and easily measured. However, Russell (2004) and Hutton and Moulton (2004) stress that behavioural competences are equally important as they constitute abilities and characteristics that help people make the most of their technical competences on the job. The study was to help

us realize if the employees in the study scope had the behavioural competences that would, as Russell (2004) and Hutton and Moulton (2004) assert, help the employees make the most of their technical competences.

Previous studies (Ryan, Emmerling & Spencer, 2009; Boyatzis, 2007; Spencer, 2003) have highlighted the validity and utility of competences in predicting workplace performance across a variety of settings, possibly including procurement performance. In addition, competences are a product of a job and once generated, they link work, people and strategies to improve performance (McLagan, 1997). Hudson (2008) reinforces the above studies; asserting that identifying and nurturing competences is crucial if Procurement Officers are to distinguish themselves as high performers.

Bergenhengouwen, Horn and Mooijman (1996) argued that in a work context, individuals must possess a range of personal competences along with task-specific competences to perform effectively. Many organizations therefore combine both personal competences and job-based competences. In this regard, Russell (2004) stresses that although most models do not necessarily balance these two differing aspects effectively, success in a role depends on the ability to effectively match the technical competences of the role with its required behavioural competences. Against this background, the professionalism and competences of Procurement Officers in tertiary institutions in the West Nile sub-region of Uganda were questionable until this study proved it otherwise.

3 Methodology

The study was conducted following a cross-sectional survey design. The population included the institutions’ Accounting Officers and members of Contracts Committees, Procurement and Disposal Units (PDU), and user departments (Table 1).

Table 1: Sample Size and Selection Techniques

Categories	UCC Pakwach	NTC	Target Population	Sample*	Technique
Accounting Officer	1	1	2	2	Purposive
Contracts Committee	5	5	10	10	Purposive
User department	59	94	153	110	Simple random
Total	65	100	165	122	

Source: *Institutions’ Departments of Human Resource (2015). *Krejcie and Morgan (1970)*

A questionnaire with standardized questions was used to elicit data from the user departments. Questionnaire survey was used for this category of respondents to save on time because their number was too big to interview. Interviews were used to collect data from Accounting Officers and Contracts

Committee members. The validity of the instrument was established at .856 by computing the content validity index using the expert ratings shown in Table 2.

Table 2: Validity of Questionnaire

Raters	Items rated relevant	Items rated not relevant	Total
Rater 1	43	9	52
Rater 2	46	6	52
Total	89	15	104

The Cronbach's Alpha coefficients for the consistence of the instrument are shown in Table 3.

Table 3: Reliability of questionnaire

Variables	Cronbach's Alpha	N of Items
Reliability for legal environment	.717	10
Reliability for institutional human capacity	.763	10
Reliability for institutional culture	.845	6
Reliability for institutional politics	.805	6
Reliability for institutional ethic values	.914	10
Reliability for procurement performance	.745	10

Data was analysed using frequencies, percentages and Spearman Rank Order Correlation. The frequencies and percentages were used to determine the respondents' views on institutional human capacity and procurement performance. On the other hand, Spearman correlation was used to determine the relationship between the variables. The coefficient of determination was computed and expressed as a percentage to determine the variance in procurement performance due to institutional human capacity. The data elicited from the interviewees was analysed using content analysis.

4 Findings

Table 4 shows that the response rate was 76%, which is acceptable as representative of the respondents that were targeted (Amin, 2005; Mugenda & Mugenda, 1999).

Table 4: Response rate

Category of population	Population	Sample	Response Rate	Percentage
The Accounting Officer	2	2	2	100
The Contracts Committee	10	10	10	100
User department staff	153	110	81	74
Total	165	122	93	76

4.1 Human Capacity

The findings on the institutions' human capacity are shown in Table 5.

Table 5: Institutional Human Capacity

Institutional Human Capacity	SD	D	NS	A	SA	Total
There is low level of professionalism in public procurement	9	19	13	25	15	81
	-11%	-23%	-16%	-31%	-19%	-100%
Finding, hiring and retaining dedicated, energetic, and ethical employees with special skills in our institution is always hard	7	17	19	25	13	81
	-9%	-21%	-23%	-31%	-16%	-100%
Procurement Officers in our institution have an uncommonly varied mix of both technical and behavioural competencies	7	9	25	32	8	81
	-9%	-11%	-31%	-40%	-10%	-100%
Procurement Officers in our institution develop and disseminate relevant competencies at the appropriate levels within the procurement hierarchy	8	18	17	27	11	81
	-10%	-22%	-21%	-33%	-14%	-100%
In adequate procurement planning, poor record keeping and abuse of process do not enable highly talented Procurement Officers to perform their job effectively	8	18	15	30	10	81
	-10%	-22%	-19%	-37%	-12%	-100%
Procurement Officers are competent in a wide variety of generic procurement skills in addition to the specific knowledge required when procuring for different departments and commodities	3	15	26	27	10	81
	-4%	-19%	-32%	-33%	-12%	-100%
Our procurement professionals have poor negotiation skills and a poor grasp of market dynamics to improve of procurement	5	15	25	25	11	81
	-6%	-19%	-31%	-31%	-14%	-100%
In our institution the staff handling the procurement activity have the necessary professional qualifications	5	16	14	27	19	81
	-6%	-20%	-17%	-33%	-23%	-100%
In our institute, we lack a motivated team whose members work for and with each.	11	14	15	33	8	81
	-14%	-17%	-19%	-41%	-10%	-100%
Our procurement professionals do not understand some of the roles that are to be performed, the standards to be achieved and evaluation of performance	3	11	19	32	16	81
	-4%	-14%	-23%	-40%	-20%	-100%

KEY: SD = Strongly Disagree; D = Disagree; A = Agree; SA = Strongly Agree.

The findings in Table 5 show that most user department staff members concurred to all items about institutional human capacity (that is items 1 to 10) compared to those who opposed or were not sure. A comparison on these items shows that those that opposed ranged from 18% to 34% while those that were not sure ranged from 16% to 32% and those that concurred ranged from 45% to 60%. From these comparisons, it can be seen that the percentages of those that opposed the items and those who were not sure were lower compared to those who concurred. From this analysis, the following is the interpretation. Findings show most user department staff members were of the view that there was low level of professionalism in public procurement; hiring and retaining dedicated, energetic and ethical employees with special skills was always hard; and Procurement Officers had an uncommonly varied mix of both technical and behavioural competences. Most user department staff members were of the view that Procurement Officers developed and disseminated relevant competences at the appropriate levels within the procurement hierarchy, inadequate procurement planning, poor record keeping and abuse of process did not enable highly talented Procurement Officers to perform their job effectively; and Procurement Officers were competent in a wide variety of generic procurement skills in addition to the specific technical skills and knowledge required when procuring for different departments and commodities. Most user department staff members were of the view that procurement professionals had poor negotiation skills and a poor grasp of market dynamics to improve on procurement; staff handling the procurement activity had the necessary professional qualifications; the institutes lacked a motivated team whose members work for and with each other; and procurement professionals did not understand some of the roles that were to be performed, the standards to be achieved and evaluation of performance.

Interview findings from key informants support the above findings and shed more light on institutional human capacity of tertiary institutions. During interviews with key informants, the low institutional human capacity in terms of professionalism and competences was emphasized as shown in the following responses from UCC key informant A and NTC key informant W:

The professional are few and thus professionalism would not work. Labour is very mobile and they go where there is good pay. Professional ethic and code of conduct are, not followed in spite of filling the ethical forms and signing it every time. The relevant information is hidden and only expired information is availed for the consumption of others (Interview with UCC Key Informant A, 8th May 2017).

There is low level of professionalism in public procurement in some institutions but not all. During hiring and retaining, many things are considered such as some tribes are not trusted, the kind of friendship you

have with the stakeholders and how compliant you will be to your bosses. Procurement Officers in our institution do not develop and disseminate relevant competences at the appropriate levels within the procurement hierarchy (Interview with NTC Key Informant W, 9th May 2017).

The UCC Key Informant B had this to say, *“In the areas of technical competencies we would hire some knowledgeable people to come and help us whenever there were big procurement”* (Interview with UCC Key Informant B, 10th May 2017). Similarly, the NTC Key Informant X was of the following view, *“The procurement department does not have real qualified professionals or certified professionals”* (Interview with NTC Key Informant X, 11th May 2017). The UCC Key Informant C revealed the following, *“None of the staff did a full course on procurement and some are in those positions because they have some kind of relationship with the accounting officer”* (Interview with UCC Key Informant C, 12th May 2017). From the findings, it is shown that the institutional human capacity in tertiary institutions is characterized by low levels of professionalism and a lack of competences required for execution of their duties. Motivation and knowledge about roles that are to be performed, the standards to be achieved and evaluation of performance also compromised the tertiary institutional human capacity as revealed by the UCC Key Informant A and the NTC Key Informant Y in the following:

Employees are only motivated when they know there would be a difference or kick back for their benefit. The accounting officer would guide the procurement department on what to do yet he was not a professional (Interview with UCC Key Informant A, 8th May 2017).

Motivation of employees is not right in our institution. In most cases, all issues to be handled are predetermined by the accounting officer; meetings are for formalities. Knowledge about roles that are to be performed, the standards to be achieved and evaluation of performance is limited because even the right procedures are never followed (Interview with NTC Key Informant Y, 13th May 2017).

Thus, both findings obtained using questionnaires and interview guides revealed that the tertiary institutional human capacity was wanting. Poor tertiary institutional human capacity can lead to poor procurement performance.

4.2 Procurement Performance

User department staff members responded to 10 items about procurement performance in tertiary institutions in the West Nile sub-region of Uganda by

indicating their agreement using a five-point Likert scale as shown in Table 6. The analysis and interpretation of the findings follows the presentation.

