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Assessment of the Responsiveness of University Education to the Requirements of Related Employment in a Country :

A Public Sector Study on the United Republic of Tanzania

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Graduate School of Public Administration
Seoul National University
Global Public Administration Major

Amwesiga Anatory Kamihanda

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Academic Advisor Choi, Taehyon

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Graduate School of Public Administration
Seoul National University
Global Public Administration Major

Amwesiga Anatory Kamihanda

Confirming the master's thesis written by
Amwesiga Anatory Kamihanda

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Chair	**Lee, SooYoung**	**(Seal)**
Vice Chair	**Ko, KilKon**	**(Seal)**
Examiner	**Choi, Taehyon**	**(Seal)**

Abstract

Assessment of the Responsiveness of University Education to the Requirements of Related Employment in a Country:

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Amwesiga Anatory Kamihanda
Global Public Administration Major
The Graduate School of Public Administration
Seoul National University

The research on 'assessment of the responsiveness of university education to the requirements of related employment in a country: a public sector study on the United Republic of Tanzania' was prompted by an increasing concern around the country that university graduates in Tanzania were being under trained for the employment they were intended to fill. It was a case study with the United Republic of Tanzania being a study case. A sample of 158 respondents was used, structured in clusters of graduate employees, employers and university lecturers. Questionnaires were sent out and self-administered; some data was obtained through interviews conducted electronically. Data has been analyzed descriptive or qualitative.

Results are that university education in Tanzania is as responsive as it is in many countries; some universities or programs or sectors of employment or students are better than others; curricula from a very wide range of degree programs that were sampled very much responded to items in job descriptions of employee respondents. Respondents indicated areas of study they thought they needed in order to discharge their job descriptions fully. The realistic rating of responsiveness of university education to job systems is one of a partial positive one; which is true of many nations.

The efforts made by graduate employees, employers and university lecturers for achieving an effective relationship between university classrooms and work in the field are very much below form. Graduates have indicated a need for instruction on skills that are used on a day to today basis in typical government departments, mostly in the areas of general management, economics, finance, psychology and participatory methods of training when at universities. Interventions should segregate; focus on areas that have need. Strategies already being applied should continue and be strengthened, commitment by lecturers and students should be strict; students should be instructed on skills related to typical annual plans; lecturers must intensify real life simulations in class.

Key words: Responsiveness, University Education, Employment, Potential Strategies, Curricula

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List of Abbreviations

RK	Republic of Korea
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
R&D	Research and Development
IT	Information Technology
ICT	Information and Communications Technology
GDP	Gross Domestic Product
HRM	Human Resource Management

CHAPTER ONE: BACKGROUND TO THE RESEARCH STUDY

This chapter shall present research components that initiated (introduced) the research study and were therefore the reasons for conducting the research and hence reveal the setting in which the research was conducted. The chapter shall therefore describe the profile of the research area; namely, the United Republic of Tanzania; the background to the research problem, the statement of the research problem, research questions, research objectives, the significance of the research problem, the scope of the research study and research study limitations.

1.1 The Profile of the Area of the Study: the United Republic of Tanzania

The United Republic of Tanzania is a country in Eastern Africa and part of the African Great Lakes Region; it is bordered by Uganda and Kenya to the north; Burundi, Rwanda, and the Democratic Republic of the Congo to the west; Malawi, Zambia, and Mozambique to the south; and by the Indian Ocean to the east. Mount Kilimanjaro, Africa's highest mountain, is in north-eastern Tanzania. Estimated population is 50 million as of 2016 and about 80% live in rural areas while 20% in urban. The official capital city is Dodoma, where the President's office, the National Assembly, and some government ministries are located. Dar es Salaam was for a long time the government capital city and is still the commercial capital and is located along the Indian Ocean. The total area of Tanzania is 945,454 square kilometers.

Tanzania was colonized during the late 19th century when Germany formed German East Africa; this gave way to British rule after World War I. The British governed the mainland as Tanganyika, while the Zanzibar Archipelago was governed separately. After their respective independence in 1961 and 1963, the two republics united in April 1964 and formed the United Republic of Tanzania.

The main roles for industrialization in Tanzania have been shifting, between that of the state and that of the private sector: initially it was largely of the private sector to drive industrial development up to the mid-1960s; this can be seen from the First Five-year Development Plan (1964–9), then it shifted to largely state driven industrial development from 1967 to the mid-1980s which can be seen in the Second and Third Five-year Plans (1969–74 and 1976–81) respectively. After 1986 it shifted back to being driven by the private sector which is well shown in the Economic Recovery Programme (ERP) of 1986–9 and the Economic and Social Action Programme of 1989–92 where liberalization and privatization were used and initiatives were made to go back to industrialization as a means of development from the mid-1990s which is well shown in the Sustainable Industrial Development Programme of 1996–2020 together with the Integrated Industrial Development of 2011 as described by Jamal Msami and Samuel Wangwe (2011).

Today, accordingly, Tanzania is booming with private universities and private companies which, nevertheless, are **a product** of 'public policy' which policy is formulated by government and therefore mandated for adoption by the entire 'public' of a country, whether investing private capital or public resources.

This section of the research proposal therefore; even though intended for just a profile of the study area, namely Tanzania, it nevertheless well applied to the research problem of this study. That is, matters related to the geographical location of Tanzania as that of within East Africa, its colonial past, its venturing into a socialist economy after independence and its subsequent migration to a capitalist economy while having no capital in executive personnel, money, machinery, materials, technology and interactive markets, were all eventually expected to have impact on the competence compatibility between the supply side of university graduates and the demand side of their intended employers; that is, the national effort in the production of goods and services.

1.2 Background to the Study Problem

The 'background to the research problem' describes the **theory** in which the research problem is based. Today's world experience greater business competition due to the advancement in industries' sciences and technologies. In order for countries to be successful in social, economic, political and cultural perspectives their human capital must be equipped with necessary knowledge, skills and attitudes for them to work in different sectors of an economy.

Humankind has invented and developed different kinds of operations for the aim of producing and delivering different economic and social goods and services since ancient times especially during the period of the industrial revolution of the 19th century. Facing the problems of transportation, diseases, demand for manufactured goods, communication and security, mankind has discovered different kinds of productive activities so as to solve those problems. Since then many developed and developing countries introduced

different policies for the aim of strengthening economies (economy here meaning producing goods and services in order to meet unlimited public demands while using limited resources; an economist seeks to maximize what is produced while minimizing resources consumed in the course of operations; this balancing between output and input is referred to by economists as 'optimization') in their countries; **higher education** is one of such policies. Higher education helps employees to analyse different economic situations so as to institute systems for efficient and effective economic policies and practices, some of which could be applying over several years to come.

As Hon. Robert Jackson (1990) has said, sustainable economic activities demand for manpower with specialist skills to lead them directly to the establishment of objectives. He further added that higher education can do that by; supplying of highly qualified manpower, updating of those already in the workforce, research and development and technology transfer.

Higher education is more institutionalized today in many countries including Tanzania than it was earlier on. Since independence in 1961 from colonial rule Tanzania took several measures so that education could contribute to the development effort. Tanzania's first president, Mwalimu Julius Kambarage Nyerere, in 1967, for example, introduced a philosophy for education called "Education for Self--Reliance." This philosophy intended to develop students' learning enquiry, critical thinking skills, and self--confidence, as was observed by Kassam, (1994); Kitta (2004); O. Saki (2005, 2007). At all levels, from primary level to university level, Mwalimu linked education with the production of goods and services in the country, hoping that 'inquiry,' 'critical thinking' and 'self-confidence' would discover the need and direction for import substitution operations that characterized economic activities in most newly independent countries like Tanzania.

Later, expectedly, in 1970, the University of Dar es Salaam was established as the first Tanzanian university and in 1984 the Sokoine University of Agriculture, Forestry, and Veterinary Science was established as the second public university of Tanzania. Also, different institutes and colleges were established in the same spirit; by 1972 higher learning institutions geared at studies in commerce, public administration, accountancy, finance, land and property management were established; that is, the Institute of Finance Management, the Ardhi Institute and the Institute of Development Management.

Today, Tanzania can boast of as many as 17 public universities including institutions of higher learning; while the private sector is booming with around 23 universities; the business of opening private universities in Tanzania caught such a high speed that the government was recently forced to intervene amidst concerns over the quality of programs offered; and these concerns over university graduates' quality in Tanzania clearly lent immense justification to the research that has just been completed, especially, when considering the needs of a diversified economy that a typical country usually needs.

The profile of the present economic activities' structure of Tanzania reflects multiple influencing factors; its colonial past which explains dependence in technology, both for services and goods, on former masters and other more developed countries including western Europe, north America and the far East; its agrarian economy explains the fact that agro-based industries (foods, beverages, textiles, furniture) are more likely than others in the Tanzanian case; the fact that natural resources are fairly available in Tanzania has influenced an abundance of mining operations, gas extraction and processing for energy generation, timber-based factories, shipping operations in sea ports

on a long ocean coast line and on large fresh water lakes whose surface area is the largest in Africa. In all cases of orientation of economic activities, the central decisions' point is the government of Tanzania through its public policy for the country. Human resources' competences at the central government level for driving the entire economy are critical.

Also, the country that, before Southern Sudan was admitted into the East African region, was larger than all other East African countries put together, has had a substantial motivation to invest in the transport sector by way of railway workshops, automobile workshops and a hectic business in road vehicle importing and selling; at this point of the transport sector status in Tanzania an observation fitted-in very naturally with the subject of this research, that is, necessary university education must move hand in hand with any kind of economic activity being embraced. Entrenchment in the investments related to the transport sector, including an expanding aviation sub-sector therefore, has necessitated the promotion of a formerly low profile national institute for transport (NIT) into a fully fledged national university for transport (NUT).

Parallel to that has been the need to sponsor quite a large group of university students from Tanzania by the Chinese government to support the gas and mining sub-sectors in Tanzania. As much as the South Korean government is sponsoring some Tanzanian students for various sectors of the latter's productive activities; both manufacturing and service sectors; including the government sector.

It would be a serious omission indeed to describe the Tanzanian economic structure of activities of today without including the mobile phone business; Tanzania has been ranked number two and at times even number one in

Africa in the mobile phone penetration ratio to the total population; the driver here is the sheer pride of Tanzanians since they were taught by Mwalimu Nyerere, their first president, that 'all humans are equal;' they don't want to be seen as left behind. A Tanzanian is prepared to go without an important day's meal provided their handset is secured. True to the research problem of the just completed study, is that with the mainstreaming of mobile phones as a necessary possession in the hand of a Tanzanian, has also been the mainstreaming of IT, IS and ICT programs nearly in all universities, institutes and colleges of both further and higher education.

1.3 Statement of the Problem

Economic activities' management, looking at the foregoing, should mean university education management; as much as 'planning' and 'control' have been called 'Siamese twins of management' therefore, so is the relationship between 'economic activities' management' and 'university education.'

The researcher assessed that economic activities prevailing in Tanzania had **not** been adequately successful. It was only right, in view of the discussion related to the 'background to the research problem', that university education be investigated for its negative contribution, if any, to the economy underperformance observed by domestic and even external assessors. When socialism as a mode of managing Tanzania's economy collapsed, and public financing of parastatals came to an end, the entire fabric of the economy in Tanzania also collapsed; it was and still continues to be very painful; imagine the loss of jobs to so many thousands and their dependants; families were wrecked and even fatalities were suffered by Tanzanians. Clearly, university education did not assist the country in this case; the researcher has collected

ideas as to the extent university education could have assisted; which extent is contained in this dissertation under chapters four, five and six.

The output of the economy has been fluctuating and in fewer periods the targeted levels were attained. In recent times, service and construction sectors have been showing positive growth and for an increasing share of total employment; this is a motivator to earnestly look for ways of supporting the economy including by responsive university education. In any case, the manufacturing sector in Tanzania remains relatively small, with most activities concentrating on the creation of simple consumer products; and yet, the sector continues to be of considerable importance to the Tanzanian economy, as it would do for any other country, considering what it would contribute in employment, taxes, stimulation of agricultural performance, elevation of standards of living among citizens, advancement of technological competence among labour and executives alike and a potential for making exports that would bolster a country's balance of payments.

The economic policy making organs of the government require very able officers capable of recognizing relevant factors both external and internal to the country, relating those factors, and subsequently formulating economic policies that stand the highest chances of success. The relevance of higher education effectiveness through effective government policy formulation **by** higher learning graduates for the success of a country's economy becomes essential.

Indeed, apart from the recent measures by the government through the ministry of education to suspend first year admissions into as many as 19 universities in the country on account of inadequate capacities to run credible university programs, debate has been on in the country since many years on

the quality reliability of university graduates in the country. Difficulties have been said to exist not just in formal curricular design, but also in the effectiveness, in terms of delivery, of promised curricula. This study had no resources to analyze all areas that would affect university education responsiveness in the country; nevertheless, a useful start has been achieved.

Very importantly, is the fact that the Tanzania government has set for itself long-term development agenda in its Tanzania Development Vision (TDV) 2025 and the Sustainable Industrial Development Policy for Tanzania (SIDP) 2020. Even as the running president of Tanzania, His Excellence Dr John Pombe Joseph Magufuli has selected as his working trade mark slogan since his first day in the State House: 'Tanzania of Industries.' The 'enabler' in the president's industries' focused 'presidential slogan' is undoubtedly supportive public policy at the central government level. Executives of the domestic 'Tanzania Private Sector Foundation' (TPSF), time and time again are seen and heard, nearly 'pleading' with the government to pass 'trade facilitation,' 'enabling environment,' 'friendly environment,' 'affirmative action,' or any other prodding phrase measures, so that private sector 'trade' and 'balance sheet' performances can grow. Human resources' capabilities at the **central** government level therefore, must be empowered first so as to achieve nationwide economic success.

It has been a well- timed project to investigate through this research into ways that would align university education in Tanzania with its present and future economic activities' investments. This study confined itself to the public sector because of it being a prerequisite for the success of the private sector. Researchers for some reasons had not been addressing this research topic; hence creating a research gap that has been filled by this research study.

1.4 Research Questions

For the purpose of structuring the foregoing research problem so that it could be researchable the following research questions have been answered:

a) What was the extent of comparison between university programs' curricula and related job descriptions for graduates employed in the public sector of Tanzania?

b) What factors explained the observed level of responsiveness of university education to related jobs from the public sector in Tanzania?

c) What strategies which if adopted could improve the match between university education and corresponding requirements of the public sector in Tanzania?

1.5 Research Objectives

By the end of the study the researcher was able to:

a) Identify the extent of comparison between university programs' curricula for degree graduates in Tanzania and related job descriptions for employed graduates in the public sector of Tanzania.

b) Identify factors that explained the observed level of comparison between university education and related jobs from the public sector in Tanzania.

c) Describe strategies which if adopted could improve the match between university education and corresponding job requirements of the public sector in Tanzania.

1.6 Significance of the Study

Economic activities and education always go together because they depend on each other. We need education in order to run a nation's economy; through economic activities we get money to finance various social services including

education. This study, by putting alongside of each other of university education content and related job requirements, has exposed the actual relationship between university education and job level requirements. This will give stakeholders true evidence on what needs to be done in order for university graduates in Tanzania to be as prepared as conditions allow in Tanzania for their expected employment. From the stage where this research has ended, subsequent researchers will be able to use findings of this research to conduct similar studies, for example, in the private sector, or for a specific university program or programs or for a specific professional area or any other unit of analysis, according to need.

1.7 Scope of the Study

This research remained within the boundaries of graduates who also were working in the public sector, heads of departments and director also working in the public sector, and university lecturers who could be found, from both public and private universities; all working in Tanzania. All participants to the research busied themselves with the assessment of university graduates' competences for working in jobs of their university specializations. Conclusions from the research are very relevant to the private sector also, especially considering that university lecturers were 'thinking of their graduates,' who have no sector boundaries.

1.8 Research Study Limitations

Conclusions from the research study shall apply **directly** to the public sector; as already said, though, some extension to the private sector is very legitimate; consider the assessments in their responses by, for example, doctors, engineers, land and estate officers or lawyers; these disciplines have very negligible, if at all, sector differences.

CHAPTER TWO: LITERATURE REVIEW

This chapter presents the review of literature related to the subject of responsiveness of university education to the requirements of economic activities' management in a country. The chapter will show both theoretical and empirical review related to the research problem.

2.1 Concept of Sectors of the Economy

D. Simandan (2009) has described a set of economic and social processes related to the discovery of 'more efficient ways' for the creation of value. These more efficient ways are lumped together under the label of 'secondary sector' (the 'primary sector' of economic activities, whose ways have been regarded by D. Simandan as 'less efficient' and therefore needing upgrading in efficiency through the secondary sector, refers to agriculture, hunting, fishing, and resource extraction, while the 'tertiary sector' refers to services). This study mostly investigated the tertiary sector in so far as it concentrated on the application of higher learning education to departments of government where output is generally in services to the public; as already stated under item 1.4 and in its last paragraph, due to the **primacy** of public policy to all other policies in the management of a nation's economy.

2.2 Criteria for Effective Economic Activities

Porritt (2005) gives five types of 'capital models' which any government or organization needs to maintain or to manage in order to effectively implement its economic objectives; which are natural, human, social, manufactured and financial models of forms of capital. Each of these types of capital models has been defined in terms of its 'stocks' and 'economic flows' from the various categories of stock, which economic flows can be evaluated so as to assess the performance of an economy based on a respective type of capital.

Table 2.1 Five types of capital model of the economy

Types of Capital	Capital Stocks	Economic Flows
Natural	Land, sea, air, vegetation, ecological systems, food	Food, water, energy, waste, disposal, climate
Human	Knowledge, skills, health, motivation, spiritual ease	Happiness, creativity, work, innovation, energy, participation
Social	Families, communities, organisations, governance systems, schools	Security, shared goods (e.g., culture, education) inclusion, justice
Manufactured	Infrastructure, roads, buildings, tools, fixed assets	Living / working space, access, distribution
Financial	Money, stocks, bonds, bank notes	Means of valuing, owning or exchanging other four capitals

Source: Research data (2018).

In his analysis Porritt shows clearly that human capital has, among others, knowledge and skills to be used to provide different economic benefits such as creativity, innovation, work, even happiness in a society. Also, as one of 'shared goods,' education is a 'social capital' that assists individuals in a nation to abandon their differences and learn to live as one community. These 'human' and 'social' capital 'economic flows' are so important to all economic activities. Higher learning education is required to provide these 'human' and 'social' capital benefits to all sectors of the economy including the public sector.

2.3 An Alternative Economic Activities' Classification

Economic sectors can also be classified into four levels; Dortha Little (2015) used the following structure:

- Primary industries of the economy- This is the 'first' type of economic activity which is basically based on extracting of raw materials. For example, fishing activities, mining activities and agriculture.

- Secondary industries of the economy– This is the 'second' type of economic activity which is based on manufacture of various goods. For example clothes, beverage, steel, building materials and various machines which builds on the first type.
- Tertiary industries of the economy– This is the 'third' type of economic activity which is based on service activities like medical activities, teaching, banking, distribution, health and the government sector in general; it builds on the secondary type since it uses products of the secondary economic sector.
- 'A quaternary industry' of the economy– This is the 'fourth' type of industries and is based on innovation and technology; for example, 'information technology,' 'information and communication technology,' 'artificial intelligence,' and 'genetic modifications' of seeds activities; it cuts across all of the other sectors of the economy, seeking to enhance efficiency in the other sectors of an economic.

This research, by focusing on the public sector, has studied the 'tertiary' sector; the fact that the research has addressed the 'government' sub-sector of tertiary industries, however, means that these research results shall have the potential to influence the management of other economic sectors, since research respondents were working to **serve** all the economic sectors of the country; some were working in the ministry dealing with the management of land resources (primary sector), others in the ministry dealing with works and construction (secondary sector), others in the department dealing with government human resources management (all sectors) while others were from district level jurisdictions (all sectors). Moreover, the research variable that has been measured, namely higher learning, cuts across all economic sectors.

2.4 The Competitiveness of an Economy

UNIDO (2002-2003) defined 'economic competitiveness' as the capacity of countries to increase their industrial presence in domestic and international markets while developing industrial structures in sectors and activities with higher value added and technological content. Competing through innovation and learning may result in countries obtaining greater and more sustainable industrial margin. It is imperative for policy makers to create a 'checklist' of the key determinants of economic competitiveness. This is not an easy task. Many social, historical, political and economic factors affect industrial development, and the effects vary over time and by context.

Important to this research problem was the fact that 'innovation,' 'learning,' and 'policy makers' have been recognized as critical levers for the competitiveness of industries and the overall economy. This puts the resources and capital vested in humans at the centre of economic competitiveness; and this means that higher learning education graduates employed in the various sectors of the economy are required to be equally competitive; the most influencing policy makers, in any case, are those employed in the government sector, who formulate **guidance** policies for the entire economy; hence the public sector was selected for this study.

UNIDO (2002-2003) gave the following framework to identify the 'structural drivers of industrial and economic competitiveness:'

- Local rules, regulations, customs and social capital. The result is a social and economic setting that affects industrial and economic development as well as the national system of innovation and learning in the country. A strong system produces rapid and widespread learning and broad-based competitiveness. A weak one leads to

inefficiency, lags and has inability to compete; an example of 'social setting' is the university education system.

Higher learning education is expected to influence **positively** all of these 'person centered' sub-drivers of this driver that permeates the entire economy because of its ability to shape the 'facilitating resource' among the various resources of an economy, namely 'human resources.' That is, people's level and type of education, ethics, values, personal culture, role models' effect, national morals and motivation. For a nationwide impact efforts should **first** be applied at the central government level.

- The international context driven by globalization, liberalization and technological change. Industrial and economic development fundamentally depends on the international context. This context is changing rapidly and it is characterized by tighter linkages within global value chains based on close coordination between national and international actors within integrated systems.

  The success of national industries and the economy at large thus increasingly depends on firms' ability to build technological competence in given products, processes or functions. The responsiveness of university education by producing graduates capable of processing international interfaces of globalization, liberalization and technology exchange is apparently imperative.

- The business environment (the 'framework conditions') regarding the efficiency of factors' markets (for markets of labour, skills, technology, finance, inputs and infrastructure) and the quality of

support available from intermediary institutions (for training and technological services). All the business participants and resources for creating demand, supply and facilitation of demand and supply so as to create more revenue than costs for goods and services of an economy, along the spectrum of sectors of the economy (from primary sector through secondary to tertiary and with quaternary) depend on human knowledge and skills for both human resources and extra-human resources; especially higher learning levels of knowledge, skills and enthusiasm.

2.5 Tanzania's Economic Potential

Tanzania has a number of potential economic activities' investments areas. Tanzania has arable fertile land to cultivate different agricultural and food crops. Common cash crops grown in Tanzania are sisal, cotton, tea, sugarcane, cashew nut and coffee. Livestock keeping has Tanzania as a second country for having a large number of livestock in Africa. Population of Tanzania has been estimated at 50 million people; age structure of Tanzania is relatively young, with 45 percent of the population aged between 0 and 14 years, 52 percent aged between 15 and 64 years, and only 3 percent aged 65 years and over. (Tanzania National Bureau of Statistics, 2016)

Fishing also has a big potential in Tanzania; on the East side of the country there is the Indian Ocean. As part of the 'Great Lakes Region' countries, Tanzania has Lake Victoria and Lake Tanganyika to the Western part of the country. To the southern part there is Lake Nyasa; several rivers and dams are also available for fishing activities in Tanzania.

Manufacturing activities are mainly on processing raw materials; for example iron sheeting, soft drinks, cement, food processing, leather, textiles and

chemical products. The country is endowed with a wide variety of mineral deposits, including gold, diamonds, salt, gypsum, gemstones, iron ore, natural gas, phosphates, coal, nickel, cobalt and tanzanite whereby tanzanite is only found in Tanzania and reserves have been estimated at 57 trillion cubic feet.
And yet, the agricultural sector continues to be the major source of employment; about 65% of Tanzanian citizens depend on agriculture as employment. The manufacturing sector contributes only 13.25% of national GDP (Deloitte, 2017).

Industrialization is often essential for economic growth and for long-run poverty reduction. The pattern of industrial economic activities, however, impacts remarkably on how the poor benefit from growth. Pro-poor industrial economic policies focus on increasing the economic returns to the productive factors that the poor possess; for example, raising returns to unskilled labour, whereas policies promoting higher returns to capital and land tend to increase inequality, unless they also include changes in existing patterns of concentration of physical and human capital and of land ownership (Matleena Kniivila, 2005). That is why harnessing higher education in economic activities for Tanzania is so important, so that activities for economic growth can be pursued with a balance on returns, human and social considerations. Direction for the entire country on this policy balance is so important, and this direction can only be availed by central government policy makers; hence the need for utmost higher education responsiveness to policy formulation requirements at the level of central government.

2.6 Role of Higher Education in Economic Development

UNESCO (2004) identifies two unique opportunities for higher education to engage in any development. First, "universities form a link between knowledge generation and transfer of knowledge to society upon graduates'

entry into the labour market. Preparations required include education of teachers, who play the most important role in providing education at both primary and secondary levels. Second, they actively contribute to societal development through outreach and service to society." Cortese (2003) seconds this notion, stating "higher education institutions bear a profound, moral responsibility to increase the awareness, knowledge, skills, and values needed to create a just and sustainable future. Higher education often plays a critical but often overlooked role in making this vision a reality. It prepares most of the professionals who develop, lead, manage, teach, work in, and influence society's institutions."

Thus, higher education has a critical and tangible role in developing the principles, qualities and awareness not only needed to perpetuate the development philosophy, but to improve upon its delivery. Central government should ensure that all forms of industry benefit from the presence of higher education in a country.

Ilhan Ozturk (2008) says that education in every sense is one of the fundamental factors of development. No country can achieve sustainable economic development without substantial investment in human capital. Education enriches people's understanding of themselves and world. It improves the quality of their lives and leads to broad social benefits to individuals and society. Education raises people's productivity and creativity and promotes entrepreneurship and technological advances. In addition it plays a very crucial role in securing economic and social progress and improving income distribution. He continues by pointing out four key benefits of university education as follows:-

- University education exposes students to new research and technology;
- Studying at university encourages creative and independent thought;
- University life exposes students to other cultures and backgrounds; and
- University education improves leadership and innovation skills; the two categories which influence the development of the company and any institution.

2.7 Some Empirical Studies

Several research studies about how university education contributes to industrial and economic development exist. Abigail (2004) in her study on 'Factors Influencing Industrial Development' shows that for a company which is looking to relocate, the skill, integrity and teach-ability of the prospective workforce would be of key interest. She continues by informing that members of industry look at the performance and rankings of school systems. If a school system (e.g. a certain university) performs well companies perceive that as a sign of graduates from that university being talented and adaptable workforce. The entire industry structure of a nation for all goods and services is always represented at central government level through the government structure of departments or ministries, since the industry structure must fit itself to national development policy. A study on the relationship between graduate university curricula and their related job descriptions at government level has been a representative study for the entire structure of the economy of Tanzania.

Msolla (2005) in his article on the role of higher education in national development shows that universities and other higher learning institutions are key players in indigenising knowledge and diffusing it into the national

economy. As frontiers of knowledge and technology rapidly advance and competition between economies becomes fierce, industries of both goods and services have tended to turn to higher learning institutions such as universities for assistance to keep abreast with the frontiers of knowledge. The four major functions of a university according to Msolla (ibid.) are as follows:

- To transmit advanced knowledge from one generation to the next so that is can serve either as a basis of action, or a springboard to further research;
- To provide a centre for the attempt to advance the frontiers of knowledge through research;
- To serve the society through community service; and
- To provide through its teaching for high level manpower needs of the society.

A university, whether of science and technology or otherwise, is thus characterized by its ability to advance knowledge and search for new frontiers of knowledge. University training imparts knowledge and understanding of methods, principles and concepts, and emphasizes research, including basic research and scientific thinking. The responsiveness of higher education in Tanzania to the needs of both central and local governments will confer maximum and broad-based benefits to the entire industry spectrum of the country.

Yolanda (2009) in his study: "the role of higher education in industry for goods and services in supporting career goals and decision-making," found that university students considered very keenly attributes of 'being good at the job,' 'deriving job satisfaction,' 'availability of promotion opportunities' and 'being well-qualified for the job.' The study also revealed that as an employee you need to have influences on decision making, skills and abilities needed

for the career job available. In the alignment of the mentioned requirements, the study suggests that stronger links are necessary between higher education and potential job requirements. Higher education has to a great extent provided generic skills, such as research and problem solving; but there is also a need for the provision of managerial, leadership and team-working skills development to prepare students for the world of work.