Table 5: Procurement Performance

Procurement Performance	SD	D	NS	A	SA	Total
Competitive prices are not paid for focus products.	5 (6%)	11 (14%)	31 (38%)	27 (33%)	7 (9%)	81 (100%)
Inefficient procurement mechanisms are being used.	8 (10%)	13 (16%)	18 (22%)	35 (43%)	7 (9%)	81 (100%)
Suppliers do not deliver the right goods at the right time.	6 (7%)	20 (25%)	17 (21%)	29 (36%)	9 (11%)	81 (100%)
There are delays in the procurement cycle.	1 (1%)	11 (14%)	21 (26%)	33 (41%)	15 (19%)	81 (100%)
There are delays in processing payments.	5 (6%)	6 (7%)	24 (30%)	28 (35%)	18 (22%)	81 (100%)
There are emergency orders frequently used to prevent stock-outs.	5 (6%)	11 (14%)	35 (43%)	23 (28%)	7 (9%)	81 (100%)
The procurement unit is operating inefficiently.	6 (7%)	19 (23%)	19 (23%)	28 (35%)	9 (11%)	81 (100%)
Funded operational training program is not in place to provide staff with procurement training	11 (14%)	18 (22%)	18 (22%)	29 (36%)	5 (6%)	81 (100%)
Procurement prices are not available to the public.	10 (12%)	16 (20%)	31 (38%)	20 (25%)	4 (5%)	81 (100%)
Procurement methods being used do not promote competition.	8 (10%)	10 (12%)	17 (21%)	36 (44%)	10 (12%)	81 (100%)

Findings show that most of the user department staff members concurred with eight items about procurement performance (that is items 1, 2, 3, 4, 5, 7, 8 and 10) compared to those who opposed and were not sure. A comparison on these items shows that those that opposed ranged from 13% to 36% while those that were not sure ranged from 21% to 38% and those that concurred ranged from 42% to 60%. From these comparisons, it can be seen that the percentages that concurred with the items were higher compared to those who were not sure and those that opposed. From this analysis, the following is the interpretation. Findings show most user department staff members were of the view that competitive prices were not paid for focus products; inefficient procurement mechanisms were used; suppliers did not deliver the right goods at the right time; and, there were delays in the procurement cycle and in processing payments. Furthermore, most user department staff members were of the view that the procurement unit was operating inefficiently; funded operational training programme was not in place to provide staff with appropriate training

to maintain or upgrade their procurement skills; and procurement methods used did not promote competition.

On the other hand, findings show that most of the user department staff members were not sure regarding two items about procurement performance (that is items 6 and 9) compared to those who concurred and those who opposed. A comparison of these items shows that those that opposed ranged from 20% to 32%, while those that were not sure ranged from 38% to 43% and those that concurred ranged from 30% to 37%. From these comparisons, it can be seen that the percentages that were not sure about the items were higher compared to those who were opposed and those who concurred. From this analysis, the following is the interpretation. Findings show most user department staff members were of the view that they were not sure whether emergency orders were frequently used to prevent stock-outs or procurement prices were not available to the public.

Therefore, these findings show poor procurement performance in tertiary institutions in the West Nile sub-region of Uganda. Having established the views of user department staff members on procurement performance, the following subsection presents findings linking institutional human capacity and procurement performance.

4.3 Institutional Human Capacity and Procurement Performance

The second hypothesis, “*Institutional human capacity significantly affects the performance of procurement in different tertiary institutions in West Nile sub-region of Uganda*” was tested using Spearman rank order correlation test and the coefficient of determination. The results are shown in Table 7.

Table 7: Institutional Human Capacity and Procurement Performance

	Institutional human capacity
Procurement performance	$\rho = .611$ $\rho^2 = .373$ $p = .000$ $n = 81$

The findings in Table 7 show that there was a strong positive correlation ($\rho = .611$) between institutional human capacity and procurement performance in tertiary institutions in the West Nile sub-region of Uganda. The coefficient of determination ($\rho^2 = .373$) shows that institutional human capacity accounted for 37.3% variance in procurement performance. These findings were subjected to a test of significance (p) and it is shown that the significance of the correlation ($p = .000$) is less than the recommended critical significance at .05. Because of this, the hypothesis “*Institutional human capacity significantly*

affects the performance of procurement in different tertiary institutions in West Nile sub-region of Uganda” was accepted.

The implication of the findings was linear in nature; that is, the stronger effect implied that a change in institutional human capacity contributed to a big change in procurement performance in tertiary institutions in the West Nile sub-region of Uganda. The positive nature of the effect implied that the change in institutional human capacity and procurement performance in tertiary institutions in the West Nile sub-region of Uganda was in the same direction, whereby better institutional human capacity contributed to better procurement performance in tertiary institutions, while poor institutional human capacity contributed to poor procurement performance in tertiary institutions in the West Nile sub-region of Uganda.

5 Discussion, Conclusion and Recommendation

The study sought to determine the effect of institutional human capacity on procurement performance in tertiary institutions in the West Nile sub-region of Uganda. The study established a strong positive correlation between institutional human capacity and procurement performance in tertiary institutions in West Nile sub-region of Uganda. Monitoring and enforcement of quality standards is sometimes weak and the failure can be traced back to problems in human resource capacity to monitor the procurement process. Regulatory agencies rarely manage to enforce standards due to lack of capacity (Banda, 2009).

This study established that tertiary institution procurement professionals had poor negotiation skills; poor grasp of market dynamics to improve on procurement; the institutes lacked motivated teams; and procurement professionals did not understand some of the roles that were to be performed, the standards to be achieved and evaluation of performance. These findings concur with Appiah (2010) who observed that the human capital competence influences the implementation of the public procurement procedures in diverse ways. These ways include the possession of technical skills of the procurement officials; knowledge of the procurement procedures; possession of sufficient professional experience; formal educational background; and the provision of the necessary orientation among staff. All these go a long way to explain the low procurement performance.

In the context of the examined human capital competence, the possession of the requisite technical skills and the provision of the foundational skills affect the procurement procedures and practices (Sultana, 2012). The technical skills are critical in the Procurement Officers being able to adhere to the procurement procedures and practices despite the challenges or complexity involved in the

procurement process (Frooman, 1999). On the other hand, the ability of the organizations to give foundational skills to the Procurement Officers gives them awareness on what is expected of them (Sultana, 2012). Both quantitative and qualitative results, however, have established that the staff were not well qualified in the area of public procurement. Given that both technical and behavioural qualifications are a prerequisite for efficiency and effectiveness, it is no wonder that there is low procurement performance in public performance in the tertiary institutions in the West Nile sub-region of Uganda.

This study established that most procurement personnel had the required knowledge in procurement. The performance of procurement function in any organization requires that the individuals handling the procurement activity should have the necessary professional qualifications (Abdulai & Birachi, 2009). This study established that employees' experience, professional qualification, skills and level of education influences the procurement performance in tertiary institutions in the West Nile sub-region of Uganda. On the other hand, lack of motivation which is critical to good performance of employees could explain the low performance in procurement, since the study findings revealed staff motivation to be at a low level.

Finding of this study are supported by literature that has highlighted that human capacity in procurement performance is of importance. According to Banda (2009), many procuring organizations do not have staff with the right competence critical to good procurement process management. His study notes that there is need for authorities to give much greater emphasis to developing such competence and to adopt best practice more widely. A procurement function that is carried out professionally is the heart of delivery of any service on value for money principle. The findings of this study are similar to another study where it was noted that most of personnel carrying out procurement functions in the local authorities in Kenya had not been sensitized on procurement regulations. In emphasis, the law requires that each procuring entity establishes a procurement unit with the professionals. This was not the case in 15 out of 27 surveyed local authorities in Kenya.

According to the report, it was observed that there were serious challenges in staffing of procurement professionals in the local government institutions, which was similar to the tertiary institutions in the West Nile sub-region of Uganda. Some of the personnel carrying out those duties do not have any certification in procurement and most have never been sensitized and have little knowledge, if any, of the procurement function. In order to sustain effective procurement performance, it is important to optimize the contribution of employees to the aims and goals of the organizations (Frooman, 1999). Technological developments and organizational change have gradually led some employers to the realization that success relies on the skills and abilities of their employees, and this means considerable and continuous investment in

training and development (Sultana, 2012). There is therefore the need for extensive external training for human resources to be able to improve and contribute to the productivity of organizations (Appiah, 2010). The study further revealed that there are clear benefits in ensuring that employees who handle suppliers are professionals and approaches are handled well. Competence can ensure that the benefits of new products and services are brought to the attention of the right person in the organization. It can protect the organization, keep work to a minimum, avoid souring relationships and add to the organization's reputation for efficiency and good management. The study noted that in procurement, it is not what you do but how you do it that matters. The researcher, however, observes that both are important since the how does not arise at all without the what, of procurement.

The study concludes that institutional human capacity has a moderate positive effect on procurement performance in tertiary institutions in the West Nile sub-region of Uganda. The study found that a unit increase in institutional human capacity will lead to a 37.3% increase in procurement performance in tertiary institutions in the West Nile sub-region of Uganda. The study established that employees' experience, professional qualification, skills and level of education influence the procurement performance in tertiary institutions in the West Nile sub-region of Uganda.

In the context of the human capital competence, the study recommends that the tertiary institutions in the West Nile sub-region of Uganda should pay keen attention to the technical skills of their procurement officials through recruitment, professional exposure in conferences and seminars, and in-house training. This will enable the tertiary institutions to be better equipped to execute prudent procurement procedures and practices.

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Causes of Dropouts at Cardinal Rugambwa Memorial University College, Tanzania

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Abstract. This study was conducted to verify, using the case of Cardinal Rugambwa Memorial University College, the widely held view that financial challenges are significant determinants of student dropouts in private universities in Tanzania. The study was conducted following a case study design. The findings were that with exception of tuition fees, financial constraints are significant causes of students' failure to complete their study programmes. Other reasons that were found to be substantial causes of drop outs in this University College are related to students' domestic and private reasons that include going to institutions near the home to take care of or being near their spouses. Administration related bottlenecks and gaps in guidance and counselling were also found to lead to dropout. Policy recommendations and areas for future research are identified.

Keywords: Liberalisation; Student affairs; Funding.

1 Introduction

When higher education is effectively planned and administered, it offers remarkable private and public dividends. On one hand, it bears potential to the beneficiary to acquire meaningful empowerment and therefore, emancipation. On the other hand, society benefits through higher education training and teaching activities, as well as through enhanced research interventions to augment lifestyles (Psachalopoulos & Woodhall, 1985). Therefore, demand for higher education has been expanding, notably on the African continent and higher educational institutions have responded by enrolling massive numbers of students each year. For example, between 2000 and 2006, Africa's higher education student population increased by 55 percent from about 6 to 9.3 million (World Bank, 2010).

Nonetheless, the expansion in student enrolments into higher education has allegedly been constrained by issues of sustainable financing (Court, 1999). The World Bank Report (2010) restated that while Africa has maintained its public investment in higher education over the last two decades – allocating, though paltry, around 0.8 per cent of its gross domestic product (GDP), and more or less 20 percent of its present public expenditure on education to this sector, the cumulative enrolment growth in higher education has more than tripled, from 3 million in 1991 to over 10 million in 2006. This is an average growth rate of about 16 percent. Worryingly, public resources allocated to current expenditure in the sector of higher education, on average, has only doubled (an annual average rate of at least 6 percent) - causing extensive mismatch between social demand for higher education and the financial or supportive resources (World Bank, 2010). As mitigating measures to address the over-constrained public expenditure on higher education, African governments entrenched liberal reforms to commercialise and privatise for greater democratised access to higher education institutions. The intention was clear from onset: to ascertain raised quality of service delivery and augmentation of private as well as social progress and development (Mamdani, 2007; Court, 1999).