Ndalichako (2017) in her article "the role of education for industrial development in Tanzania" has narrated that according to findings from the Tanzania Enterprise Survey, 2013, about 40 percent of all firms involved in the survey identified an inadequately skilled workforce as a major constraint to productivity in many sectors including the industrial sector. To comment on that she says that industrialization and the economy requires us to engage into building skills relevant to drive industrial and economic growth; the role of education is important to solve challenges for skills' development for the production of goods and services in Tanzania. More importantly, is the need to relate industrial and economic growth with science, technology and innovation. Competences at central government level were especially urgent so that the country could be given an adequate direction for matching higher learning education with overall industrial and economic activities' human resources' needs.

2.8 Some Experiences of South Korea and World Class Studies on the Link between Higher Education and National Economic Development

a) Aligning Primary, Secondary and Higher Education in South Korea for Multi--Sectoral Employment

Higher and university education in any country does not emerge of its own or from its own self; it stems from the institutions of secondary (middle and high schools) and primary/elementary education. The experience of the Republic of Korea in supporting higher education and, importantly regarding this research problem, so as to drive and provide the quality of human resources for employment in all sectors of the economy in the country, through robust primary and secondary education, shows this important relationship between higher education and preceding secondary and primary education levels (SaKong Il and Koh Youngsun, 2010). The two authors have made a colourful account of the RK's inspiring efforts to coordinate national education towards national economic performance in the production of goods and services.

SaKong and Koh (ibid.) have said that dramatic increases in the number of primary and secondary school students required a large-scale investment in school facilities. School facilities were expanded under the first two Five-Year Economic Development Plans in the 1960s. Targets for building schools were exceeded and investment doubled, and the serious shortage of classrooms was gradually resolved. By 1971, the system of teaching students in two shifts a day was abolished nationwide, except for lower-grade students in primary schools. A large number of private schools were established to meet the strong demand for education in the 1970s.

The government of the RK decided to end the entrance examination to middle school, first in Seoul in 1969 and then in the rest of the country in 1971, in order to eliminate the burden placed on elementary school students in preparing for the entrance examination. The resulting rise in the number of middle school students led to a corresponding increase in the number of students attending high schools. But then the competition to enter a select group of prestigious high schools intensified, and led the government to decide in March 1973 to introduce the "high school equalization policy," which assigned middle school graduates to high schools through a lottery. This system was first applied to high schools in Seoul and Busan in 1974 and then gradually introduced in other regions. This had the added benefit of encouraging more middle school students to attend high school.

Moreover, vocational training programs at the high school level were started to produce the skilled manpower needed for multi-sectoral employment. Higher education also received greater attention as operations for producing goods and services required a large number of students trained in science and engineering.

Also, rapid economic development in the 1960s prompted the government for the first time to prepare a plan for higher education in line with its economic development agenda. The objectives of higher education changed from creating elites to developing systemically a broad range of talents needed to support economic growth. Starting in 1968, the government successfully managed to produce more students majoring in science than in liberal arts by imposing student quotas on universities.

The RK government established a plan to restructure the universities and passed the Private School Act in 1963 to address quality degradation resulting

from the sudden surge in the number of university students. The plan and the law were later modified to become less restrictive, but they were the first instruments used by the government to tighten its control over universities.
The RK has moved on since those early days of the 1960s; regarding 'civil service development' the government readjusted 23 training institutes at the aspects of human power and organization, which were dispersed in the 'central department' in 1999. Eight institutes including the 'Central Officials Training Institute' were remained intact while six professional training institutes including the 'Local Administration Training Institute' (see Figure 2.2) were integrated into the 'National Institute of Professional Administration' (Seong-Hye Yun, 2003).

As well, five institutes were annexed to the 'research institute' and four institutes including the 'Taxation Officials Training Institute' and the 'Labor Institute' were either integrated or closed. However, each 'regional training institute' was retained" (Seong-Hye Yun, ibid.). And yet, by May, 2003 Seong-Hye Yun (ibid) said there were about 60 training institutes for civil servants in South Korea, including the 'Central Officials Training Institute.' They are divided into 'independent,' 'integrated,' 'annex' and 'entrustment to non-government,' depending on where they belong. Depending on their target and contents, they are classified into the 'general training institutes' and 'professional training institutes.' Even the ministerial structure has been changing; in contrast to the structure shown in Figure 2.2; by 2003 one ministry, for example, was called 'Ministry of Government Administration and Home Affairs.'

It is nearly impossible to add or deduct to the near perfect strategy that was followed by the RK so as to harmonize higher education with their economic development evolution; in this account by ensuring an interdependence

between all levels of education; from primary through secondary to higher levels; importantly, cementing the thesis of this research, namely that national economic growth has to be closely matched with related higher education, which, of course, is not possible unless primary and secondary education are adequate. The RK put ice on the cake by strategizing vocational education as well, which is well known for vesting skills in their graduates**.**

The similarity of the form or even nature of limitations and challenges between nations in trying to configure their educational structures towards higher education that shall produce professionals in knowledge and corresponding skills required by operations in their various sectors of production is also very exciting. Like it was in South Korea, Tanzania, which is an 'undeveloped' country unlike South Korea which is a 'developed' one, has struggled even more with providing adequate primary and secondary schools' classrooms and teaching facilities such as laboratories for science subjects and competent teachers especially for science subjects. And, higher learning education has not been spared either; one respondent, a university lecturer, commenting on the rating of 'good' that he assessed the responsiveness of university education to industry in Tanzania, nevertheless added that; 'lack of enough funds to do research, because in order to know how the market demand you need to do research;' another university lecturer commented; 'practical setup is a challenge especially in engineering courses, I suggest more budget should be allocated to buy laboratory equipments.'

During the 2013 academic year, for example, secondary school graduation examinations' performance by students was so low that the pass marks were lowered, mostly due to political rather than technical pressure! Even the scheme of evaluation was changed from the 'division' mode to the 'GPA' mode; all in an effort to protect the face of politicians who were clearly

mismanaging the national environment for the purpose of students at all levels to study hard.

The politically driven measures to lower secondary school students' examination performance of the 2013 academic year were so apparent in their deficiency of form that the incoming minister of education, Professor Joyce Ndalichako, following general elections of October, 2016, reversed them and returned to the 'division' system of grading students' answers to examinations and with it higher marks for scores' grades. It is these graduates from middle and high secondary schools who must join various institutions of higher learning in Tanzania to pursue professional training much needed for running national entities, both public and private, in the production of goods and services for the national economy. While the RK has definitely done so well in integrating and fortifying their higher education for supporting their much advanced economic operations, as reported at international level, Tanzania still struggles.

Other exciting similarities between the RK and Tanzania in higher education efforts towards human resources' development so as to staff economic activities in their respective countries are what SaKong Il and Koh Youngsun in their attractive description cited above call, in paraphrase, the need to give equal opportunity to high school education, strategizing vocational training, privatization in the financing of educational infrastructure, merging of graduation points, rationalizing between the number of Science subjects' students and Arts subjects' students in secondary schools, a moment in the life of a nation when there was a surge in the number of university students, and dealing with the risk of low quality education from private schools.

In Tanzania private secondary schools, both middle and high, in general offer better coverage of curriculum subjects, mostly due to better learning environment. The government has a policy that every administrative district should have a vocational training college within its borders; certainly this was done much later than the RK did as Tanzania seriously worked on vocational training only since late 1980s against 1960s of the RK. Since late 1980s and particularly since late 1990s private schools were built in Tanzania in increasing numbers; primary and secondary schools; since mid-2000s it was the time for private universities in Tanzania.

Like it did in South Korea, private universities soon mushroomed mostly due to a sudden surge in students seeking university education, which was itself on the back of a mushroom in private high schools. Aligning with South Korea was also a quite embarrassing fall in the competence of graduates from these private universities whose owners, mostly religious organizations, simply warmed up to a business opportunity rather than a commitment to supply the economy in Tanzania with genuine university graduates. While the RK legislated a law as reported by SaKong Il and Koh Youngsun cited above to deal with 'private schools' in 1963, Tanzania suspended admissions into as many as 19 universities for the 2017/18 academic year.

Apart from removing the 8th year in primary education early in the 1960s, increasing secondary education from two years to four years in the late 1950s, the end of class four primary school examination (end of lower primary school) so as to qualify for class five (start of upper primary school) was also abolished by 1971. Today, the president of the United Republic of Tanzania has emphasized that priority in employing secondary school teachers should be given to science teachers. Sponsorship for university education is segregative in favour of science degrees. Tanzania needs to learn from the RK

by imposing quotas on the numbers to be allowed to pursue Arts subjects in secondary schools; this will reduce the frustration that now falls on university candidates who are denied government bursary because they have secured admission for Arts degrees! Indeed, one respondent, a university lecturer, observed; 'currently Tanzania is having the philosophy of industrialisation but the output from the universities doesn't reveal exactly correlated because most of the courses taught are related to social sciences etc but not related to industrialisation.'

Across all this dynamism in the management of different levels of education (primary, secondary and tertiary) is the anticipation of requirements for human resources from industries and institutions already existing and those that may be built in Tanzania. The use of the word 'anticipation' has been very deliberate since it cannot be said that Tanzania has really come to a position where it could claim of having had 'a plan for higher education in line with its economic development agenda,' like South Korea did way back in the 1960s. All in all, the concise treatise by SaKong Il and Koh Youngsun cited above, that was done under a broad theme of 'Education and Industrialization,' which theme was itself under an even broader theme of 'Overview of Korea's development experience,' provided the researcher with a theoretical framework converging well with the research topic for relating national management of an economy with higher education.

The research would like to draw readers to the attention of the fact that when the RK decided to closely align the management of the national economy with higher education, they targeted the **civil service** first. That is, the Republic of Korea rationalized that nation-wide management of the economy heavily depended on **policy** formulation skills in the **central** government for ministry-driven economic policy and on **policy** formulation skills in the local

government for nationally devolved decision making in the regions, cities, towns and districts. This was the basis of the researcher targeting the public sector **first** for this study.

Outside the Republic of Korea the relationship between higher education and the productive 'adding value' operations (mostly of converting cotton into textile products) of an economy was observed since the 'Industrial Revolution' of the late 18th century and early 19th century. The industrial revolution had a strong link with levels of education for populations that were in the lead for the said revolution. Ludger Woessmann, Sascha O. Becker, Erik Hornung **(**2010) have said that "formal education was critical to technology adoption in the first and second phase of the Industrial Revolution during the 19th century" in relation to the defunct 'German Kingdom of Prussia.' The study by the authors showed that "education played an important role for industrialisation during the first phase of the Industrial Revolution. Prussian counties/regions that were better educated in 1816, before the start of the Industrial Revolution [in Prussia], responded more successfully to the opportunities created by the outside technological changes from Britain."

The authors further observed that the importance of education even increased from the first to the second phase; and that without its high average educational attainment, industrial employment might have been a third lower during the first phase in Prussia and possibly even lower during the second phase. Yes, factories in erstwhile Prussia needed educated human resources for industries to run; this study has revealed that it is true also in the case Tanzania; chapters four, five and six ahead contain details about it.

Ludger Woessmann et al. (2010) further add that in terms of the adoption of new technologies (rather than their subsequent use in production when they have become standard), human skills may have been a complement to new technologies not only since the early 20th century but even earlier. In the end, authors noted, it may not be a coincidence that Prussia, the educational world leader at the time, was particularly successful in the catch-up phase of industrialisation. An important idea is advanced by the authors here; namely that a country will be assisted to industrialize if it is prepared and ready by possessing necessary education before industrialization commences. It was therefore only right to ask whither Tanzania was producing graduates from higher learning who, even if not strict complements to industrial technologies being adopted by Tanzania as it was in ancient Prussia, are at least relevant to these technologies.

To answer the question above it is important to find out whether policy formulation, dissemination and direction from government; both central and local; is **having an opportunity** to ensure that this link between education, and especially higher education, and the technologies of Tanzania's industry is maintained. This is only possible if cadres employed in the government sector are well prepared for the jobs they have been placed in; and this is what this study has done; the details are in chapters four, five and six of this dissertation.

Madrick (2002), on the other hand, recognizes that "precise relationships between industrialization and the rise of public education are difficult to pin down." And yet adds that "if we take as our unit of analysis the long nineteenth century that stretches from the dawn of the industrial revolution to the eve of World War I, then we discern a general correspondence between the spread of industry and the rise of mass schooling. The industrial

revolution sparked prolonged, rising rates of productivity [through increased education], first in the British economy and then in continental Europe, the northern United States, and Upper Canada." In all cases governments of the day were instrumental in making sure that the provision of education was expanded to include as many people as possible.

Grubb & Lazerson (2004), also describing the relationship between education and economic enterprise, assessed that as educational access widened, the education of women increased, the study of the classical curriculum declined, and, by the twentieth century, the importance of schooling for both national economic development and individual mobility took on the status of a necessity. Gains in income and wealth during the industrial age made possible larger public expenditures for the welfare of the general population, and all governments considered schooling in their expanded social calculus (Jim Carl). Katz (1987) further added that with the growth of industry, support for public education grew, and the result was a transformation of schooling from limited provision into widespread and hierarchical educational systems.

Madrick, Grubb & Lazerson, Jim Carl, and Katz all describe the context of the 19th century Industrial Revolution; what was regarded as 'educated' labour definitely differed from what we would call 'educated' workers of today; industry-worthy workers of the 19th century are the ones we would regard as university graduates of today. Relationships between educated personnel and industries described by these authors are a valid argument in supporting expected interdependence between higher education and economic enterprise management of today; and also in connection with Tanzania; this would mean that a significant mismatch between higher education offered in Tanzania and the human resources requirements for the production of goods and services there will be an equally significant barrier to the development of the country.

Anietie E. Efi (2014) observed that in a modern economy it is essential to transform scientific research (higher education) into competitive advantages. In the US, extensive universities - industry collaboration and the ensuing transfer of scientific knowledge has been viewed as one of the main contributors to the successful technological innovation and economic growth of the past three decades. At the same time, the insufficient interaction between universities and firms in the EU is, according to a report of the European Commission (1995) itself, one of the main factors for the poor commercial and technological performance of the EU in high-tech sectors. This observation by Anietie (ibid.), and in relation to strong industrial regions of the world (the US and the EU), puts a strong ratification on the necessity to link higher learning with industrialization and all value adding operations in managing the economies of nations.