In Tanzania, liberal reforms in the higher education sector were embraced in 1990s to attend to the rising social and private demand for higher education, in the situation where scarcity of public resources was becoming realistically very perennial, after a period of totally free education provided by the Government. In 1992 the government of Tanzania introduced a cost-sharing policy that, in essence, expected beneficiaries to gradually contribute funds to meet the cost of training and education. The policy was to be achievable in three major stages, starting in 1992 when the first phase was unveiled. During this stage, students were henceforth required to meet transportation and academic, as well as administrative costs. The second phase was then flagged off in 1994. In this, living expenses (mostly food and housing), were meant to be covered by the students themselves. Nevertheless, those who could not afford the costs, repayable loans were henceforth made available something still standing. In the last phase, starting with the year 2005 to date, the students and or the benefitting households were meant to contribute to their overall education costs (Ishengoma, 2008; Dachi, 2018).

In ultimate, all is well for those students who are lucky to get onto the government loan scheme; nonetheless, “When it comes to the question of who benefits from the process of financing higher education, one can conclude that, it is the upper class because the loans scheme especially from the government, as the main financier of education, is being implanted without taking into consideration other issues like; the level of income of the families’ (Dachi, 2018; Omari, 1994). This implicitly means that the poorest of the poor normally

miss out. To make matters worse these have also been perceived as the ones who have limited access to the vital information relating to the loan possibility. Even so, what is distressing is the fact that those that attempt to get enrolled into higher institutions of their choice via hard earned private financial mobilizations; often drop out of the formal higher education pipeline – the allegation that requires closer and systematic scrutiny.

In Cardinal Rugambwa Memorial University College (CARUMUCO), for example, in academic year 2016/2017 slightly over 50 students out of 243 (21 per cent) new enrolments for this period dropped out of the cherished education before the end of their second semester allegedly as a result of constrained financial realisation, something that left many in management and administration greatly amazed, *albeit*, with unsatisfactory explanations. At the moment (*ceteris paribus*) it is not yet clear whether it is really the financial constraints that could be responsible for this paucity on this and possibly on the other former cohorts. Empirical investigations to get reliable answers to the predicament are called for, thus if Tanzania is to remain on the rail of its development Agenda of 2025.

Five objectives are set to achieve the purpose of the study.

1. To examine whether students' failure to complete their studies is caused by failure to get money for transport to and from the College.
2. To investigate whether student's failure to complete their studies is caused by failure to get tuition fees.
3. To investigate whether students' failure to complete their studies is influenced by failure to get administrative fees.
4. To establish whether students' failure to complete their studies is caused by failure to get money for food.
5. To establish whether students' failure to complete their studies is due to failure to get housing rent.
6. To establish the *other* causes of the dropout rates at CARUMUCO.

2 Theoretical and Conceptual Orientation

This study was premised on Ernest Hemingway Iceberg Theory (IBT) which implicitly posits that always any occurring phenomena/ observations are but just a very limited amount of reality (the tip of something else which is normally very gigantic). Connotatively, whatever is available or visible about a situation or phenomenon is normally a symptomatic representation of something else. The theory gets its name from the reality that only about 10 percent of an iceberg's mass is seen outside while the rest (about 90 percent) of it is unseen; hidden or covered deep down in water (Figure 1).

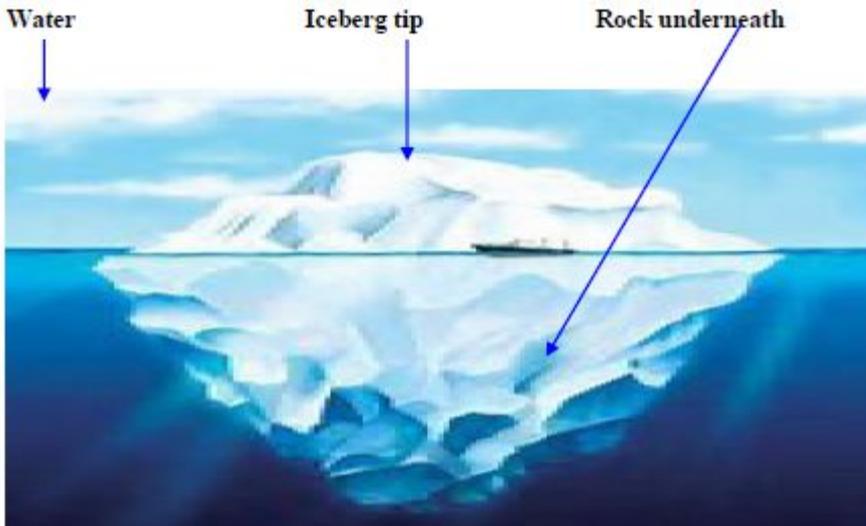


Figure 1: Pictorial Representation of IBT
 Source: www.businessdictionary.com/definition/iceberg-principle.html

It is because of this that successful sailors are usually fearful of passing near or through the iceberg, otherwise their boats can be destroyed by the rock underneath. In Economics of Education, Organisational Behaviour and Management, it is always essential for managers not to take things for granted as most of the organisational phenomena are mere symptoms. Prudent organisational managers ought to uncover the causes underlying any organisational behaviours. It is with this understanding that this study undertook to scrutinise the commonly held view that financial challenges are the antecedents of the dropouts at CARUMUCO.

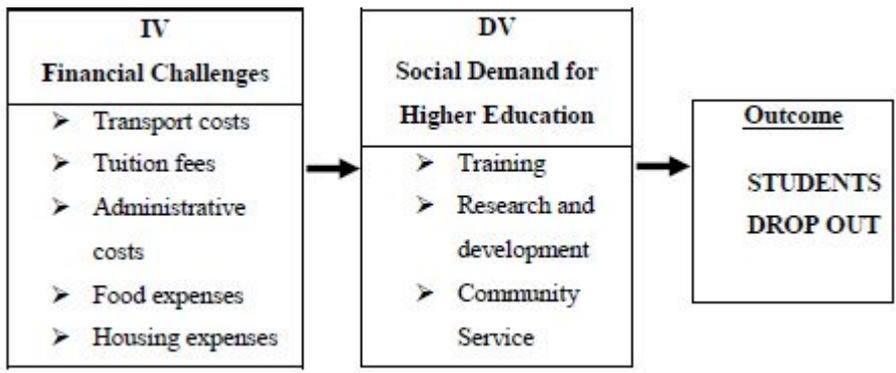


Figure 2: Conceptual Framework
 Source: Adapted from Ishengoma (2008) and Dachi (2000).

Basing on IBT (Figure 1), ice tips represented ineffective social demand for desired training and research skills, manifested in form of drop-out of students in CARUMUCO. Yet, behind this symptomatic behaviour (the ice tip), there are possible hidden causes; the rocks, otherwise conceived by the study as the financial challenges (independent variable) with the underpinnings of: transport costs, tuition fees, administrative costs, food expenses and housing expenses, *inter alia*, that allegedly debar social aspirations for University education (Figure, 2).

In Figure 2, financial challenges (the study independent variable), according to Ishengoma (2004), were underpinned by transport, tuition and administrative costs. Others were housing and food expenditures (Figure: 2). The dependent variable of the proposed study was perceived as social demand, underpinned by training and research – *inter alia*, as adapted from Tanzania Commission for Universities (2017). The researcher assumed that social demand for University education ought to be accompanied by ability to meet costs involved in order to realise expected outcomes. Nevertheless, in the case where such demand is ineffective, diverse consequences really manifest. Drop outs in the study were perceived as consequences of ineffective social demand for higher education, where clients fail to raise the required funds, therefore.

3 Methodology

Using application forms, registers and attendance lists for academic year 2016-2017, the researcher established the addresses of the 64 flesh students who dropped out of the University College during the course of the year. Categorical (Yes/No) and qualitative data were collected and recorded from 48 locatable and willing respondents, using five structured and open-ended telephone conversation/interview items (Table 1); all developed from the research hypotheses (H₁):

1. Students' failure to continue with studies at CARUMUCO is caused by their failure to get tuition fees.
2. Students' failure to continue with studies at CARUMUCO is influenced by their failure to get administrative fees.
3. Students' failure to continue with studies at CARUMUCO is caused by their failure to get money for food.
4. Students' failure to continue with studies at CARUMUCO is due to their failure to get housing rent.
5. Students' failure to continue with studies at CARUMUCO is caused by their failure to get transport to and from the University College.
6. Student may have other reasons leading to their failure to continue with studies at CARUMUCO.

Table 1: Structured Interview Guide

Item	Statement	True	Not true
1	I dropped out of my program due to failure to get tuition fees		
2	I dropped out of my program due to failure to get administrative fees		
3	I dropped out of my program due to failure to get money for food		
4	I dropped out of my program due to failure to get housing rent		
5	I dropped out of my program due to failure to get transport money to and from the CARUMUCO		
6	Please specify any other reason(s) for dropping out of your program		

Analysis of descriptive data was done using percentages, while data on hypotheses was analysed with calculations of *chi square goodness - of - fit Test*, using the model: $\chi^2_{obs} = \sum [(f_o - f_e)^2 \div f_e]$ at appropriate significance level ($p=0.05$) and degree of freedom ($df = k-1$), where 'k' stands for number of response categories, according to Amin (2005). In this analysis 'k' stood for 'True' and 'Not true'. Then $(f_o - f_e)$ referred to the difference between observed and expected frequencies.

4 Findings and Discussion

The findings are summarised in Table 2.

Table 2: Descriptive and inferential statistics

Item	True (f _o)	Not true (f _o)	N	f _e	χ^2_{obs}	χ^2_{cv} : df=1 P=0.05
Failure to get tuition fees	29(63%)	17(36.96%)	46	23	3.13	3.841 > (χ^2_{obs}) Insignificant
Failure to get administrative fees	32(69.6%)	14(30.43%)	46	23	7.044	3.841 < (χ^2_{obs}) Significant
Failure to get money for food	35(76.1%)	11(23.91%)	46	23	12.552	3.841 < (χ^2_{obs}) Significant
Failure to get housing rent	16(34.8%)	30(65.22%)	46	23	4.260	3.841 < (χ^2_{obs}) Significant
Failure to get transport money to/fro	03(6.52%)	43(93.48%)	46	23	34.782	3.841 < (χ^2_{obs}) Significant

Source: CARUMUCO Admission Records (2016/17)

Table 2, shows that over (29)63.4% out of 46 respondents opined that they dropped out of CARUMUCO due to failure to get tuition fees. Nevertheless 17(36.96%) out of 46 respondents, did not agree with the set notion. This is a relatively big percentage signifying that there could be some other reasons that are responsible for this other than the issue of tuition fees only, almost 40 per

cent drop outs some of which are catered for in the proceeding hypotheses. This phenomenon prompted the researcher to go ahead to calculate and analyse inferential data on; H_0 : *The student's failure to continue with studies at CARUMUCO is not caused by one's failure to get tuition fees.* This was tested using the following model:

$\chi^2_{obs} = \sum [(f_o - f_e)^2 / f_e]$, at appropriate significance level ($p=0.05$) and degree of freedom ($df = k-1$), where 'k' stands for number of response categories, was applied, according to Amin (2005). It was found out that $\chi^2_{ob} = 3.13$ and this was less than

χ^2_{cv} , which was (3.841: $df = 1$ and $p = 0.05$), implying that results (claims) were statistically not significant. This led to the retention of the null hypothesis (H_0), as the research hypothesis (H_1) was dropped. It was therefore concluded that the student's failure to continue with studies at CARUMUCO is not mainly caused by one's failure to get tuition fees. This is really possible because according to the University Bursar students are normally given ample time in which to clear the University tuition fees. This is seen as a democratic imperative assisting even those students that happen to come from poor families or households.