"Nowadays," (Banal-Estanol, Jofre-Bonet and Meissner (2010) noted, increasing the transfer of knowledge from universities to industry of all forms is a primary policy aim in most developed economies. In the 1980s, spurred by the so-called competitiveness crisis, the US introduced a series of structural changes in the intellectual property regime accompanied by several incentive programs, designed specifically to promote collaboration between universities and industry (Lee, 2000). Almost 30 years on, many elements of the US system of knowledge transfer have been emulated in many other parts of the world. The experience of the US in the 1980s speaks in a very special way to the role of higher education in successful industrialization; also importantly is the fact that efforts towards aligning higher education with industrialization in the US were driven by central government; this study therefore targeted the preparedness of central government in Tanzania.

According to Bo Xing and Tshilidzi Marwala (2017), humanity has found us in "the midst of the fourth industrial revolution" [(Implications of the Fourth Industrial Age on Higher Education: (HE 4.0)] which is driven by artificial intelligence (AI) and cyber-physical systems (CPS) (Marwala, 2007). Understanding the first industrial revolution was catalysed by Newton when he formulated his laws of motion. Because from then onwards motion was better understood and quantified, it was possible to design steam engines that mechanised much of the work that was traditionally done by humans.

Continuing, Bo Xing and Tshilidzi Marwala (ibid.) have said that the second industrial revolution was catalysed by Faraday and Maxwell who unified magnetic and electric forces and this led to electricity generation and electric motors which were instrumental in the assembly lines that have come to dominate many industries. The third industrial revolution was catalysed by the discovery of a transistor which ushered in the electronic age that gave us computers and Internet. The fourth industrial revolution, according to (Marwala et al., 2006), will revolutionise industries so substantially that much of the work that exists today will not exists in 50 years.

Bo Xing and Tshilidzi Marwala (ibid.) continue that "today all graduates face a world transformed by technology, in which the Internet, mobile computing, and social media create different opportunities and challenges for formal education systems." As students consider life after graduation, universities are facing questions about their own destiny especially employment. This period requires certain skills that are not exactly the same as the skills that were required in the third industrial revolution where information technology was the key driver. These skills, according to Bo Xing and Tshilidzi Marwala (ibid.) are critical thinking, people management, emotional intelligence,

judgement, negotiation, cognitive flexibility, as well as knowledge production and management.

The 4th industrial revolution, Bo Xing and Tshilidzi Marwala (ibid.) continue, digitises and vertically integrates processes form customers to suppliers. It also integrates horizontally all the internal processes within an organization and across functions. Put simply, they add, it epitomises a shift in paradigm from 'centralized' to 'decentralized' production, whereby machines no longer simply 'process' the product, but they are seamlessly integrated into the information network, the business partners and customers. In other words, the idea of consistent digitization and linking of all productive units in an economy is emphasized in the 4th industrial revolution age.

Digitisation of products, according to Bo Xing and Tshilidzi Marwala (ibid.), comprises the extension of current products, and the manufacturing of new digitised products. So far, the major gains for industrial companies have often been on improving the degree of automation but in the fourth industrial age this automation will be more intelligent and self-adaptive as more advances are made in artificial intelligence. The factory floor is moving towards self-regulating production that can be adapted to individual customer demands and has self-learning capability.

Moreover, the joint authors continue, higher education has gradually progressed from the elite phase (for rulers only, mostly monarchs) to mass higher education and then to post-massification stages. Many advanced and some developing economies enjoy the tertiary/higher education participation rates of over 50%. The core mission of higher education, on the other hand, remains the same whatever the era. The goal of higher education is to ensure quality of learning via teaching, to enable the students to get the latest

knowledge through exploratory research, and to sustain the development of societies by means of consultancy services; at the level of consulting especially, higher education has the opportunity of driving industry.

Most developing or under-developed countries, Bo Xing and Tshilidzi Marwala (ibid.) continue, lack innovative talent, especially at the high end. To fully grasp the opportunity of another wave of industrialization, a country's higher education system should not only focus on training knowledge-based skilled persons, but have a good look at cultivating innovative talent, especially high-level scientists and technologists. These scientists must be trained in an interdisciplinary environment where technologists should understand humanities and social science and vice versa.

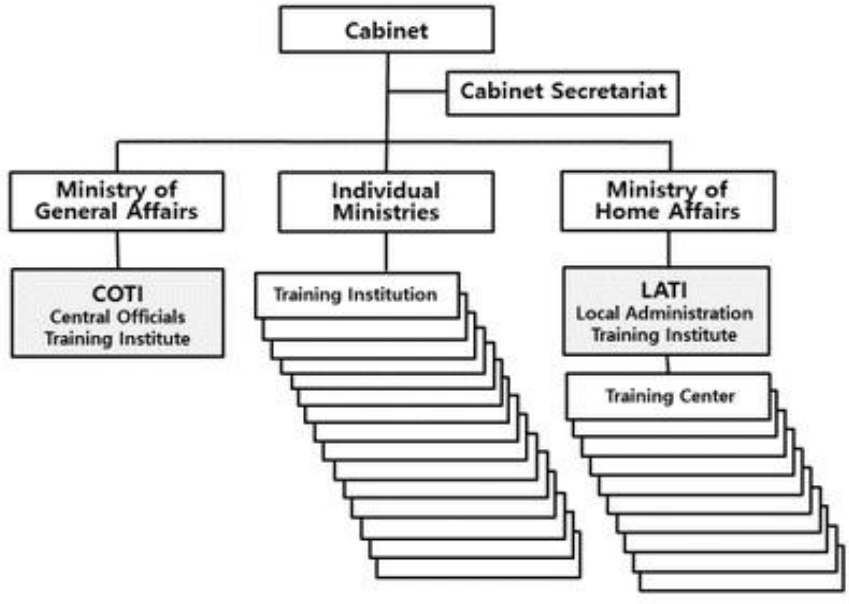
The close bond between higher education and economy generating activities of a nation has, without a doubt, been well elaborated by Bo Xing and Tshilidzi Marwala (ibid.) above. In all cases described by the contributors the role of **entire** countries and national governments in harmonizing higher education with economy building enterprises is evident. Decisions at the level of governments therefore need maximum efficiency and effectiveness; this research has assessed the efficiency and effectiveness of officers in the government sector **because** of the training that they received from their higher education; the details of this assessment are the subject matters of chapters four, five and six of this dissertation.

b) Methodologies for Integrating Higher Education with Enterprises of National Economies

An interesting question at this juncture should be on how a country through its government could actually process the convergence between its economic development programs and its higher education programs; once again we have found an assist in the review of related literature from the Republic of Korea.

In the 1960s the government of the Republic of Korea faced a human resources development need for personnel employed in government; both central and local; who were responsible for designing, communicating, implementing, supervising, coordinating and reviewing of economic development policies. To achieve this government-level structure was put in place in what was called by the RK as the 'Civil Service Training System' and it has been replicated in Figure 2.1.

Figure 2.1 Civil Service Training System: Nurturing the Driving Force of Economic Development in Korea



Source: Comprehensive one-stop references on key development issues of Korea: Interlocking Government Policy Needs with Training Programs (2012).

The sheer 'interlock' of two things strongly suggests that the RK positively was determined to ensure that higher education related to their ability to **manage** effective economic development policy; it was therefore **(i) put under central government direct control.** The article being reviewed here

observes that: “The overall training system for government officials was structured to reflect government policy needs. Training programs were provided by delivering institutions following the guidelines of the policy making authority.”

The article being reviewed shows two important levels of approaches that were adopted by South Korea so as to ensure that civil servants employed in the government sector; central and local; and therefore being the ones employed so as to formulate economic development policies for their respective governments, actually received training that enabled them to formulate national economic development polices. For example, by 2003 one ‘group’ of civil servants that brought together similar ‘subgroups’ with ‘roughly similar duties’ was a ‘mining and manufacturing industries group’ that therefore shared one ‘common professional training.’ (Seong-Hye Yun, ibid.) The two levels of approaches consisted of, one, ‘institutionalization of training system’ and, two, ‘bridging the policy needs of government in training programs.’ (SaKong Il and Koh Youngsun, ibid.)

1. Institutionalization of Training System

When the military government of the RK initiated the capacity building of government officials in 1961, the government established a system wherein the policy making authority directly controlled the training institutions (SaKong Il and Koh Youngsun, 2010). The Supreme Council for National Reconstruction (SCNR), the highest policymaking body of the military government holding both legislative and executive powers at that time, enacted the Government Officials Training Act (GOT Act) and established the Central Officials Training Institute (COTI). (SaKong Il and Koh Youngsun, ibid.) Besides, the government established the Education and Training Department within the Ministry of General Affairs (MOGA) in order to take

charge of capacity building for government officials from a central government perspective.

Accordingly (SaKong Il and Koh Youngsun, ibid.), while the Education and Training Department was responsible for establishing an annual plan for government officials training, COTI was in charge of providing training programs. When the government later allowed central government ministries and provincial governments to establish their own training centers for the teaching of specialized functions, COTI's responsibilities expanded to include supervision of these centers' training activities.

Central government ministries controlled the training of government officials; specifically, COTI (for central government officials) was under the supervision of MOGA and the Local Administration Training Institute (LATI) for local government officials was under the purview of the Ministry of Home Affairs (MOHA). Individual ministries ran their own training institutions specialized in the designated functional areas and provincial governments also operated training centers. (SaKong Il and Koh Youngsun, ibid.)

2. Bridging the Policy Needs of Government in Training Programs

The Korean government established a civil service training plan that reflected the needs of their economic development policies. (SaKong Il and Koh Youngsun, ibid.) By law, MOGA was required to establish an annual education and training plan and convey it to the heads of government ministries, agencies, and training institutions. MOGA, in its annual plan for education and training of government officials, reflected in the plan the major policy decisions of the Cabinet. In particular, training programs were newly developed or aspects of existing programs reorganized accordingly.

"The Planning Program," SaKong Il and Koh Youngsun (ibid.) added, "is a case in point." This program was opened to teach skills and techniques in planning to government officials working at planning offices in central ministries and agencies. This program supported the offices of planning and coordination established by the military government in central government ministries in 1962 in their efforts to effectively implement the First Five-year Economic Development Plan.

Another example of targeting "the needs of their economic development policies" in the nature of the RK's training on government officials is a series of courses on new managerial techniques for mid-level officials added by COTI to existing training programs in 1967. The courses included: the Program Evaluation and Review Technique (PERT); the Critical Path Method (CPM); the Operational Research (OR); and the Program Planning and Budgeting System (PPBS)—all were very useful for establishing development policies. At that time, the government of the Third Republic needed to foster competent officials who could conduct planning tasks to prepare for the Second Five-Year Economic Development Plan (SaKong Il and Koh Youngsun, ibid.).

SaKong Il and Koh Youngsun (ibid.) add that even though the government lacked the necessary facilities and systems, it still provided advanced courses on managerial and statistical techniques to mid-level officials. Thus we can view such training as preemptive or concurrent—a strategy to equip mid-level officials with the advanced knowledge and techniques they would need to design and execute development policies.

The Republic of Korea needed a training program in 'planning,' a 'Planning Program' so that central and local government officials could generate

economic development policies in the course of executing the planning function; then they ensured that selected training institutions were empowered to train on exactly training needs developed by the 'Education and Training Department' which was located in the 'Ministry of Home Affairs.' Such a finely cut way of harmonizing personnel needs of enterprise management to a country with curricula in institutions of higher learning as was achieved by the RK in the 1960s, is rarely found in many parts of the world; the RK succeeded because of a very cohesive society that it is as a country. However, this is not to say that Tanzania should not be encouraged to follow South Korea's example. The researcher has done exactly that in chapters four, five and six of this dissertation.

(ii) Higher Education and Industry Collaborations: University-Industry Relationships

"There is empirical evidence," Anietie E. Efi (2014) has said, that lecturers are combining increasingly traditional activities of research with activities of industry (Lee 1996; Azagra et al., 2006; Powers, 2004; Lee and Rhoads, 2004). Moreover, Anietie (op.cit.) has added that most studies in this area find a positive relation between lecturers' scientific performance and various forms of linkage with the socio-economic environment, such as, patenting, industry funding of university studies, collaboration and co-publication with industry.

Most of these studies, says Anietie E. Efi (op.cit.) use 'patents' as a proxy for University –Industry- Relationships (UIR), and find that inventors publish more than their non-inventor colleagues (Azoulay et al. 2005; Breschi et al., 2005, 2007; Van Looy et al., 2004, 2006; Meyer 2006). Also, studies that take account of industry funding, show that researchers who are funded by industry are more productive than colleagues that are not (Blumenthal et al., 1996; Gulbrandsen and Smeby, 2005). Finally, and in line with these findings,

researchers involved in co-authorship with industry, both goods and services oriented, publish more and receive more citations to their work than their non-collaborating colleagues (Godin and Gingras, 2000; Hicks and Hamilton, 1999; Van Looy et al., 2004).

The fact that university lecturers are involved in both research and UIR activities, and that the latter can have a positive effect on their scientific production, suggests that these activities are complementary to the extent that the development of one increases the effectiveness of the other (Milgrom and Roberts, 1990). Complementarity, in this context, goes far beyond the joint development of the two types of activities and assumes the generation of synergistic effects on scientific performance: the greater the linkages with industry, the greater the effectiveness of the lecturer‘s academic research and the greater the effectiveness of industry practices. (Anietie E. Efi, op.cit.)

In a study based on interviews with scientists at five US universities, Siegel et al. (2003) found that 65% of researchers reported that interaction with industry had positively influenced their research. Some scientists reported that these interactions improved the quantity and quality of their basic research, stating explicitly that: ‘there is no doubt that working with industry scientists has made me a better researcher. They help me refine my experiments and sometimes have a different perspective on a problem that sparks my own ideas’ (Siegel et al., 2003).

Thus, interactions between university and industry do not imply knowledge transfer only from university to industry; the transfer takes place in both directions. Breschi et al. (2005) suggest that the resolution of industry problems may be both economically valuable and scientifically relevant, even to the point of opening up new disciplines and lines of research. Moreover, through UIR, researchers gain access to industry R&D facilities as well as

additional financial resources that may be used for the purchase of equipment or hiring of additional personnel for research (Breschi et al., 2005; Kline and Rosenberg, 1986). These factors contribute to improving research performance and constitute another argument in favour of the existence of complementarities.