It was also found out that a good number of students drop out of CARUMUCO due to failure to get sufficient and timely funds to meet administrative costs (about 70%); and failure to get money for food during student times at the University College (76%). During the conversations with all the respondents it was learnt that although the administrative costs are not substantially and prohibitively high as compared to tuition fees which is in millions, these costs are usually needed by University authority at once. Tuition fees are usually paid on a *PRN* (whenever convenient) basis. When a chi square **goodness - of - fit Test** (χ^2) test, was applied with the statistical model: $\chi^2_{obs} = \sum [(f_o - f_e)^2 / f_e]$ as data were both numerical and categorical (Amin, 2005), it was discovered that the claims on, "failure to get sufficient and timely funds to meet administrative costs; and failure to get money for food during student times at the University College", were statistically significant as ($\chi^2_{obs} > \chi^2_{cv}$) at ($p=0.05$ and $df = 1$). In the case of the former,

$\chi^2_{obs} = 7.044$ and $\chi^2_{obs} = 3.841$, respectively. Furthermore, in the case of the latter, $\chi^2_{obs} = 12.552$ and $\chi^2_{obs} = 3.841$. This led to the rejection of the null hypothesis (H_0) and retention of the research hypothesis (H_1). It was therefore established that both 'ability to get and pay administrative costs' and ability to get money for food while at the University College, are unfortunate issues that detour students either from entering or continuing with studies at CARUMUCO.

However, most of the respondents did not agree with the interview statements that one dropped out of CARUMUCO due to "failure to get housing

rent and transport money to/fro CARUMUCO". Over 65 per cent and 93 percent respectively did so (Table 2). This probably meant that transport and accommodation costs in the country could be substantially high and prohibitive. To confirm whether these claims (H_04 & 5) were really significant, it was found out via the chi square tests at the appropriate significance levels and degree of freedom that although the respondents declined to uphold the 'True' stand on the set notions, their assertion on the 'Not true' side were highly substantial or significant because ($\chi^2_{obs} > \chi^2_{cv}$), that is, ($\chi^2_{obs} = 4.260$ and $34.384 > \chi^2_{cv} = 3.841$) - Table 2.

The 46 respondents were further asked to give other reasons outside those in the structured category. The most outstanding responses are summarised in Table 3.

Table 3: Summary of Reasons cited for Dropping Out

Item	Freq.	Male	Female	Remark
Discovered that College life was not interesting	8(17.4%)	5	3	Low
Administration was not approachable for needed help	2(4.3%)	1	1	Negligible
What I expected to learn was not forthcoming	3(6.5%)	3	0	Negligible
I Joined another institution near our home area	26(56.5%)	16	16	Fairly High
I got domestic problems	25(54.3%)	17	8	Fairly High
I preferred employment to schooling	7(15.2%)	5	2	Low
I got problems with some friends	9(19.6%)	3	6	Low
I was disgusted with the methods used in teaching	1(2.2%)	1	0	Negligible

On this qualitative - open ended notion, the most outstanding reason given as the possible precursor to the dropouts in CARUMUCO was: 'I joined another institution near our home area'; about 60% (16 female and 16 male) of the 46 respondents, said so in the interviews. Substantially about 50 per cent of these gave the reason that they were married and wanted to be near their families. Another reason advanced was 'I got domestic problems'- about 54%, most of these being male students (17 out of 25). Incidentally, these were also giving the reason related to marriage issues. Other reasons given (though not substantial) were, respectively: 'I got problems with some friends – 19.6%; Discovered that College life was not interesting – 17.4%; I preferred employment to schooling – 15.2%. Other responses were just negligible (Table 3).

In view of the findings and in the context of privatised and commercialized service delivery in CARUMUCO, the following recommendations are proposed:

1. The University College should endeavour to put in place alternative funding sources to assist the students that can't afford. This could be (if and when possible) in form of:

- a) Provision of free place provisions to those students joining the University College with exceptional skills e.g. in games and sports. Their financial support and maintenance can be enabled through enhanced grants and endowments from motivated friendly partners such as the mother church, local and international fraternities, local administrative agencies, as well as relevant multinational and international agencies
 - b) Secondly, the University can roll out feasible commercial and development projects e.g. in agriculture, carpentry, leisure and recreational activities e. g. in music, dance and drama - where needy students can become involved, with pay, to meet college obligations and requirements.
 - c) Conversely, the College can bench mark with those succeeding higher educational institutions in student retention, particularly private Universities. It is hoped this will augment the University think tank to plan for more feasible measures in this area, thus becoming more effective and efficient.
2. The governance and management of CARUMUCO should put in place a strong counselling and guidance department to render timely advice to the students in matters that are claimed to lead the students' dropout from the formal educational pipeline.

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Historical Development of Science and Technology Education in Nigeria: Issues, Challenges and Prospects

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Abstract. This paper examines the historical development of science and technology education in Nigeria. In the process it examines pertinent issues, challenges and prospects. The rationale of the paper derives from the understanding that science and technology education is of immense benefit to the nation's development. The paper uses both primary and secondary data. The data are subjected to periodic and thematic analyses in order to arrive at historicised conclusions out of which recommendations are drawn. It was found that science and technology education in Nigeria has been in existence since the commencement of private education in 1842. However, its progress has not featured great incorporation in the manufacturing and industrial sectors of the economy. It is, therefore, recommended that science and technology education be given greater emphasis in real life situations in the Nigerian socio-economic milieu.

Keywords: STEM; Curricula reform; Development.

1 Introduction

Science has been defined differently by various people. According to the Science Teachers Association of Nigeria (STAN, 1988) science is part of human culture and social institution. It refers to some form of organized knowledge, on which we can ascribe a sort of prescribed esoteric procedure through which nature is unravelled (Shaibu, 1973:132). Shaibu stated that the term science cannot be used in isolation without associating it with technology.

Technology on the other hand, is an integrated activity, which draws on many different disciplines (Brown, 1980:31-32). Hornby (2015:1609) Oxford Advanced Learner's Dictionary defines technology as the scientific study and use of mechanical arts and applied sciences, e.g. engineering, and the application of this to practical tasks in industry. Technology is a systematic

application of manufacturing methods and industrial arts to enhance efficiency in human activities. It can simply be described as the result of man's efforts to do things more efficiently and effectively (Anyifite, 2007:117-119).

Education refers to the totality of experiences to which an individual is exposed, which makes him to be useful to himself and the society in which he lives during his lifetime. Thus, education is a basic human need without which personal or national development is inconceivable. Since science and technology education portray a somewhat symbiotic relationship to education, the nature or quality of science education can be judged only with reference to its enabling capacity to fulfil personal and social aspirations (Ahmed, 1979: 109).

Science and technology education can therefore be seen to be important for educational and societal development in Nigeria. Moreover it can be seen that science and technology education is given great emphasis in Nigerian education (FRN, 2013:55). However the emphasis does not appear to translate to great scientific and technological development of the Nigerian socio-economic happenings (Buhari, 2016:2, 3, 45). It is therefore important to examine the history of science and technology education in Nigeria, with the view to see the features of the education, and thereby consider the challenges and the prospects of the education. This is important because science and technology education need attention from all aspects of education, including history of education, for the development of education and the nation; and by implication the development of Africa and the world.

The study follows a historical approach. This is because the study is historical in nature. The study would therefore employ primary and secondary sources of data including: diaries, log book, reports, minutes of meetings, policies and other related materials. The data would be subjected to periodic and thematic analyses in the fashion of historical research in order to arrive at historical conclusions and sound recommendations.

2 Global Antecedents of Science and Technology Education

Anyifite (2007:117) stated that the trends in science education had for long centred on personal pupils involvement. Prior to the curriculum reform projects initiated in the late 1950's in the United States of America, emphasis on science education had been on the acquisition of factual knowledge. According to Brown (2015:34), this was followed by the Physical Education Committee (PSSC), Chemical Education Materials Study (CHEM Study), Chemistry Board Approach (CBA) and Biological Science Curriculum Study (BSCS) in the United States of America. This was followed by Nuffield projects in the United Kingdom, and then a host of other projects around the world including Nigeria.

A major aim of the aforementioned projects was to give a pupil the opportunity of becoming a scientist and to be well versed in how a scientist looks for evidence and how he tests hypothesis. Brown (2015:34) stated that this approach dominated the various curriculum reforms up to the early 1970s. The development of science education was suggested by Booth (1975:22-25) to include science for citizen, science for action, and pure science.

Brown (2015:34) making reference to Edward and Levner (1975) indicated that the Educational Policies Commission of the National Education Association and the American Association of School Administrators emphasised seven basic values underlying science:

1. Longing to know and to understand;
2. Questioning of all things;
3. Search for data and their meaning;
4. Demand for verification;
5. Respect for logic;
6. Consideration of premises and
7. Consideration of consequences.

These values indicate that the study of science should be among the principal goals of education. This is because education is interested in knowledge and the detail processes of acquisition of knowledge; which as can be seen from the list above are the preoccupation of science.

3 The Formative Period of Science and Technology Education

The teaching and learning of science in Nigerian schools and colleges started with the arrival of the earliest Christian missions that introduced western education in the country. Following the advent of these Christian missions, especially the Church Missionary Society (CMS), Roman Catholic, Wesleyan Methodist, Baptist, Presbyterian, and Qua Iboe, elementary schools were established in the country and elementary education began (including science education).

The establishment of the first set of secondary schools in Nigeria, beginning with the CMS Grammar School, in Lagos, in 1859 made the teaching of science subjects a feature of secondary school education in the country. Some rudiments of science education including Arithmetic, Algebra, Geometry and Physiology, Vocational Studies, and Agriculture were taught. The Hope Waddell Institute Calabar, founded in 1861; St Andrew's College, Oyo, 1876; Baptist Training Centre, Ogbomoso, 1899; Wesleyan Training Institute, 1905; and others had science subjects in their curricula too (Brown, 2015:37).