In order to explain the positive and reinforcing effects from the relationship between publishing and patenting activities, there have been several theoretical analyses. Owen-Smith (2003) maintains that a 'hybrid regime'emerged in the US university system after the 1980s. He states that success in the commercial sphere interacts with that in the academic sphere. In this vein, Van Looy et al. (2004) develop the concept of a 'compounded Matthew effect' at the individual level. They assert that the interaction between the production of papers and patents creates a cumulative advantage altogether, so academics successful in the scientific area are also able to demonstrate excellence in the area of knowledge-transfer activities.

Regarding a 'resource effect,' Calderini et al. (2007) and Breschi et al. (2004) maintain that university patenting can attract more financial and cognitive resources for academic research from industry. Azoulay et al. (2006) argue that academics involved both in publishing and patenting activity can benefit from within-scientist economies of scope. Stephan et al. (2007) suggest 'duality' of the research output as a reason for the apparent complementarity between patenting and publishing. The results from 'dual research,' Stephan et al. (2007, ibid.) add, may be not only publishable but also patentable. The researcher has learnt a lot from the research study the **extent** policy makers at central and local government levels think that **university-industry collaborations** for Tanzania can perform in aligning economic development enterprises in the country with university curricula; all the three key clusters

of **respondents** were completely **united** when it came to the usefulness of typical world-wide strategies for complying university education to job needs in the country; yes, they can work **together**, and according to results of this research, universities should take the lead.

(iii) Higher Education Catching up with Political, Economic and Social Trends

The connection between education and society is often implied to be one-way where education is expected to fit in with economic and political trends rather than opposing them and representing something different. That is, education has to wait for industry to give a technological signal and then education will fit itself in. Sincerely, looking around countries one shall find this pattern as the dominant one rather than the two higher education-industry matching methodologies described already, where efforts were made by South Korea since the 1960s and the US in the 1980s to more or less reconcile the two in parallel. The strategies to be adopted under this typical practice mostly emphasize enhanced **training effectiveness** at the institutes and universities of higher learning. And this is certainly true; competent lecturers always develop their students up to closer to industry knowledge, skills and sentiment needs than incompetent ones.

1. Universities constituting themselves into competence platforms: University-as-a-Platform (UaaP)

The meaning of a 'university platform' will be easier understood through an illustration known to most of us; that is, the Microsoft Windows 7 Operating System Platform. Windows 7 operates a wide range of technologies of Internet Modems, cameras, mobile phones, overhead projectors, printers, Internet browsers, video players, calculators, etc. All the applications listed operate so well on Windows 7; higher education institutions have therefore been urged (Bo Xing and Tshilidzi Marwala, ibid.) to reconceive their

business ecosystems, re-identify their competitive edges, reshuffle their customer pools, reshape themselves as orchestrators, and rebuild consultancy service architecture.

University-as-a-Platform (UaaP) gives the current higher education system an opportunity to steer their bread-and-butter businesses towards platform businesses for a better service performance. Key drivers for a successful UaaP include: a) deliver inter-, multi-, and across-disciplinary degrees; b) an appropriate blend of service models; c) the emergence of Internet of everything; d) the integration of routine education activities into software across a plethora of institution systems; e) up-to-date digital infrastructure; and f) enhanced connectivity among all parties residing in higher education value chain. That is, as much as possible interact with industry while empowering students with blended education thereby increasing their chances of understanding industry more and more.

Engaged government decision makers and business practitioners can answer some key strategic questions comprehensively: deliver education in the quickest, most efficient and best affordability form; develop 21st century students' skills and prepare students for the new job market in the most appropriate way; encourage native innovation with the strongest incentives; and share resources across institutions, districts, regions, or the entire country in the smoothest fashion. This is what Bo Xing and Tshilidzi Marwala (ibid.) have called 'competitiveness' of institutes of higher learning. It shall be useful that high placed government officials; including the minister of education herself; have come forward to talk about making university education in Tanzania as responsive as possible.

2. Conducting applied research by universities

Even universities will not be doing joint research with practitioners in the field in a 'collaboration' or 'relationship' or 'alliance,' for university staff to research on industry and obtain field data for making industry related conclusions and policy contributions, will go a long way in higher education being relevant to industry human resources requirements (Anietie E. Efi, 2014) Respondents assigned significant weight to the strategy on applied research for university lecturers as one of the strategies for complying university curricula to occupational needs.

3. Making high-end executives from both the public and private sectors integral to curriculum management

Seong-Hye Yun (ibid.) in his research report on 'Korea Civil Service Development' in which past trainees were sampled, it was stressed that "the role of top-notch outside professionals also needs to be integral to the way the institutes run their programs." Trainees were referring to the elaborate structure of Korean Civil Service training institutes; before the South Korean government can employ such institutes it must be established that programs they shall deliver have been given input from industry through very competent executives. This is certainly a strong way of making higher learning responsive to industry management needs. Research respondents talked of inputting into university curricula material that was needed for universities to be employment compliant.

4. Academic and Professional Independence of higher learning institutions

The reader would remember the story in Tanzania about politically changing the grading system for secondary school examination results and even the lowering of marks for score grades, referred to earlier in this research proposal. This was an unprecedented invasion of the institution of learning that is required to be objective, sincere and above all a tool for growing and

developing individuals; politicians in Tanzania were simply disempowering Tanzanians. When Seong-Hye Yun (ibid.) in 2003 noted the importance of training institutes being 'independent' in their running of programs offered as a condition before government could engage them to train their civil servants, he made a genuine point. If higher learning institutions in Tanzania cannot practice academic and professional independence, they shall be dead bodies, not just to the economic development of Tanzania but also to every other party interested in its development. Quite fittingly therefore, it was a great relief that respondents gave **maximum** scores to the need for university independence if their graduates were to have a chance of having the necessary depth in learning needed for them to align with employment responsibilities.

5. Involving executives and functional staff from industry in training facilitation

Respondents to the research by Seong-Hye Yun (ibid.) in 2003 in South Korea insisted that senior people from the field should be given adequate space in the timetable during the delivery of the civil service training programs. Up to 83.5% of respondents preferred to have facilitators from the field where they had little contacts especially the private sector. Their preferred source of instruction; namely the industry; certainly also brings higher learning closer to needs of industry management. The researcher has confirmed the high place of visiting lecturers from work places to university classrooms when public sector and university lecturers' respondents gave this strategy high scores as a strategy for relating university education to work place job needs; further comfort is from the fact that respondents included officers employed in the government sector who are responsible for nation-wide policy formulation, including higher learning education policy.

6. Using participatory training methods

Once again, the research by Seong-Hye Yun (ibid.) on the Korean field brought to the fore what people in industry come to learn of how well they were trained once they have confronted the realities of industry. Respondents to his research instruments rejected the lecture method by 87.6%. Instead, they preferred 'problem solving' training techniques; case studies, discussions with lecturers, role plays, simulations, presentations and debates. Of course, participatory training methods bring students closer to the field of enterprise management than lectures do. The researcher has confirmed sentiments by these public servant trainees in South Korea, after respondents in Tanzania ranked the need for participatory training methods quite high as a means of making students of universities in Tanzania employment-able.

7. Intensifying field attachment components of curricula

Many public university campuses in Tanzania were rocked by waves of students' demonstrations during the last half of the 2000s years first decade and early in the 2010s decade; among their issues was their clamor for field attachment training to be part of their various first degree programs; they did not succeed in the main, but not because of their irrational claims, rather, due to budgetary constraints on the part of the Tanzania government. It was not surprising then that respondents to the research study copyrighted by Seong-Hye Yun (ibid.) in South Korea registered a serious concern regarding their field attachment training on account that Korean civil service trainee were field attached to 'places like social welfare facilities' instead of work places related to their curriculum.

Bo Xing and Tshilidzi Marwala (ibid.), in concluding their article, have observed that: "the business of higher education remains unchanged since the times of Aristotle; today students still assemble at a scheduled time and venue

to listen to the wisdom of scholars." "Given the 'fourth industrial revolution,'" however, Bo Xing and Tshilidzi Marwala (ibid.) have further observed, so as to support the alignment with enterprise management needs, a new form of a university is emerging that does teaching, research and service in a different manner. This university is interdisciplinary, has virtual classrooms and laboratories, virtual libraries and virtual teachers. It does, however, not degrade educational experience but augment it. And then add: "we trust that improving the quality/standards of service in higher education can bring about a significant change in the society, including dynamic consistency with industry."

All governments, including the government of Tanzania, have to be positioned in such a way that they shall make noble words by Bo and Tshilidzi in the immediately above paragraph, especially the emphasis in their concluding sentence on 'improving" matters in relation to the 'consistency' between higher learning education content and requirements of employment in the field, a reality. The researcher really hopes he has made a contribution on this endeavour through the conclusions from this study.

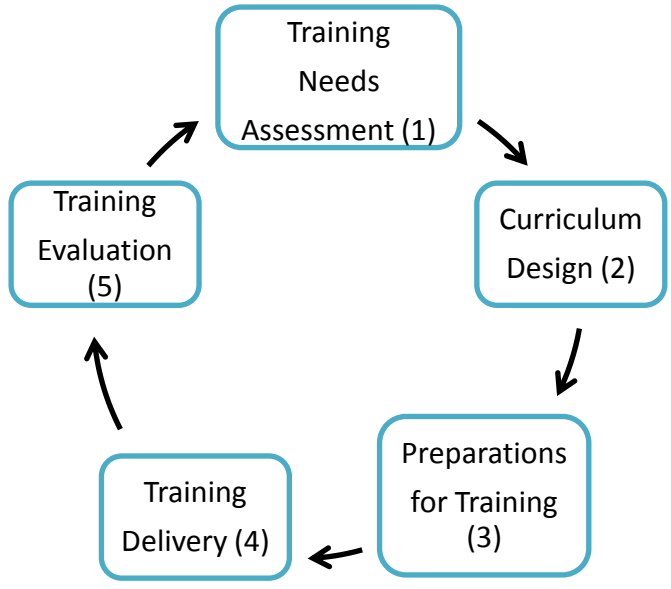
2.9 Managing the Training Function

All education is intended to impart three main areas; that is (1) knowledge (2) skills and (3) attitudes. A few words therefore shall be made here about the management of training itself in executing the standard 'training cycle' towards harmonization of a nation's industrial agenda with its higher learning education content.

a) The Training Cycle

All training would, consciously or unconsciously, follow a cycle of activities as captured in Figure 2.2.

Figure 2.2 The Training Cycle



Source: Research data (2018).

In well technically structured higher learning education curricula, in the sense that it supports a nation's economic development operations for goods and services, therefore, the training needs assessment for higher learning education should address the training needs of the industry mix for a given country. This research has studied the efforts made in designing higher learning education curricula in Tanzania (stage 2 of the training cycle) so that specific industrial requirements in human capital (stage 1 of the training cycle) were incorporated. During the search for **factors** affecting the observed level of synchrony between higher learning education and human capital requirements of industry in Tanzania, stages 3, 4 and 5 of the training cycle might be found to be relevant. That is, it is not enough to target higher learning curricula on valid industrial needs for a nation; designed curricula still need effective delivery by lecturers in classrooms and in the field, which would not happen unless human, material and environmental preparations for delivery have been done.

Additionally, after training has been done, a follow-up on the performance of graduates in the field of industry is vital so as to determine any experienced divergencies between curricula input and industrial requirements as an important feedback for higher learning education development; this kind of training evaluation is an 'ultimate evaluation' or, as sometimes called, a 'tracer study.'

Even with industry-coordinated curricula, it is still not enough to make workplace-based training evaluations, so as to eventually achieve graduates who are fitted, as practically possible, for industry. Training evaluations are required also during curricula delivery if typical students are to find motivation to work hard at learning which hard work would subsequently improve their chances of applying themselves to industrial tasks. Table 2.2 shows the progression in training evaluation.

Table 2.2 Levels in Training Evaluation

Levels of Evaluation	**Timing of Evaluation**
Pre-training evaluation	Just before commencement of training
Continuous evaluation	During training period
Immediate evaluation	By the end of training
Ultimate evaluation	In places of work after training

Source: Research data (2018).

This research study therefore, was actually of the 'ultimate evaluation' type, since the researcher measured the extent to which what was studied by practitioners; employed graduates composing the sample; actually had a relationship with what they were now doing as employed government officers.

b) Training Needs Assessment for a Country's Human Capital Industrial Requirements

The process of determining training needs, which should be specific to individuals, nevertheless differs according to the unit of assessment; among (1) individuals (2) functions and (3) organizations. Table 2.3 shows differences in approaches for generating training needs for the different levels of organizational performance.

Table 2.3 Training Needs Generation Approaches

Units of Training Needs assessment	Training Needs Assessment Techniques
Individuals	Assessment of knowledge, skills and attitudes' gaps.
Functions	Assessment of tasks' design gaps.
Organizations	(1) Assessment of performance problems (2) Assessment of training gaps for executing systems.

Source: Research data (2018).

This research therefore, busied itself with the assessment of performance problems and the assessment of readiness to execute systems, since it related higher learning education to the country requirements' in human capital; it addresses in its analysis and conclusions the whole government as an organization. Assessed performance problems and systems' requirements, however, have to be transformed into training needs. Table 2.4 shows the logic followed in translating assessed performance problems and systems' personnel requirements into training needs.

Table 2.4 Converting Assessed Performance Problems and Systems' Execution Requirements into Training Needs

Levels of Assessed Performance Problems or Systems' Personnel Requirements	**Degree of Trainability**
Individual	Very high
Task	High
Structure	Low
Policy system	Very low

Source: Research data (2018).

Performance problems in the government of Tanzania or systems' execution gaps that are due to individual limitations, such as inability of a human resources management (HRM) officer to **state** minimum information required in a personal file of an employee, can be readily solved through training of the HRM officer; performance gaps that are found at the level of whole tasks, such as the **design** of an annual leave application form usually done by HRM officers, however, could be not necessarily because of lack of necessary knowledge and skills but possibly due to a low priority of the application form that delayed the review of the defective design; task level performance and systems' execution gaps therefore, need further information before it can be judged that they represent a training need. When performance gaps are due to the kind of organizing in place or are due to a restrictive policy in place, the training solution is even less and least likely respectively.

The fact that a performance gap or policy execution gap is at individual or, less so, task levels, does not immediately recommend that training should be done as an intervention. There are what are called 'contextual factors' that should be assessed for their support before a training program can be launched; and this is true also in the case of a nation's operations' management for goods and

services on higher learning education training programs. Table 2.5 shows these factors of context necessary to sustain a determined training need.

Table 2.5 Contextual Factors to Validate a Training Program

Contextual Factors	**Importance**
Valid delivery time of graduates	Graduates must graduate at a time when training benefits are expected.
Stability of employment positions for graduates	After graduation employment for which graduates were trained should be available.
Top management support	Top leadership shall guarantee validity of training results.
Budget support	The Treasury must commit to financing of training programs.

Source: Research data (2018).

The theories (Seong-Hye Yun, ibid.) relating to the key domains of learning (knowledge, skills and wants) and the role of the training cycle in the process of identifying training needs and the instituting of a training program, including the phases of evaluation of the training itself, are without doubt, consciously or unconsciously, going to assert themselves during the endeavour by a country to harness the support of higher learning education in its 'economic development' and 'growth' (SaKong Il and Koh Youngsun, ibid.) program.

2.10 The Research Implications in a Study on the Integration of Higher Learning Education with Enterprises' Management Needs in Tanzania of the Unitary System for Intergovernmental Relations

Throughout the entire industry in Tanzania; private and public; a uniform and centralized (unitary) system is used in training for higher learning education and for allocating university graduates to job vacancies. From the central government through regional central government offices to district central and local government offices, recruitment of new graduates into the government hierarchy is done centrally by the 'public service recruitment secretariat' (PSRC). Some universities offer programs intended for local government staffing; the tendency though is to design these formally defined as local government programs in such a way as to still apply in central government situations.

The higher learning students' loan board (HLSLB) sponsors university students for human resources needs across the entire hierarchy of government; central, regional, district and local; and across both financial sectors; public and private. The central government therefore, in general and typical terms, trains and distributes first degree holding personnel to central, regional, district and local government higher learning education graduates' staff needs. This unitary intergovernmental 'administrative relation' is integrated with an intergovernmental 'fiscal relation,' that is, central government pays monthly salaries to all public servants across the entire hierarchy from central to local.

Ministers, junior ministers and permanent secretaries at the central level, regional commissioners and regional administrative secretaries at the regional level and district commissioners, district administrative secretaries and local

government district or municipal or city or town executive directors, are all appointed by the president of the United Republic of Tanzania. The intergovernmental 'political relation' from top to bottom is therefore quite deep.

Regarding this research proposal therefore, potential respondents across the government hierarchy from ministerial through regional to district levels were responding to the researcher's instruments using standard and homogeneous definitions regarding higher learning education and its relevance to workplace corresponding requirements in Tanzania. Not only were they trained by the same institution, employed by the same institution, being paid by the same institution, but also they actually belong to the same organization, namely the government of Tanzania. Researcher therefore needed no permissions so as to cross from one level of government to another while working with research respondents.

CHAPTER THREE: RESEARCH METHODOLOGY

In this chapter the researcher describes the framework within which the study was conducted; that is, the principles that guided and the actual activities of the research study. It covers the design of the study, area of the study, research analytical framework, research conceptual framework and related information gap that has been filled, the research population, sampling procedure, methods of data collection, data presentation and data analysis.

3.1 Research Design and Area of the Study

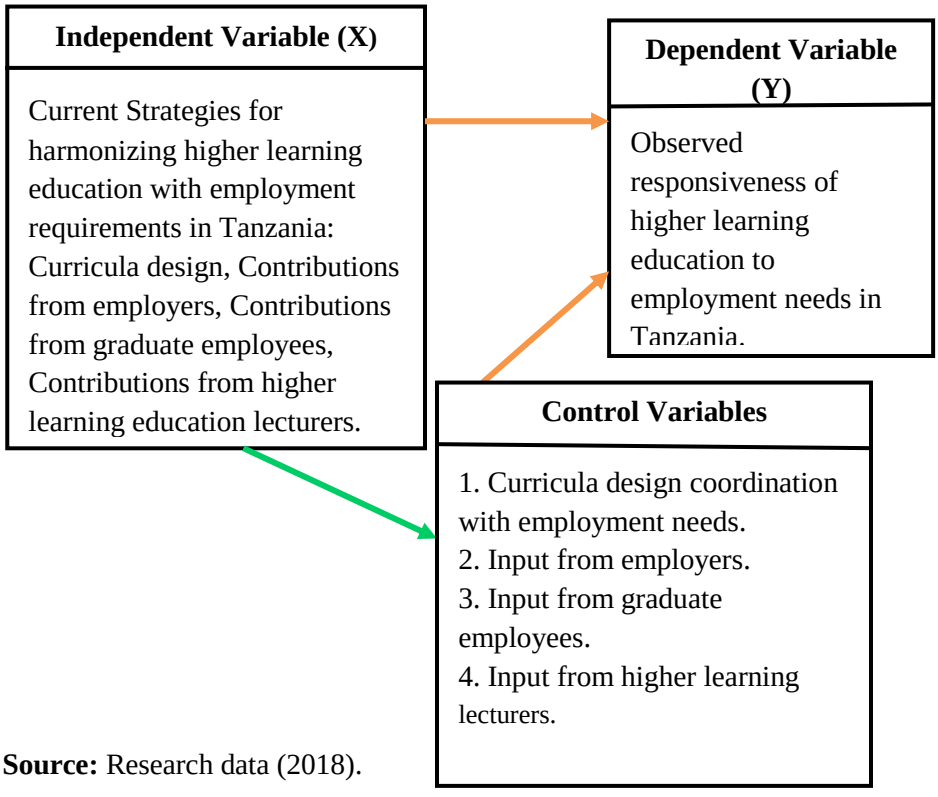
The researcher used a 'case study design' because the design has capacity of facilitating in-depth analysis of the study facet and provided flexibility in the use of data collection methods such as questionnaires, interview, observation and documentary reviews. Tanzania was used as a case area and a number of institutions were used for data gathering. Tanzania was a right place for a study on synchronizing higher education with national economic development enterprises given that it is currently working on a number of social, economic, political and cultural reform programs in order to improve the standard of living of its citizens; among such programs are the Tanzania Development Vision (TDV) 2025 and the Sustainable Industrial Development Policy for Tanzania (SIDP) 2020.

3.2 Research Analytical Framework

In executing the case study the status on the responsiveness of university education to job requirements in the public sector has been established based on the specific activities of the independent variables that were controlled by this study; namely, the match between graduate employees' university curricula and the contents of their job descriptions, the contribution of

graduate employees to job-responsive university education, the contributions of graduates' employers and also the contribution of university lecturers. Figure 3.1 represents the 'analytical framework' that guided the research study.

Figure 3.1Research Analytical Framework

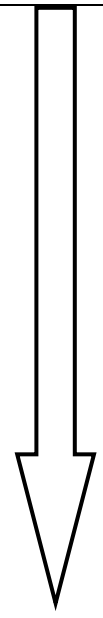


Source: Research data (2018).

3.3 Research Conceptual Framework

The research 'conceptual framework' was intended to assist a researcher in data gathering. Its description therefore contains more information than contained in the analytical framework. Figure 3.2 contains the research conceptual framework that structured the variables of the research problem to depict areas where activities have been conducted to gather research data, the outputs from the analysis on gathered data and how the dependent variable was affected by conclusions from data analysis.

Figure 3.2 Research Conceptual Framework

Strategies Used for Making Higher Learning Education Responsive to Job Needs in Tanzania: Independent Variable (X)	**Degree of Responsiveness of Higher Learning Education to Job Needs in Tanzania: Dependent Variable (Y)**	**Factors Influencing Observed Degree of Match between Higher Learning and Job Needs in Tanzania**	**Strategies for Improving the Responsiveness of Higher Learning Education to Job Needs**
1. Degree programs' curricula match to corresponding job descriptions		1. Review of curricula responsiveness	1. In curricula
2. Responsiveness efforts by employers		2. Efforts and gaps in employers' responsiveness efforts	2. Employers' proper contribution
3. Responsiveness efforts by employees		3. Efforts and gaps in employees' responsiveness efforts	3. Employees' proper contribution
4. Responsiveness efforts by higher learning education lecturers		4. Efforts and gaps in lecturers' responsiveness efforts	4. Lecturers' proper contribution
			5.Governments' proper contribution

Source: Research data (2018).

3.4 The Research Gap to be filled by the Conceptual Framework

This research has filled an important and topical and yet quite long coming for Tanzania, information gap (the 'information gap' or 'information need' is the 'research problem') that the 'conceptual framework' to this research intended to fill. As recently as the 25th of March 2018, during the evening news bulletin that runs on television daily from 7.00 pm to 8.00 pm East African time in Tanzania, by a national channel called "Channel Ten," and a subsidiary of what is called "Africa Media" in Tanzania, one of the contributors to the news hour reported that "over 50% of graduates from East African universities did not possess competences for **any** kind of employment!"

And yet on the very next day, the 26th of March 2018, a different television news channel, and this one owned by the government of the United Republic of Tanzania itself, during their regular bulletin going by the Swahili product brand of "TUAMBIE" (which means "Tell Us" in English), which runs between 10.00 pm and 10.30 pm, informed viewers through members to the bulletin panel of experts that "neither first degree nor second degree holders from universities in Tanzania were able to satisfy minimum recruitment interview requirements required for their employment."

Earlier on in this research report Ndalichako (2017), the standing minister of education and technical training to the government of Tanzania, in her article "the role of education for industrial development in Tanzania," said that according to findings from the 'Tanzania Enterprise Survey (2013),' about 40 percent of all firms involved in the survey identified an inadequately skilled workforce as a major constraint to productivity in many sectors including the industrial sector.

Imagine a minister of education not having solutions on higher education! Higher learning education graduates in Tanzania are by a **worrisome** proportion unemployable including those who are **already** in employment; that is, they were done favours when they were recruited! But more seriously is that nobody knows what to do! This study has extracted from **all** who are supposed to provide a solution what they are presently doing to assist and what they are not doing. What was being **done** and **not** being done by stakeholders to co-opt higher learning education in Tanzania for managing enterprises efficiently and effectively was the 'information gap' that the conceptual framework has filled.

3.5 Population

This study has covered graduate employees and employers from different ministries, regional administrative secretariats' offices, district administrative secretaries' offices and local governments. Also, respondents from universities and colleges have been used as part of the study area including professors and instructors. The researcher used lists of employees of specific departments of study as sampling frame, while observing gender balance.

3.6 Sampling Technique and Sample Size

For the purpose of this study 158 respondents formed the sample size covering employees, employers and higher learning institutions' trainers. 'Simple random sampling' and 'judgmental sampling' techniques were used. Due to differing availability of respondents' groups it was not possible to secure equal numbers from all groups into the sample size; therefore, of the total sample size, graduate employees sampled totaled eighty six (86), graduates' employers totaled fort five (60), while university lecturers who were effective were twenty seven (27). Initially the researcher had planned a sample size of 200 respondents.

a) Simple Random Sampling

Babbie (2013) has defined simple random sampling as a type of probability sampling which assigns numbers to units composing a population. A set of random numbers was generated and the potential respondents assigned numbers of sizes within the sample size quantity (the sampling process had two hundred (200) planned respondents; eventually one hundred and fifth eight (158) were effective) were included in the sample until the sample size planned for the research was reached. Researcher used lists of all the employees which were provided from appropriate officials. It was eventually a great excitement; respondents from all parts of Tanzania have participated; from central ministerial offices, regional offices, district offices as far away from the capital city as the very borders of Tanzania; doctors, engineers, secondary school teachers, community development officers, lawyers, land management scholars, directors, officers, and virtually all kinds of cadres).

The researcher is particularly grateful to his major supervisor for the encouragement to expand the sample size that has resulted into a research scale rare by Tanzanian proportions.

b) Judgmental Sampling

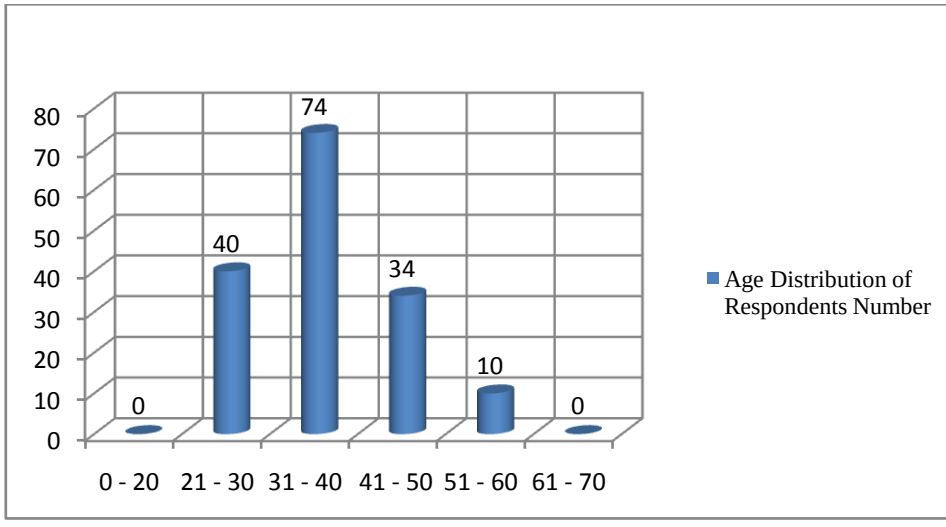
This is a non-probability sampling method which preceded the random sampling process. That is, respondents selected by random sampling were those falling under institutions (the population) that researcher had 'judgmentally' selected on the basis of his knowledge of the population as containing data relevant to the research problem.

c) Characteristic of Sample

The participants of this study consist of different age range where there are no respondents with 1-20 years old, 25.40% are on 21-30 years old group,

46.80% are on 31-40 years old group, 21.50% are on 41-50 years old group, 6.30% are on 51-60 years group and there is no over 60 years of age.