It is important to note that before 1932, there were no post-secondary institutions for the teaching and learning of science in Nigeria after the only specialized institution, the Medical School attached to the CMS Theological School, Abeokuta folded up. Thus science education started realistically at the post-secondary school level in Nigeria with the establishment, in 1932 of Yaba College, Lagos.

4 Science and Technology Education Curriculum Development

The major curriculum development in science education in Nigeria commenced in 1932 with the establishment of Yaba College. The college was upgraded in 1963 to become Yaba College of Technology, to run courses in Engineering, Agriculture, Medicine, Surveying, Science, and Teacher Training to help in filling existing vacancies in relevant government departments (Brown, 2015:37). Yaba College of Technology was reputed to have produced the first set of graduates who taught science in secondary schools and played significant role in setting the pace for the development of appropriate science education curriculum in secondary schools in Nigeria.

The introduction of Higher School Certificate (HSC) in 1951 marked a turning point in the history of curriculum development with reference to science education in Nigeria. Schools had the opportunity of offering science subjects such as Biology, Chemistry and Physics at the higher school certificate level with particular emphasis on laboratory work to meet the practical requirements of science subjects. This led to the establishment of an examination board with its headquarters in Accra, Ghana, following Jeffery report of 1950. The board later metamorphosed to become the West African Examination Council (WAEC), which reviewed the curriculum of school subjects including science, with its first examination in 1955.

The science curriculum of WAEC 'O' Level and Higher School Certificate (HSC) underwent a review in May, 1968 by the Science Teachers Association of Nigeria (STAN), established in 1957. Furthermore, the Federal College of Arts, Science and Technology located at Ibadan in 1950, Zaria in 1952, and Enugu in 1954, had a fairly comprehensive curriculum in science education and science related fields of architecture engineering, pharmacy and so forth. Anyifite (2007:119-120) and Brown (2015:38) stated that during the early 1960's, science curriculum in Nigeria was geared towards fulfilling overseas examination requirements such as those of Cambridge School Certificate Examination and the London General Certificate in Education. A recent trend of science project development however, has been the integration of subjects from the fields of science and technology for primary and junior secondary

education. At the senior secondary school level, emphasis has been on inquiry and problem solving activities (FRN, 2013:30-33).

The historic National Curriculum Conference, held between 8th and 12th September, 1969 could be said to have spurred various bodies and agencies of government to developing science curricula for both primary and secondary education levels part of which brought about the National Policy on Education (NPE) 1977, revised 1981, 1998, 2004 and 2013. The NPE (1977) and its subsequent editions ushered in the 6-3-3-4 system of education and the current 9-3-4 system of education which placed a lot of emphasis on science and technology education.

Educational technology could be said to have started in Nigeria with the visual era (i.e. the use of simple teaching aids like apparatuses and lesson note preparation (Shaibu, 1973:132-133; Nash, 1987:11-13). During the visual era, emphasis was placed on the preparation of simple and low cost instructional materials in schools and colleges, particularly, Teacher Training Colleges.

Ogunranti (1982:70) stated that the visual era was followed by the era of radio media in education which started in the early 1940s and mid-1950s. The first educational radio programme was in English language broadcast by the Radio Distribution Service under the Post and Telegraphs Department (Brown, 2015:39). The education programme of the station was taken over by the Nigerian Broadcasting Service (NBS), established in 1951 incorporated into the Nigerian Broadcasting Corporation (NBC) in 1957.

A significant landmark in the development of educational technology took place on 1st January 1958 when the Western Nigerian Ministry of Education's Audio Visual Centre, Ibadan and the Nigerian Broadcasting Corporation (NBC) broadcast their first educational programme. This premier attempt was followed by other regional ministries of education which opened audio-visual centres in their regions in which broadcasting to schools was emphasised. The educational radio broadcasting later metamorphosed into Nigerian Educational Broadcasting unit in 1960. In 1982, the Federal Radio Corporation of Nigeria (FRCN) educational service, Ibadan was established.

The era of radio media was followed by the audio-visual era in the 1970s. According to Booth, (1975:22-25); and Brown (1980:39-40), it was during this period that audio-visual centres were established by all education ministries in the country with the assistance of United States Agency for International Development (USAID). A unit of the audio-visual centres in a region was to liaise with broadcasting house for the broadcast of recorded programmes. A new dimension in Nigerian education technology resources was introduced in the country, following the establishment of the first television station in Ibadan, the first of its kind in sub-Saharan Africa, in 1959 (that was Western Nigerian Television). Education programmes formed an integral part of the television activities from inception, even though the establishment of the education unit of

the Western Nigerian Television (WNTV) was targeted only at Secondary Grammar Schools and Teacher Training Colleges, to achieve the following:

1. Reduce Teaching Deficiencies In Science Subjects;
2. Provide Examples Of Good Teaching In Order To Upgrade The General Quality Of Instructional Activities In The Classroom;
3. Enrich Learning Contents (Ogunranti, 1982:12-14).

It is important to note that the philosophy of science teaching was to prepare the young ones for useful living; and to provide solid foundation for those intending to proceed to higher education. At this stage, emphasis was more on the acquisition of scientific concepts and process skills (Nwachukwu, 2012:4-6). Nwachukwu (2012) stated further that the Federal Ministry of Education in the late 1970s convened a meeting of Nigerian science educators with a view to designing a modern science curriculum in line with the new National Policy on Education. This effort witnessed the emergence of the core curriculum for primary science, Integrated Science for Junior Secondary schools, and Biology, Chemistry and Physics curricula for Senior Secondary Schools (SSS) in Nigeria. The new Senior Secondary School curriculum replaced the New Senior Secondary Science Project (NSSSP) in order to meet the demands of the 6-3-3-4 system of education.

The contributions of the Nigerian Educational Research and Development Council (NERDC), the WAEC, National Examination Council (NECO), National Business and Technical Education Board (NABTEB) and other bodies cannot be under-estimated in the development of science and technology education in Nigeria. According to Nwachukwu (2012:4-10), the aforementioned factors mainly constitute the features of historical development of science and technology education in Nigeria.

5 Challenges Confronting Science and Technology Education

This part of the paper considers briefly some challenges confronting Science and Technology Education in Nigeria. Various aspects of science education occur knowingly and unknowingly during formal, informal and non-formal education. This is because science is linked in several ways to various happenings in the society, especially through its technological application (Nwachukwu, 2012:5). According to Ziman (1980:16-18), the basic need in science education is to teach about Science, Technology and Society (STS) and the various ways in which they interact with one another. He observed further that this seems not to be so much emphasised in Nigeria. The students are not given the level of encouragement that would make them explore their various latent scientific abilities to the fullest, because many of the little discoveries

they make are not pursued to great heights by their teachers and the society to the extent that the ideas behind their discoveries could be bought by factories and industries for utility in large scale industrial activities.

Moreover there are the challenges of erratic supply of electricity, inadequate internet access, and inadequate laboratory facilities. In addition teachers do not use adequate method of teaching in many cases. Finally government policy on science education and technology education appears to be inconsistent. Amodu (2011) stated that at a time, the policy makers in Nigeria gave Technology Education (TE) autonomy, and separated it from Science Education. But at present, the new education policy merges Technical Education (TE) with Science Education to become Science and Technology Education (STE) (FRN, 2013). This trend of inconsistency has negatively affected the image and performance of Science and Technology Education in Nigeria. Thus there is need for consistency in policy and for greater encouragement of learners in the process of discoveries, and for the promotion of indigenous discoveries in the manufacturing and industrial sectors of the Nigerian economy.

6 Prospects of Science and Technology Education

The National Policy on Education (FRN, 2013) is favourably disposed to the acquisition of appropriate skills and competencies as veritable instruments for the individual to live and contribute to the growth and development of his society. This is because science and technology education offer a wide range of programmes in science and technology. For example, programmes such as Auto-mechanic, Metal Work, Building, Wood Work, Electrical and Electronics Engineering, Plumbing, Carpentry and so forth are meant to provide knowledge and skills that would make the learners functional members of the society. When such skills are imbibed by the learners they would be able to participate gainfully in the development process of Nigeria, and of Africa, and the world at large.

Thus what is left is the promotion of the culture of acquisition of scientific and technological disposition by the learners and the society at large, such that the efforts of the up-coming learners are rewarded with the processing of their inventions till the stage of utilisation in Nigerian factories and industries for the improvement of the Nigerians society, and eventually other societies. This is what is done in developed nations. They encourage their up-coming scientists and technologists in the process of their inventions (by granting them recognition through utilisation of their inventions at industrial scale in the manufacturing and industrial sectors of the society). The developed nations are the better for it today. They look inward first, before looking outward for acquisition of inventions. This helps them to promote their indigenous

discoveries and improve the lot of their indigenous inventors and their societies at large. Nigeria, and indeed other developing nations can learn from them.

7 Conclusions and Recommendations

It can be concluded that Nigeria lacks the required science and technology education culture to make her great in the comity of technologically advanced nations of the world. Also, this paper has revealed that development process in Nigeria seems not to have recognised the critical role of science and technology education, in terms of recognising indigenous efforts in the development of science and technology disposed nations. Moreover the study reveals the need for policy consistency in the National Policy on Education on matters of science and technology education.

It is recommended that there is need for policy consistency with regard to policy statements on science and technology education in the National Policy on Education.

The learning of science and technology should be further encouraged by the society such that up-coming learners would be encouraged in the process of exploration for discoveries and innovations.

Educational facilities in the learning of science and technology in the schools should be improved such that the learning could be enhanced. Such facilities include regular supply of electricity, adequate access to internet, and adequate laboratory.

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Challenges and Prospects in Tanzanian Higher Education

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Abstract. This short paper briefly discusses some of the challenges facing higher education in Tanzania and the panaceas that government and other institutions are implementing to address the challenges. The paper uses secondary data obtained from the country's Ministry of Education and Vocational Training and from selected higher education institutions in the country. The challenges are identified as occurring mainly in the areas of funding, quality assurance, relevance, ICT, equity and internationalization. The following strategies for addressing these challenges are reported: matching rising enrolments with public facility enhancement; encouraging the establishment of private universities; cost-sharing; affirmative action; and distance education.

Keywords: Innovation and reform; Quality assurance; Funding.

1 Introduction

In an attempt to address development challenges, Tanzania came up with its "Development Vision 2025" which among other things envisages "a well-educated and learning society"- a nation that produces the quantity and quality of educated people, sufficiently equipped with the requisite knowledge and skills to solve the society's problems, to meet the challenges of development and to attain competitiveness at national, regional and global levels. This is considered critical after realizing that the insufficient quality of the nation's workforce is a serious constraint to national development efforts.