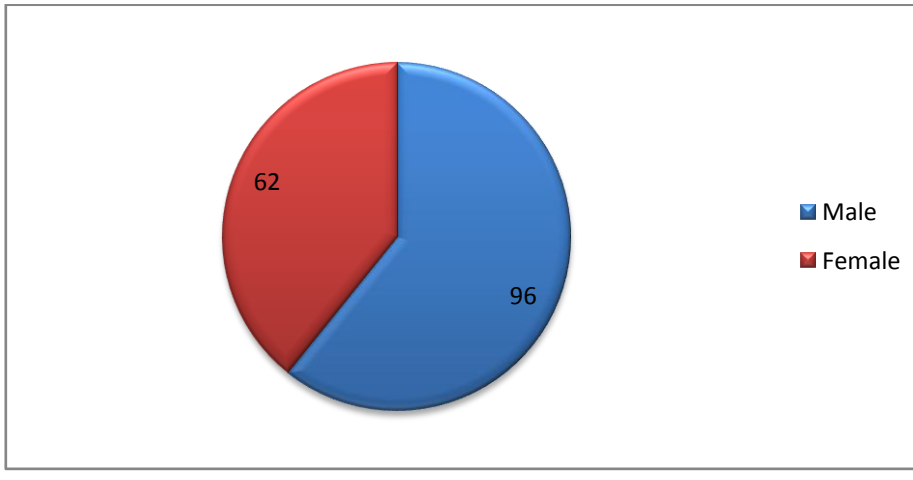
Figure 3.3 Respondent Demography (Age Group)



Source: Research data (2018)

Figure 3.4 below illustrate that of 158 respondents who participate in this study 60.80% of respondents are male and 39.20 are female.

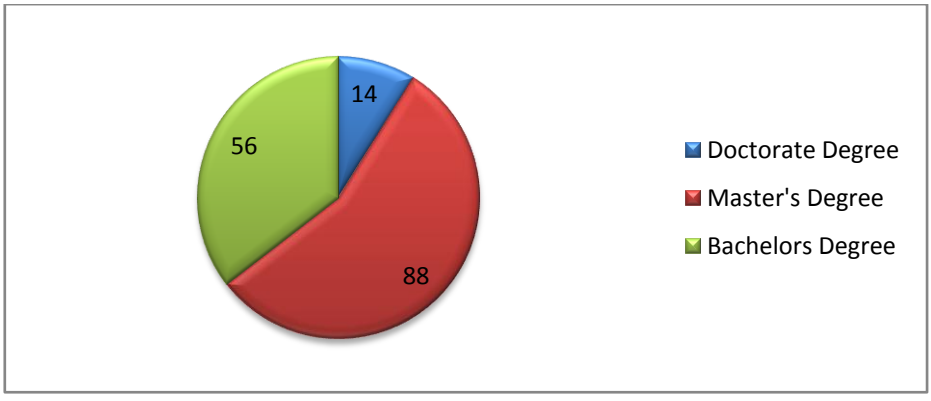
Figure 3.4 Respondent Demography (Gender)



Source: Research data (2018)

Given the sample size, respondents also can be classified based on their level of education. A number of 8.90% of respondents have PhD level of education, 55.70% of respondents have master's degree and 35.40% have Bachelor degree.

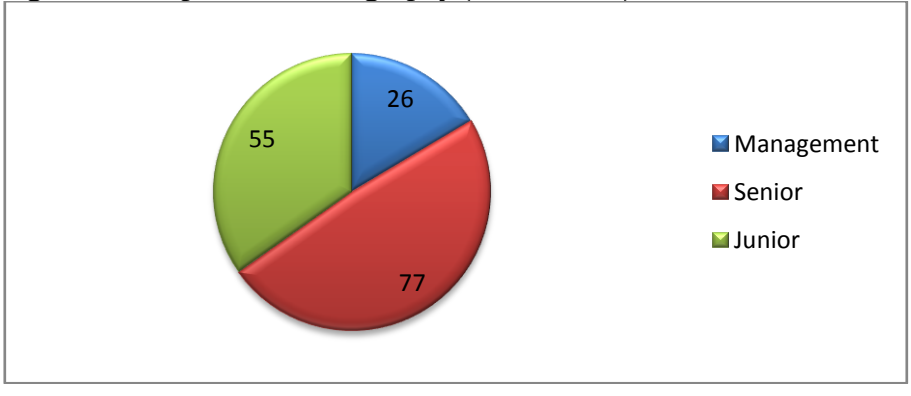
Figure 3.5 Respondent Demography (Education Level)



Source: Research data (2018)

The distribution of office rank was very vital in this study; figure 3.6 will show office rank of respondents from 158 respondents used in this study. 16.50% of respondent are from Management positions, 48.70% senior officers and 34.80 were junior officers.

Figure 3.6 Respondent Demography (Office Rank)



Source: Research data (2018)

3.7 Data Collection Methods

For the purpose of this study, the researcher will use both primary and secondary data.

a) Primary Data

In this part researcher collected data directly from respondents selected. There are several methods of collecting primary data. In this study the researcher chose two which are interview and questionnaire.

Interview

Researcher asked questions orally by using phone. This method was used because some of targeted respondents were heads of departments. Because of their busy schedules it was difficult to have time to fill questionnaire forms. The use of a phone also saved time.

Questionnaire

Researcher developed questionnaires and sent them to Tanzania by using emails for respondents to fill; and online questionnaires were used in order to have a wide range of respondents. Moreover, this method helped to control the focus of the study and facilitated analysis and interpretation of data.

b) Secondary Data

A primary data collection method has its limitation; for example; the distance between researcher and respondent can affect in certain ways data reliability. Researcher used secondary data to add and increase the validity of the study by reviewing various reports concerning the study. Also, researcher reviewed different articles and reports concerning the topic chosen and visited three official websites in Tanzania; which are websites of Ministry of Education and Vocational Training, Ministry of Industry and Trade and National Bureau of Statistics. From this data researcher was able to increase the validity of the study through documentary review.

3.8 Measurement of Variables

Babbie (2013) defines measurement as careful and deliberate observation of real world for the purpose of describing objects and events in terms of the attributes composing a variable. For the purpose of this study researcher used a **likert scale** for an overall measure of responsiveness of university education to the requirements of industry management in Tanzania. Then narratives, frequencies and relative frequencies have been used to rate contributions from key stakeholders of the research problem; namely, university lecturers, graduate employees and graduates' employers.

3.9 Data Analysis Procedure

Descriptive or qualitative analysis has been used to analyze as appropriate. 'Content analysis' has been used on pieces of communication found in secondary data and 'descriptive statistics' ratings in terms of response percentages on categories of strategies tenable in Tanzania for making higher education available to management needs of Tanzanian productive operations. Processing the research around the government sector has laid a practical ground for nation-wide policy guidance on strategies tenable for complying university graduates with economic development enterprises in Tanzania.

CHAPTER FOUR: RESEARCH RESULTS

This chapter shall present and analyse data received from respondents against questionnaires, interviews and documentary reviews that were applied during the research study. Units of inquiry were as summarized under chapter three, item 3.6.

4.1 The Match between University Curricula and Corresponding Job Descriptions Related to University Graduates Working in the Public Sector in Tanzania

Table 4.1 contains 'totals on the number of courses providing certain learning attributes matched with totals on the number of items from job descriptions that require the same learning attributes for graduates in the public sector of Tanzania.' The 'number of courses' contained in the university degree transcript and the 'number of items from a job description' belonged to the **same** university graduate for each pair of comparison. This research instrument related to graduate employees alone of the operational three (3) clusters of respondents which also included employers of graduates and university lecturers by the time of this research.

Surely, it was not going to be realistic to study higher learning education effectiveness without contacting students of higher learning themselves; of the three main centres of inquiry, respondents who were sitting in the role of 'employees' or 'subordinates' to heads of departments or directors or commissioners were the more convenient to remind of their university days as students than their immediate supervisors whom the researcher assigned the role of 'employers to graduates.' But there was another even more important reason to include employees who were also graduates; namely that they were

in a position to **relate** their university education coverage to the jobs that they were doing in the public sector; and this was the very nomenclature itself of this research project that sought to assess the responsiveness of higher learning education to potential employment in Tanzania, focusing the public sector.

Table 4.1 column (c) contains individual courses or subjects counted from all transcripts held by eighty (80) employees who were also graduate respondents; six (6) of employee respondents did not respond to this part of the questionnaires because it was not sent to them by error. Column (d) of Table 4.1, on the other hand, contains counts of individual job tasks in individual job descriptions from all responding graduate employees. The most interesting part of Table 4.1 is, of course, the **match** between the 'learning attributes' provided by **courses** or subjects contained in the transcript as contained under column (c) and the **demand** for the same learning attributes in graduate employees' job requirements as contained under column (d).

Table 4.1 Totals on the Number of Courses Providing Certain Learning Attributes Matched with Totals on the Number of Items from Job Descriptions that Require the Same Learning Attributes for Graduates in the Public Sector of Tanzania

Items (a)	University Learning Attributes (b)	Scores on the Number of Courses (c)	Scores on the Number of Items in the Job Descriptions (d)
1.	**General** knowledge	292	312
2.	**Usable** knowledge in the job	289	317
3.	**General** skills	276	320
4.	**Usable** skills in the job	286	314
5.	**Attitudinal** skills	264	306
6.	**Totals**	**1407**	**1569**

Source: Research data (2018); based on eighty (80) graduate employees' questionnaire responses from the public sector.

There was no way the researcher could have disregarded actual and specific university education curricula and actual official job schedules of university graduates without risking this research being brushed aside as a mere generalization and profoundly short of rigour; difficulties of putting measurement on the variable of comparison or otherwise, this 'bull' of 'comparison measurement' between curricula and job descriptions' words rather than numbers had to be 'grabbed by the horns!' The **ideal** and perfect **match** between a university graduate's curriculum and the job he or she is employed in after graduation is when their university content on, say 'usable skills;' that is, skills learnt at university that are actually being used at work; are needed by an **equal** number of items on their job descriptions; of course, nobody 'expects' this ideal match to happen, even if we were dealing with vocational training situations. A nation, however, including the United Republic of Tanzania, has a right to require that higher learning education curricula be, at least, **relevant** to the nature of employment found in a country that would require educational qualifications of a university graduate.

In the event of a single university graduate, **transcript counts** for their university curricula, along the structure of **learning attributes** contained in Table 4.1, would **match counts** contained in their **job description** that require the **same** learning attributes, in the ideal case. This match would continue even if you added two (2) more graduates or ten (10) or twenty (20) or fifty (50) or any number! This being the case, it is now possible to match counts in column (c) to those in column (d) of Table 4.1 and use the results to infer on the extent of comparison between university education and job personnel needs for the public sector in Tanzania! Quite frankly, remembering the genuine scepticism of the major supervisor to this research study about the 'difficulty' in measuring the comparison between curricula and corresponding

job content during the research proposal stage, this is like a moment of Eureka!

We are not yet there, however; all transcripts and corresponding job descriptions had different numbers of items to count; that is, the numbers of courses in all curricula that have been sampled were different to the numbers of corresponding job description items. To be able to compare them therefore, the researcher has had to apply what in research is called 'data transformation' so as to put counts on both sides in 'equal relative sizes.' Table 4.1 columns (c) and (d) therefore shall be transformed into **percentages** of their related totals so that a quantitative comparison between the two columns can be made.

If the 'fit is good' between column (c) and column (d) of Table 4.2, that is, values in the columns are **statistically** of 'equal' magnitude, the conclusion will be that curricula content in universities of Tanzania are very much comparable to the job requirements in the Tanzania public sector; should the 'fit be bad' where values in column (c) and column (d) are substantially different, then the conclusion shall be that higher learning education in Tanzania is, indeed as feared, not related to job needs in Tanzania, at least as far as the public sector is concerned.

Table 4.2 Assessing the *Match* between Curricula Contents and Related Job Descriptions for University Graduates Serving in the Public Sector in Tanzania

Items (a)	University Learning Attributes (b)	Percentages of Scores on the Number of Courses Providing Indicated Learning Attributes (b) in University Curricula (c)	Percentages of Scores on the Number of Items in the Job Descriptions Held by Individuals Awarded University Transcripts that were Used to Generate Percentages of Scores in (c) and Requiring Matched Learning Attributes in (b) (d)
1.	**General** knowledge	0.21	0.20
2.	**Usable** knowledge in the job	0.20	0.20
3.	**General** skills	0.20	0.20
4.	**Usable** skills in the job	0.20	0.20
5.	**Attitudinal** skills (courses assisting graduates to like their jobs)	0.19	0.20
6.	**Totals**	**1.00**	**1.00**

Source: Table 4.1 with columns (c) and (d) transformed into percentages of related totals.

4.2 The Structure and Aggregate Frequencies on Areas of Study Considered Missing in Executing Job Descriptions in the Public Sector of Tanzania for University Graduates

When graduate employee respondents in the public sector of Tanzania reported that their higher learning education was adequately related to their job tasks, they did not mean that there was a **perfect** match between the two; the responsiveness of higher education to employment activities is 'quite adequate' but not 'completely adequate.'

Employee respondents acknowledged that there were some 'missing' areas of learning in their university education in relation to the jobs that they were doing; in all categories of learning attributes used by the researcher for this study; namely, general knowledge for things they knew from their university education program but were not using in their jobs, usable knowledge for things they knew from university study and were using in their jobs, general skills for abilities they learnt from university but were not using in their jobs, usable skills for abilities they learnt from university and were using in their jobs, and finally attitudinal skills for their independent application on the jobs that they learnt from their university education.

Aggregate responses on 'missing' learning attributes on the job in all five areas of learning attributes adopted by the researcher, translated into broad courses or subjects of study, are contained in Table 4.3. Management is about prioritizing; if the universal tool of prioritizing; namely 'the ABC analysis' which is also called 'the 80-20 Rule;' which states that only 20% of individual items account for 80% of results or value or even a '70-30 Rule' with similar interpretation; is applied here, items 2, 1 and 9, ranked in their order of 'value' or 'importance' which here is represented by weights or percentages, can be identified as areas of priority for the sake of improving university education responsiveness to employment requirements after graduation in the public sector of Tanzania.