Higher education in Tanzania, as elsewhere in Africa, is expected to be pivotal to national socio - economic development. To achieve this, it has to train high level technical and managerial cadres needed in leadership positions outside education. Further, it has to generate knowledge, creativity and the innovations required for national and international sustainable growth and development. Above all, it has to offer its recipients with analytical skills to add to social and economic progress. Efforts by the Tanzanian government to put in

place mechanisms to enhance access, accessibility and capacity enhancement in the higher education system and operational effectiveness, several challenges are widely alleged to be rife in the crucial areas of quality control, sustainable funding, expansion and accessibility, gender impartiality, Information and Communication Technology (ICT) and human resource competence – negatively impacting higher education market viability in the largest East African nation.

This Paper highlights and explains the nature of each challenge and then argues out efforts by the Government of Tanzania to entrench deliberate strategies as interventions for the claimed paucity.

2 Quality

According to Asmal (2014), quality is vital for respect and status. Hence, one of the main ways higher education qualities are evaluated is through the quality of graduates, whose performance is defined by their relevance to the society, when they render desired service while playing their essential roles of being contingently creative and innovative. In East Africa, quality assurance concern has come to the forefront and gained prominence in the past two decades because of massification and increased enrolment of students in higher education. For example, the Uganda's Quality Assurance Framework as enshrined in the National Council for Higher Education (2006) compels higher education institutions (HEIs) to establish Quality Assurance mechanisms to coordinate quality issues confronting them. There is evidence that HEIs in this country have put in place QA structures. However, there are persistent complaints about the quality of teaching, research, community engagement as well as governance of (HEIs) in Uganda (Kasozi, 2003; Mamdani, 2007). Building the capacity of leaders and managers in HEIs to initiate, implement and monitor QA processes at institutional level, remained imperative thus.

In Tanzania's private and public universities quality assurance is primarily guaranteed through: university entry requirements that are set at a minimum of two Advanced Level passes in public examinations; minimum qualification of a Masters degree to the university academic staff; engagement of external examiners; peer and student evaluation; and the triennial review of every university by the National Council for Higher Education (NCHE). In addition, vice chancellors of all public and private universities are members of the NCHE, a body responsible for quality assurance in university education, which means that they become responsible for quality assurance in their own institutions (TCU, 2013).

However the high social and private demand for higher education in Tanzania which has led to its current expansion and improved accessibility

country-wide, has brought some challenges on quality measurement and assurance in general. There have been significant allegations among members of the public that the quality of education is steadily declining (Ndalichako, 2011). Unfortunately the allegations have not pointed out the outstanding ramifications that call for strategic interventions. Nevertheless, the Government of the United Republic of Tanzania has since the late 1990s responded variously:

- The Ministry of Education and Vocation Training established the National Accreditation Council for Technical Education (NACTE - 1997) and the Universities Act No.7 (2005) established the Tanzania Commission for Universities; both to oversee coherent management and quality assurance for the technical and University education, respectively.
- Hitherto, government encourages entrenchment of international benchmarking for improved quality assurance under; deliberate academic staff/student exchange programmes; research proficiency (Ndibalema, 2010).
- In Tanzania, like in many countries, the accreditation system is revisited every four years after which institutions carry out self-assessment and apply to the Higher Education Accreditation Council for re-accreditation. Besides, the Council members also visit institutions between the accreditation periods.

3 Funding

Insufficient funding for Higher Education and research is a general problem in higher education institutions worldwide. However, sub – Saharan developing countries, such as the United Republic of Tanzania, are hit worst. This pitied situation is aggravated by endemic challenges of unstable partnerships and the unpredictable hand-outs from the Western relationships (Banya, 2011). By this very fact, the funding of public universities and other higher learning institutions in Tanzania largely depends on Government grants which in most cases, regrettably, are inadequate. Thus, issues of funding and affordability of higher education costs are unprecedented on the education development agenda in the country. The problem seems to stem from the fact that education was free in Tanzania until 1990s (URT, 2005). However, with the increase of population and number of students completing advanced secondary education, it is now a burden for the government to provide free quality education, and hence the introduction of cost-sharing with the beneficiaries; the student and, or the household (URT, 1999).

Unfortunately, it is apparent that the costs to the poor households are increasingly becoming prohibitive! However with the emergency of private

universities, well to do parents are willing to pay for university education of their children. This is also true for the students in public universities under private sponsorship. This has caused complaints from the public on grounds that it is only the children from the rich families with access to university and higher education, thereby leaving the best brains from poor families.

As mitigation measures, in 2004 the Government enacted a law to establish the Higher Education Students Loan Board (HESLB) (URT Act No. 9, 2004) to manage a students' loan scheme, primarily to facilitate access to higher education by students whose parents cannot afford to pay for them. Under this scheme, all university students, including those from the private universities are eligible for loan. However, given the small size of the fund, loans are provided based on the applicants' academic performance (HESLB, 2006).

Further, in regard to the question of giving more opportunity for qualified candidates the government has advised higher learning institutions to create conducive environments that will attract the private sector to do business with them by providing loan with lower interest. The government is also proposing to borrow money from the World Bank and other development partners so as to enhance its budgetary allocation on education (URT, 2013).

4 Expansion and Accessibility

Opportunities and access to higher education in most developing countries are fairly recent and are occasioned by limitations. In Tanzania, the provision of higher education is located around 1961, where only the University of Dar es Salaam was established. Although there has been a significant increase in enrolments in the higher education institutions, the demand for higher education is far from being met, nonetheless. Higher education access and participation in Tanzania is influenced by socio-economic status, culture, religion and gender. The major ethnic groups that had the initial advantage of getting Christian missionary education continue to dominate higher education institutions in the country (Ishengoma, 2011).

To remedy this bog, since 2003, hitherto, the Government of Tanzania has put more emphasis on national primary and secondary schooling, via deliberate expansion programmes: Primary Education Development Program (PEDP, 2003-2008) and the Secondary education Development Program (SEDP, 2005-2010). The outcome of the PEDP and SEDP was/is to provide a pool of students that can join the Universities and other higher learning institutions in the country and thereby improving Tanzania's participation rate. The government has also embarked on provision of higher education opportunities through distance learning for people in remote areas, who missed earlier chances in their lifetime of pursuing higher education.

5 Gender Gap

Gender impartiality, commonly referred to as gender equity/equality, is recognized today as one of the major issues on international human rights. Its mandate is derived from the United Nations policy and program activities in the 1997 Economic and Social Council (ECOSOC). Gender equity was defined by ECOSOC as the process of assessing the implication for women and men of any planned action, including legislation, policies or programs in all areas at all levels". This was based on the Beijing Declaration and Platform for Action (Elifas, 2013). Most countries have responded positively toward these declarations thus education institutions have been taking steps to improve female participation, but the problem stems from deep-rooted cultural and psychological factors especially in Africa where education for girls is not given the first priority (Adeyemi, 2011).

In Tanzania, the government adopted the proceeding of the Beijing Declaration and Platform for Action and, henceforth, became obliged to implement it at national level through promulgation of gender policies and strategies, (URT 2008). Conversely, gender equity in higher and technical education is a serious constraint in Tanzania, more so, in science and technology related academic programs. This is a result of the fact that the pool from which female students qualifying for higher education is too small.

Because of this ungainly observable fact, Tanzanian government took introduced special pre-entry program for female students in 2003. Pre-entry programs mounted annually to help female candidates make up for any deficiencies they ought to have had. At the end of the 8-week program, they are given an examination. Since then the total undergraduate enrolment of female students has been growing. For example, it jumped from 19% in 2010 to 39% in 2013 (BEST, 2014). Notwithstanding all these, cases of open hostility and vulgarity between male and female students used to occur frequently at some campuses. The situation has improved significantly since the implementation of gender sensitization campaigns, (Hawes, 2014).

6 ICT

Globally, information and communication technologies (ICT) continue to impact on all aspects of contemporary education, requiring higher education institutions and stakeholders to be linked to each other through an advanced network that is connected to the rest of the world, for relevancy. The African Action Plan Report emphasizes information and communication technologies, besides developing research and higher education capacity (Ishengoma, 2011). This is ideally so because ICT has capability of unifying humanity and

transforming it into a global fraternity. Generally the advent of ICT has brought with it advantages that are too good to go unnoticed. In Tanzania, the application of ICT in the institutions of higher learning has a strategic place in enhancing their operational efficiency and advancement. This ranges from distance learning delivery modes, connectivity between institutions, ministries and stakeholders and thus making the availability of ICT service much more cost-effective. However, Msolwa (2012) observes that the level of ICT application in the higher education in the country is still inadequate facing a number of bottlenecks due to limitation of ICT infrastructure and specific competent workforce.

However, The Ministry of Higher Education, with the assistance of Development partners has established the Tanzania Education Network (TENET) which, to a greater extent, is expected to enhanced connectivity between institutions of higher learning, ministries and other stakeholders (MHEST, 2014).

7 Human Resources

The world is undergoing a transformation whereby successful economies are dependent on knowledge possession, particularly scientific knowledge which is critical to the wealth of a nation (Knight, 2010). To continue growing, the Tanzanian economy must have the human capital that can operate in the world where methods of production are changing fast. Rapid advances in science, communication and information technologies are giving countries opportunities to leap forward at the speeds they never dreamed of (Galabawa, 2011).

Currently, Tanzania is facing challenges of acute shortages of well qualified workforce including teachers at all levels, doctors, nurses, engineers, technicians etc. as it has been observed by Carr-Hill, (2013). However, the government has realized that the noble dream on sustainable development cannot be attained, if the country is not taking appropriate measures by identifying skills gap and addressing them, (URT, 2015).

To overcome this quandary, besides expanding the undergraduate enrolments, the Ministry responsible for higher education has started calculated graduate programs at Sokoine and Mzumbe Universities to produce a cadre of graduates with the necessary skills to man the key sectors of the economy including the mining industry, tourism and hotel management, industry, Universities and other higher learning institutions. More so, to produce a critical mass of human capital competent to meet the diverse needs of national development goals.

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Staff Turnover in Public Universities in Uganda

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Abstract. In this study, we examined three sets of antecedents of staff turnover in public universities in Uganda: demographic, controllable and uncontrollable. Data were collected from lecturers and administrators at the universities. Our findings suggest that the extent of controllable turnover is greater than uncontrollable turnover and that poor management practices are the major cause of employee turnover. Poor motivation was reported to be a major problem. In particular, economic incentives were found to be grossly inadequate to retain lecturers in the university system. Therefore, it is recommended that the universities upgrade their incentive systems, especially the economic motivators. The study also revealed that there is a pressing need to make the lecturers working environment conducive for the universities core functions of teaching, research and community engagement.

Keywords: Human resource management; Attrition; Quality assurance.

1 Introduction

This paper examines the state of staff turnover in three Public Universities in Uganda, namely, Kyambogo University, Makerere University (MAK) and Mbarara University of Science and Technology (MUST). The high rate at which university lecturers quit their jobs is one of the problems facing public universities in Uganda. Many scholars (e.g. Kasozi, 2005; Mamdani, 2007) attribute the genesis of the problem to Amin's regime of 1971 to 1979. Amin's regime plunged the country into a dictatorship, economic ruin and depredation. The Asians who controlled the economy were expelled in 1972 and the British, Americans and other Western expatriates who were the core cadre lecturers and researchers at Makerere University, in Research Institutes and other tertiary institutions were forced to leave the country. During the 1970s, public servants especially university lecturers, primary and secondary school teachers in

Uganda were subjected to meagre salaries and were pauperized. There was insecurity and direct persecution of the educated by the ruling military group which was largely illiterate and not interested in education (Kasozi, 2003). University lecturers left the country in large numbers to escape insecurity and persecution and to search for greener pastures.

The long period of military rule and general mismanagement of the economy from 1971 to 1979 and the post-Amin civil wars and instability of the early 1980's represent the sad phase in the country's educational development during which the higher educational institutions lost integrity, credibility and professionalism (Musisi & Muwanga, 2003) Staff and students were isolated from international scholarship and purchase of up-to-date books and subscription for scholarly journals was drastically reduced because of lack of foreign exchange and university lecturers lost morale and self-esteem. University academics that could not endure and persevere were driven by the hustle to survive by becoming taxi drivers, primary and secondary school teachers and vendors or resorted to venality, corruption, smuggling, opportunism or other forms of undignified behaviour and hence deepening the level of intellectual erosion and mediocrity (Sessanga & Garret, 2005).

The study was based on the Theory of Work Adjustment (Dawis & Lofquist, 1991). This theory suggests that work environment and employees interact to meet each other's requirements and this interaction is called environment-personality correspondence. The interaction (environment-personality correspondence) should be maintained if a long lasting employment relationship between the employer and the employee is to be achieved. Employees are more satisfied by jobs that meet their needs and they can retain such jobs longer when they are satisfied and are performing well (Rosser, 2004, Musisi & Ngobi, 2005). The more closely a person's abilities (skills, knowledge, experience, attitude, behaviours, correspond with the requirements of the role or the organisation, the more likely it is that they will perform the job well and be perceived as satisfactory by the employer. Similarly, the more closely the rewards of the role or organisation correspond to the values that a person seeks to satisfy through their work, the more likely it is that the person will perceive the job as satisfying. Basing on this argument, this study proposed that labour turnover in public universities in Uganda is influenced by demographic, controllable and uncontrollable factors.

2 Related Literature

Labour turnover is the flow of manpower into and out of an organization (Price, 2001). The inflow of manpower is referred to as accession and the outflow as separation (leaving). Separation may be in the form of quits, discharges, lay-

offs, retirement, leaves of absence and even death. Accession on the other hand has to do with replacements and new hires. Tetey (2006b) argues that Labour turnover is one of the unorganized form of industrial conflict. However, Mutume (2003) and Mihyo (2007) concur that labour turnover is a retreat by employees usually from unsatisfactory situations. However, Naris & Ukpere (2010) contend that other factors (i.e. that is age of the worker, chances of obtaining another job) influence turnover.

In Uganda, the significance of human resources in university activities is emphasized by *The Report of Visitation Committee to Public Universities* (2007). The report brings out the fact that the academic staff who are highly qualified professionals of high intellectual calibre and integrity who have the capacity to master the best tools and practices in the world of teaching research and community service are not satisfied with their remuneration and working conditions. This is corroborated by Businge (2004) and Amutuhair (2010) concur that staff turnover is a very big problem in African universities and agree that without adequate lecturers; no university can ably fulfil its cardinal mandate of teaching, carrying out research and extending community outreach.

Samuel and Chipunza (2009) contend that there is a positive relationship between human resources and survival of universities. This is in tandem with the research done by the World Bank (2000) which it was found out that the cornerstone of excellence of a university is the ability to attract and keep outstanding members of the faculty. Therefore, failure to handsomely remunerate lecturers and provide good working conditions results into loss of staff, often the most talented, to non-university employment and the so called green pastures abroad. Kasozi (2003) and Sutherland (2004) and Musisi and Ngobi (2005) agree that a first class university consists of first class academic staff that diligently perform their duties of teaching and research and understand the vision and mission for which their institution exists and agree to implement its mission. A good university leader should be judged by the ability to recruit and retain brilliant academic staff for the university.

The staff turnover problem in Ugandan public universities is highlighted by Musisi and Muwanga (2003) and Businge (2008) who correctly observe that unless the conditions of university lecturers are improved, and their status and esteem raised higher, academic staff in public universities in Uganda shall continue to be unstable and higher educational progress shall continue to be retarded. Sawyerr (2002), Mwadiani & Akpotu (2002) and Zeleza (2004) complement the assertion with the Nigerian experience that the university faculty in Africa are underpaid, demoralized and overworked. It was found out that the Nigerian experience directly matches with the Ugandan situation according to findings of the National Council for Higher Education-NCHE (2014), Ugandan public universities was found to be understaffed and lacked well qualified staff in all departments and that Kyambogo University then had

no full academic professor but four associate professors as the highest trained academic staff. The report found out that by the year 2007, only 25 lecturers in that university had doctorates; ironically a minimum requirement for a lecturer is the level of a doctorate.

The shortage of academic staff is not helped by the young graduates shunning university teaching jobs. Tettey (2009) carried out a study in the universities of Botswana, Ghana, Ibadan, KwaZulu-Natal and Makerere and found out that young graduates did not like joining universities as lecturers because of the unattractiveness of the academic jobs, unappealing salaries and the poor working conditions. Therefore, not choosing the academic career means that the existing stock of academics is not replenished at a rate capable of sustaining their operations at optimal levels. This damaging consequence of the current university crisis according to Marks (2003), Egbule (2003) and Daly & Dee (2006) is the enormous loss of human capacity through immigration of young lecturers to Europe and North America Mutume (2003) and Polgreen (2007) opine that Africa suffers from a serious brain drain that has deprived it of thousands of highly trained people The *Report of Visitation Committee to Public Universities* (2007) highlights the exodus of academics for better pay and good working conditions abroad and blames the phenomenon on the poor salaries paid to academic staff and poor working conditions in the country which is an irony because public universities belong to government and lecturers are government workers. Equally Budree (2005), Ahemba (2006) and Mamdani (2007) postulate that the erosion of the real value of public sector salaries makes it impossible for many university staff members to survive without any other sources of income. Universities all over Africa have witnessed a series of industrial conflicts over the failure of the employers to review their remuneration and improve the conditions of service. There is direct encroachment upon the power and authority of the university council as well as internal day-to-day administration of universities through Government directives

The quality of any university depends on the quantity and quality of its faculty. Public universities in Uganda face a perennial flight of lecturers to other jobs and greener pastures abroad. Unfortunately, according to the *Report of the Visitation Committee to Public Universities* (2007), Businge (2008), Amutuhaire (2010)) and the report by the Ugandan National Council for Higher Education (NCHE (2014), there is a serious shortage of teaching staff in public universities in Uganda due to serious turnover by junior and senior staff moving to other organisations and for greener pastures abroad. Notwithstanding the fact that various scholars have pointed out that staff turnover is a very serious problem in public universities, these scholars have not invested enough to investigate the antecedents and unless the problem is sorted, Uganda

universities will not produce quality higher education and graduates fit for the 21st century labour market.

The general objective of this study, therefore, was to examine the effects of motivational factors on labour turnover among lecturers in the public universities.

3 Methodology

The research design for this study was the Ex-post facto research which is a systematic empirical inquiry where there is no direct control of independent variables because their manifestations had already occurred and are inherently not manipulated by the researcher. The research was based on a scientific and analytical examination of dependent and independent variables studied in retrospect for seeking possible and plausible relations and the likely effects that the changes in independent variables produce on a single or a set of dependent variables.

Both primary and secondary data were employed for the study. The primary data were obtained through structured and pre-tested questionnaire administered on respondents between January 2014 and 2015. Secondary information was obtained from books, Journals, annual reports, bulletins on university management, newspaper extracts, government publications and previous related research reports.

The population consisted the seven public universities then that is; Makerere University (MAK), Mbarara University of Science and Technology (MUST), Kyambogo University (KYU), Gulu University (GU), Muni University (MUN), Busitema University (BUS) and Kabale University (KAB).

The study sample consisted of lecturers in the two oldest universities that were selected that is; Makerere University (MAK) and Mbarara University of science and Technology (MUST). For purpose of the study, Makerere University and Mbarara University were selected as a representation of the public universities in the country because they are the oldest with all the necessary structures and human resource establishments Specifically Makerere University was established in 1922 and Mbarara University established in 1989.

4 Findings, Discussion and Conclusions

The study was guided by two objectives which were to determine the level of turnover at Universities and the various motivational strategies adopted to retain the academic staff in the institutions and the results were analysed both qualitatively and quantitatively. The study began by inquiring whether the

respondents believed that there was labour turnover at the Universities. The results are indicated in Table 1.

Table 1: Distribution of Participants by Level of Agreement that they Leave University Work for *Greener Pastures*

Scale	Frequency	Percentage
strongly agree	59	41.0
Agree	56	38.9
Neutral	8	5.6
Disagree	9	6.2
Strongly disagree	12	8.3
Total	144	100.0
Total	153	

As can be observed from Table 1, majority of the respondents agreed that there was staff turnover. This is indicated by 39% who strongly agreed, 37% agreed while 5% were neutrals compared to 6% who disagreed and only 8% who strongly disagreed. Even during interviews with Lecturers, it was highlighted that labour turnover was one of the main challenges facing Public universities in Uganda.

Labour turnover, that is; attrition of staff here is a reality. The Government has failed to realise the value of Lecturers at different levels and whenever Lecturers get a good jobs elsewhere, they leave mainly because of poor remuneration and bad working conditions such as inadequate housing, poor infrastructure and lack of overtime allowances. Some Lecturers leave to other organizations which pay better and others to foreign countries for greener pastures and never return.

One major factor that comes out vividly from an interview with a lecturer at Makerere University is the issue of poor remuneration. Lecturers are highly educated but receive little money which does not fulfil their financial and material desires in a society which cherishes financial and material success. This finding is in tandem with El Khawas (2004) who analysed brain drain in Africa, Guma (2011) who wrote on organisational factors which impacts employee retention and Ng'ethe, Iravo and Namusonge (2012) who made a related study in Kenya and decried the case of lecturers in Kenyan universities who are paid peanuts amidst inflation, big work load and high cost of living. The views are a reflection of the fact that lecturers perceived other organizations as paying better than the Universities and this was the reason they were leaving.

Table 2: Position, Gender and Turnover

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	17.950	1.585		11.326	.000
The likeliness of quitting by gender	-.326	.763	-.038	-.428	.669
Likeliness of quitting by position	-.872	.376	-.206	-2.319	.022

Dependent Variable: level

As can be observed from Table 2, there was a strong relationship between level of turnover and the position of the academic staff member. This is indicated by a probability of 0.022 which is lower than 0.05. However there was no significant relationship between levels of turnover and gender of the lecturers. This is shown by a probability of 0.669 which is greater than 0.05. The results indicated that labour turnover at universities is not associated with being a male or female

The study further examined the estimates of staff turnover by the Lecturers themselves and the results were as indicated in Table 3.

Table 3: Attrition over the Last One Year

Number of staff who left	Frequency	Percentage
1-10	45	31
11-15	56	38
16-20	21	14
20 & above	25	17
Total	147	100

As can be observed in Table 3, the respondents perceived that the staff who left in the previous year were ranging from 1 to over 20. Those who thought the range was between 11-15 were the majority and followed by those who thought it was between 1-10. The study found out however that though there are many lecturers who have left; it is not easy to tell whether they have left or not. For example, someone has asked for leave without pay and goes to another country. One cannot tell whether he or she will come back or if he or she comes back to the country whether he or she will still be willing to work at the University.

The researchers tried to understand where the staff go to when they leave the University. The results in Table 4 indicate that university lecturers join other organisations such as parastatals, private sector organisations, consultancies and/or go abroad for greener pastures. Even during the interviews a related view was revealed:

Table 4: Destinations of Employees when they Leave University Service

	Frequency	Percentage
Parastatals	34	23
Private sector organisations	47	32
Consultancy	30	20
Other countries	37	25
Total	148	100

The government authorities, parastatals and projects pay super salaries. Government claims that such organisations drive the economy and their employees must be paid higher salaries. Most lecturers strive to join government organisations that are paying very well. These include, Uganda Revenue Authority (URA), Uganda National Forestry Authority (UFA), Uganda National Roads Authority (UNRA), the Bureau of Statistics (BoS), the Kampala Capital City Authority (KCCA), the National Social Security Fund (NSSF), Bank of Uganda (BOU) and so on. Others however go to other countries where payment is good especially Rwanda, Botswana, Britain and the USA.

The researchers also examined the reasons for leaving. The findings were that the majority of the staff had left due to the working environment, training opportunities, payment, conflicts and promotion policy.

The second objective of the study aimed at unveiling the motivational strategies practiced in the Universities and their relationship with faculty turnover. The relationship was tested with the Pearson Product moment correlation as follows;

Table 5: The relationship between staff turnover and motivational factors

		Level of labour turnover	Adequacy	Motivations
Level of Labour Turnover	Pearson Correlation	1	.288**	.313**
	Sig. (2-tailed)		.000	.000
	N	144	144	144
Adequacy	Pearson Correlation	.288**	1	.738**
	Sig. (2-tailed)	.000		.000
	N	144	150	147
Motivations	Pearson Correlation	.313**	.738**	1
	Sig. (2-tailed)	.000	.000	
	N	144	147	147

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

The results indicated that there was a relationship between labour turnover and motivational factors. This is indicated by a Pearson Product Moment correlation of 0.7313 at a calculated probability of 0.000 on the relationship

between staff turnover and the employees' perceived adequacy of motivation strategies, the results indicated a Pearson coefficient of 0.288 at a calculated probability of 0.000. Since the probability is lower than 0.05, it then means that the relationship exists. The descriptive statistics were also analysed to determine the nature of the relationship as indicated in the preceding presentations. The researchers' further investigated the motivational strategies especially staff training opportunities and the results are indicated in

Table 6: Staffing, Training Opportunities and Turnover

	Frequency	Percentage
Strongly Agree	44	30
Agree	56	38
Neutral	24	16
Disagree	13	9
Strongly Disagree	11	7
Total	148	100

As can be observed in Table 6, the employees agreed that there were training opportunities at the universities, that is 29% strongly agreed, 37 % agreed while 16% remained neutral as compared to 8% who disagreed while 7% strongly disagreed. Even during the face to face interaction, there was expression of satisfaction to the training opportunities but the complaint was that at times there was segregation. It was expressed that most of the better training opportunities like going abroad were given to relatives and friends of the University Managers.

The researchers also investigated the aspect of promotion policy management and the majority still revealed that there were promotion opportunities. This view was revealed by 14 (9%) who strongly agreed, 49 (32%) agreed while 36 (24%) remained neutral as compared to 32 (21%) who disagreed while 17 (11%) strongly disagreed. There were complaints however in regards to promotions management.

The challenge with promotions is that they associated with research and publications which is very unfair because the university does not provide funds for faculty research and even when some money comes in, there is technical segregation and those who are favoured get the money. This means those who are favoured will be promoted and others will remain in the same position until they get a break through. It is unfair to use research and publication as standard for promotion and ignoring other activities such as community outreach, supervision of students' research projects and the number of years somebody has taught in the university.

The researchers examined whether the staff members had other earning opportunities than only teaching. The results indicated that 6 (4%) strongly agreed, 14 (9%) agreed while 46 (30%) remained neutral as compared to 56 (37%) who disagreed while 28 (18%) strongly disagreed.

On whether the staff members had opportunities to visit other countries and attend conferences, the findings were 4 (3%) who strongly agreed, 31 (20%) agreed while 38 (25%) were neutral. This distribution left 56 (37%) who disagreed 20 (13%) who strongly disagreed. Even during interviews with the lecturers, this aspect was reflected on.

The university does not create an opportunity for staff members to go out and attend conferences. It is a staff member who creates the opportunity and pays for himself and herself before going to present a paper or just to participate in a workshop or attend an international academic conference. Those who are lucky are sponsored by international aid agencies of philanthropists. It was also important to study whether employees have an opportunity to part-time in other organizations. The results are indicated in Table 7.

Table 7: Part-timing in other Organisations

	Frequency	Percentage
Strongly agree	22	14.7
Agree	35	23.3
Neutral	41	27.3
Disagree	37	24.7
Strongly Disagree	15	10.0
Total	150	100.0

The majority of the respondents accepted that part timing was allowed officially for some faculty members. During interview, a lecturer said that what was important for the majority was a staff member to teach as required and use the other time that was available for him or her in other activities.

The teaching staff were asked to rate the extent to which they would agree that they are given research funds. The results are indicated in Table 8.

Table 8: Distribution of Participants by Level of Agreement that they receive Research Funding

	Frequency	Percentage
Strongly Agree	27	18.0
Agree	28	18.7
Neutral	40	26.7
Disagree	35	23.3
Strongly Disagree	20	13.3
Total	150	100.0

Even during the face to face interaction, staff members expressed their feelings that universities ignore research funding in their annual budgets. It is also that true research funds were available from aid organisations but the competition was also stiff. Some staff members individually were applying to different organizations and if they succeeded well and good. It was hence the survival of the fittest.

Uganda's developmental challenges demand that universities should stand up as one leading place to prepare the nation for the expected leap forward. However evidence from the study suggests that the institutions remain ill prepared due partly to the low morale of the lecturer, which in turn has increased the rate of labour turnover from the system. It is fair to say that lecturers will put in their best when the work environment is conducive; when there are good welfare packages like good houses, adequate health and medical insurance, training and development opportunities and other relevant fringe benefits. In the absence of these, it can only be expected that frustration and eventually quits will result.

Given their role in society, there is a strong case to pay special attention to university academics while not constituting them into a special class. However, it is important to further explore opportunities to provide more incentives to enable lecturers maximize their role in the development process. In doing this, we have also shown that economic incentives on their own do not provide sufficient motivation for university teachers. A holistic approach, which adequate takes into account crucial non-economic factors as well must be employed. Based on the findings of the study, the following recommendations can be surmised.

A number of recommendations aimed at improving the situation in public universities were made and these include the following:

Public universities should motivate lecturers towards better performance. Salaries and fringe benefits such as housing, free medical services and subsidised transport should be enhanced and made relevant to prevailing inflation economic circumstances in Uganda by reviewing them periodically. A fair and equitable pay-system will help prevent high turnover. Inadequate rewards leads to de-motivation and voluntary turnover. Universities should device means of giving recognition to deserving lecturers.

Academic staff development should be accorded priority since possible growth and advancement on the job is a vital motivational factor. Well-designed training programs should be emphasized not just to meet the professional needs of university Lecturers but also to enhance the quality of teaching and ensure the retention of competent and dedicated staff. The evidence is clear that well trained and competent Lecturers provided with relevant conditions tend to be less inclining to leave. Lecturers should be

sponsored to attend short courses and professional courses including relevant post graduate diploma courses that can enhance skills and motivation.

Public universities in Uganda should only admit students enough for available facilities to avoid overcrowding and to address workload challenges. Prominence should be given to the provision of research and conference grants. Attendants and participation in seminars and conferences should be encouraged to enrich the knowledge and skills of Lecturers.

The job should be enriched and made more challenging by allowing lecturers to have a good chance to take control over the way they do their job recognize important contributions and promotion prospects should be improved in order to enhance lecturers' sense of achievement and advancement will increase. There is need to reconsider the retirement age of lecturers and professors. In the Ugandan situation, it is wrong to retire a lecturer at 60 years when public universities are understaffed. In the present circumstances it should be their ability to deliver and not their age.

Funding by government is very critical but is never enough. Public universities in Uganda suffer from political interference and universities cannot fix their own realistic fees according to market forces. Universities must also generate funds by utilising their estates. The money generated can boost salaries and improve working conditions of lecturers to mitigate faculty turnover.

Like in developed economies, Public Universities in Uganda should link with the local Industries can offer endowments of professional chairs in certain disciplines; can offer donations of cash, laboratory equipment, furniture, computers, chemicals and reagents among others. Meanwhile universities can offer industry feasibility studies, surveys, proposals and consultancies. All this would make the work of faculty easier.

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Erratum

The authorship of the following article published in issue 9.1 of *Makerere Journal of Higher Education* was misstated:

Omosidi, A.S. (2017). Allocation Pattern in the Financing of Colleges of Legal and Islamic Studies in Nigeria. *Makerere Journal of Higher Education*. 9 (1), 37 – 51. DOI: <http://dx.doi.org/10.4314/majohe.v9i1.3>.

Readers are requested to note that the article is co-authored with A.A. Atolagbe and A. A. Lawal, so it should be cited as follows:

Omosidi, A.S., A.A. Atolagbe, A.A. Lawal (2017). Allocation Pattern in the Financing of Colleges of Legal and Islamic Studies in Nigeria. *Makerere Journal of Higher Education*. 9 (1), 37–51. DOI: <http://dx.doi.org/10.4314/majohe.v9i1.3>.

Editor.

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