Table 4.3 The Structure and Aggregate Frequencies on Areas of Study Considered Missing in Executing Job Descriptions in the Public Sector of Tanzania for University Graduates

Items (a)	Areas of Study (b)	Frequencies of Occurrence in Data (c)	Relative Frequencies (d)
1.	Economics with Research and Finance	31	0.109
2.	General Management	96	0.339
3.	Business Initiation, Development and Trade Administration	17	0.059
4.	Public Sector Management	16	0.056
5.	Laws	14	0.049
6.	Management of Psychology	26	0.092
7.	Research, Data Management, Information and Communication Technology and Development	15	0.053
8.	Specialist Courses, Working Hard and Sacrificing	26	0.092
9.	Participatory Training Methods	29	0.102
10.	Field attachment Training	14	0.049
11.	**Totals**	**284**	**1.000**

Source: Research data (2018); based on eighty (80) questionnaire respondents of graduate employees working in the public sector; some units of inquiry provided more than one (1) area of study while others did not volunteer any response.

Together, these areas of learning account for [(33.9+10.9+10.2) = 55%] of all areas of learning gaps. A review of Table 4.3, however, reveals an apparent split between relatively 'high weight' areas and those that are relatively 'low weight' areas; namely items 2, 1, 9, 6 and 8 on one hand as high weight areas and items 3, 4, 5, 7 and 10 as low weight areas. Items 2, 1, 9, 6 and 8, in their order of weight or 'value' account for (33.9+10.9+10.2+9.2+9.2) = 73.4% weight of all the areas of study needed. While items (3+4+5+7+10) account

for 26.6% weight of all areas of learning in Table 4.2. The reorganizing of data in Table 4.3 has created a '73.4-50 Rule;' that is, 73.4% of the 'importance' in missing areas of learning attributes has been accounted by 50% of the range of areas of learning deemed by university graduates working in the public sector of Tanzania as missing to fulfill their job descriptions. The distribution of 100% into As, Bs, Cs, and even Ds and Es in 'the 80-20 Rule' is allowed to be flexible, to a point even of A1, A2, B1, B2, B3, C1, C2, D, classifications.

4.3 The *General* Assessment of Responsiveness by Immediate Stakeholders (Employees, Employers and University Lecturers) for University Education Responsiveness to the Personnel Requirements for the Public Sector in Tanzania

All three main clusters of respondents were asked, first of all, to make a **general** assessment of the university education responsiveness in Tanzania to employment activities in the field; their aggregate (from all three (3) clusters) responses are contained in Table 4.4 based on a robust sample size of 143 respondents.

Table 4.4 Aggregate *General* Assessment by Graduate Employees, Graduates' Employers and University Lecturers of the Responsiveness of University Education to Public Sector Staffing Needs in Tanzania

Items (a)	Assessments (b)	Assessments' Frequencies in the Data (c)	Relative Frequencies (d)
1.	Excellent (5)	12	0.084
2.	Good (4)	80	0.560
3.	Fair (3)	43	0.300
4.	Poor (2)	8	0.056
5.	Very Poor (1)	0	0.000
6.	**Totals**	**143**	**1.0000**

Source: Research data (2018); based on one hundred and forty three (143) questionnaire respondents who are immediate stakeholders to the Quality of University Education in Tanzania.

It is important to note that respondents were having more than the public sector in their minds when they were making their responsiveness assessment; certainly, university lecturers, 27 in all who were kind enough to put aside their university precious time to attend to research instruments from one of their former students, since these ones train on students for any and all potential employers, public, private or otherwise, and when they were responding to this research inquiry they were reporting their assessment on all of their students and for all employment areas in Tanzania and, indeed, even beyond; one of them responded with 'we provide a world-class education;' yes, university lecturers were not thinking about the public sector in Tanzania; they were thinking about the 'world' of potential employers to all of their past, present and future graduates.

It is also important to consider that the bulk of respondents, eighty six (86) in total, and sixty percent (60%) of the entire sample size being analyzed here, were graduates already working in the field; they were therefore able to make a real-life and first hand assessment of the research question. The researcher shall

use the ABC analysis here also to pass judgement on the 'priority standing,' for the sake of policy introduction, of the response categories that account for the 'A' weight of the ABC model. Looking at values in Table 4.4 and column (d), it is clear that responses 'good' and 'fair' account for [(56+30) = 86%] of total weight of all responses and therefore constitute a 'priority class' from respondents. The remaining responses account for [(8.4+5.6) = 14%] weight of the responses.

The fit between the 'priority class' assessments containing 'good' and 'fair' and the non-priority class assessment containing 'excellent,' 'poor' and 'very poor' is such a **bad** one; the two classes being so **different** in weight, thereby showing that the 143 respondents including the nearly graduated ones, their supervisors and university lecturers overwhelmingly assessed that university education in Tanzania was either 'good' (56%) or at least 'fair' (30%) in representing requirements of jobs available at least in the public sector.

4.4 Aggregate Factor Criteria for POSITIVE *General* Assessment of the Responsiveness of University Education to Public Sector Human Resources Requirements by Graduate Employees, Graduates' Employers and University Lecturers

It would be grossly irresponsible and a serious misrepresentation of the role of scientific enquiry by research to report that employment-responsiveness of university education in Tanzania is 'good' or 'poor' or 'somewhere in between' without searching for reasons basing such assessment, so that intervention efforts can be applied intelligently and resources used in intervention be invested with economy.

Table 4.5 contains reasons for giving a positive assessment on the public sector job-responsiveness of university education in Tanzania, 'classified' around their respective factors in a 'factor analysis' of research data. Many respondents, a sizable majority by 42.10% [(column (d) of item 6)], simply said there was no need of questioning the said responsiveness because, in general, higher learning education served staffing needs of the public sector well enough! So as to approximate the ABC analysis boundaries, items 2 and 3 of column (a) will add to item 6's weight of 42.10% by 15.79% and 14.04% respectively; achieving a total 'weight' or 'importance' or 'priority' of 71.93%.

Table 4.5 Aggregate Factor Criteria for POSITIVE *General* Assessment of the Responsiveness of University Education to Public Sector Human Resources Requirements by Graduate Employees, Graduates' Employers and University Lecturers

Items (a)	Assessment Criteria Factors (b)	Frequencies of Occurrence in the Data (c)	Relative Frequencies (d)
1.	A Bachelor's degree **level** is effective	7	0.1228
2.	**Curricula** are employment based	9	0.1579
3.	Caters for a wide range of **sectors**	8	0.1404
4.	Graduates' **performance** on jobs is adequate, **barring** the **experience** criterion	6	0.1053
5.	Positive **assessment** by formal national and international **institutions**	3	0.0526
6.	University education is **responsive** to related job needs in **general**	24	0.4210
7.	**Totals**	**57**	**1.0000**

Source: Research data (2018); based on one hundred and forty three (143) questionnaire respondents who are immediate stakeholders to the Quality of University Education in Tanzania; some volunteered more than one factor area for their positive assessment while others did not contribute any factor area.

This ‘cumulative’ weight (the ABC analysis particularly applies the ‘cumulating’ procedure) benefits from the flexibility on boundaries of ‘the 80-20 Rule’ which is here using a ’71.93-50 Rule;’ that is, 71.93% of ‘weight’ or ‘value’ or ‘importance’ has been accounted for by 50% of the ‘range’ of individual factor-classes in the table of reasons for giving a ‘positive’ assessment to the public sector jobs-responsiveness of university education in Tanzania. These priority factor-classes of reasons for the said positive assessment, apart from the ‘positive assessment in general,’ included also reasons that (a) curricula are employment-based and (b) that university education was able to cater for a wide range of sectors.

4.5 Aggregate Factor Criteria for NEGATIVE *General* Assessment of the Responsiveness of University Education to Public Sector Human Resources Requirements by Graduate Employees, Graduates’ Employers and University Lecturers

Where there are no problems, research is hardly needed; the researcher was therefore keen to learn of the reasons for a general sentiment from employers of university graduates, university graduates themselves and even university lecturers that higher learning education was, for some reason, not up to the requirements of job descriptions designed for university graduates. Table 4.6 contains data on how some people in Tanzania assess that higher learning education in Tanzania is short of its job requirements. Management cannot afford to work on all ‘issues’ known to planners; it has to prioritize; what then are priority reasons for concerns about higher learning education in Tanzania.

Table 4.6 Aggregate Factor Criteria for NEGATIVE *General* Assessment of the Responsiveness of University Education to Public Sector Human Resources Requirements by Graduate Employees, Graduates' Employers and University Lecturers

Items (a)	Assessment Criteria Factors (b)	Frequencies of Occurrence in the Data (c)	Relative Frequencies (d)
1.	Too **theoretical** and inadequate practical training	11	0.1803
2.	**Curricula** are **not matched** with job requirements such as the e-market and shifting national ecosystems	16	0.2623
3.	Inadequate university financial and equipment **resources** for teaching methodology balancing	3	0.0492
4.	The natural and cultural **environments** such as the language of instruction are not integral	3	0.0492
5.	Universities are **more** and more aiming for business **profit** than for graduates' quality	2	0.0328
6.	**Academics** are underperforming including the lack of national synergy in programs' design and execution	9	0.1475
7.	**Students** are not studious and of short trainability	4	0.0656
8.	Graduates have **failed to perform** upon their recruitment	1	0.0164
9.	University education is **not responsive** in **general**	12	0.1967
10.	**Totals**	**61**	**1.0000**

Source: Research data (2018); based on one hundred and forty three (143) questionnaire respondents who are immediate stakeholders to the Quality of University Education in Tanzania; some volunteered more than one factor area for their negative assessment while others did not contribute any factor.

Looking at Table 4.6 and column (d), one can see that respondents from all clusters prioritized items 2, 9, 1 and even 6 for bases of their concerns; namely that curricula are not matched with industry, a general belief that university education is not adequate, teaching methodology not supportive, and even that lecturers were not working hard enough. These four (4) priority items account for [(26.23% + 19.67% + 18.03% + 14.75%) = 78.68%]. The remaining areas of reasons account for the balance 21.32%.

4.6 Aggregate Factor Criteria for QUALIFIED *General* Assessment of the Responsiveness of University Education to Public Sector Human Resources Requirements by Graduate Employees, Graduates' Employers and University Lecturers

The researcher maintains that it will be of diminished value, academically and practically, to process these research findings while disregarding and skimping on proved management truths; certainly so when executing such a serious academic program as the one we are today running at Seoul National University; the Harvard of Korea! Why so? In so any cases of choice between 'positive' and 'negative,' between 'yes' and 'no,' between 'left' and 'right,' between 'centralization' and 'decentralization,' the best course of action is typically 'somewhere in between!' And so could be the adjudication on the degree of responsiveness of university education to public sector jobs in Tanzania; it might be neither 'responsive' nor 'irresponsive;' but rather a 'yes but' or even a 'no but' situation; where observers find qualified strengths or qualified weaknesses. The researcher shall therefore here analyse responses of those who said that higher learning education in Tanzania was responsive to a certain level but not responsive completely; by weighing their reasons for such evaluation. Table 4.7 contains data based on respondents who qualified

their 'positive' assessment; importantly, these qualifications were on positive and not negative views.

Table 4.7 Aggregate Factor Criteria for QUALIFIED *General* Positive Assessment of the Responsiveness of University Education to Public Sector Human Resources Requirements by Graduate Employees, Graduates' Employers and University Lecturers

Items (a)	Assessment Criteria Factors (b)	Frequencies of Occurrence in the Data (c)	Relative Frequencies (d)
1.	Responsiveness is only **in part** such as for 'some or several universities,' for 'some programs,' to 'some extent,' 'by 60 or 50 per cent,' 'somehow,' 'less than 100%,' to 'a larger extent,' 'occasionally,' to 'a low level,' 'mostly,' 'not maximum.'	15	0.8333
2.	Responsiveness to the national **'industrialization policy'** is not apparent.	1	0.0556
3.	Universities are **improving** when compared to some years in the past.	1	0.0556
4.	The level of responsiveness is **normal** to the world average.	1	0.0555
5.	**Totals**	**18**	**1.0000**

Source: Research data (2018); based on one hundred and forty three (143) questionnaire respondents who are immediate stakeholders to the Quality of University Education in Tanzania; some volunteered more than one factor area for their qualified assessment while others did not contribute any factor.

An overwhelming weight of 83.33% of these qualifiers responded with a '**partial**' approval. Even the class or 'sample' size (n) is so small at level 4; the weight of this partial positive qualification among likes is quite high statistically, leaving a complement of only 16.67%. These people, in their thought of qualifications, raised so important issues to Tanzania today; they alluded to the present government of Tanzania; specifically the President, His

Excellence Dr. John Pombe Magufuli; when they talked of the **ongoing** 'industrialization' policy and the fact that university training levels in Tanzania were **presently** 'improving,' referencing the **robust** governance levels that the running government in Tanzania has put in place.

4.7 Factors that Explain the Observed Level of Comparison between University Curricula and the Related Job Descriptions from the Public Sector in Tanzania

This research, above all else, as it would in all other serious researches, was based on policy conditions on the ground in Tanzania that led to doubts regarding the adequacy of university education in preparing graduates for existing jobs in various sectors of the Tanzanian economy, including the public sector; this research has addressed the public sector case. 'Research problems' in social sciences like this one address actual things that are happening in society that need reviewing so that change can be done should research data demand so; which then means that active participants should be identified for study and when research has been done these active or immediate stakeholders shall be required to review their policies taking research findings into account.

The immediate stakeholders are identified as sections in the society that are influencing the performance that defines and has led to the research problem; this performance reveals the factors of activities or actors or resources associated with the research problem. In this research these active and immediate stakeholders were (1) employees in the public sector who had graduated with university degrees not a long time ago (2) employers of employed graduates and (3) university lecturers themselves who were directly

responsible for graduates' education. Accordingly, the three actors have constituted terms of the 'analytical framework' and the 'conceptual framework' of this research.

4.7.1 Actions by Graduate Employees for Responsiveness of their University Education

Looking at Table 4.8, the 'relative frequencies' column, one sees clearly that no measure, at all, comes even just nearly close to the fact that when they were students, employees in the public sector responding to this research did nothing to prepare themselves for integrating their school curriculum with subsequent employment conditions. The government of Tanzania should take seriously that students when at universities do not generally reflect on the kind of employment related to their degree programs.

Table 4.8 Measures that were Taken by *University Graduates* now Employed in the Public Sector when they were at College so as to Support the Responsiveness of their Education to their Potential Employment

Items (a)	Factor Measures taken while Attending College (b)	Frequencies of Occurrence in the Data (c)	Relative Frequencies (d)
1.	Nothing	64	0.7805
2.	Attended a field attachment project	9	0.1098
3.	Worked hard on the program	5	0.0610
4.	Advised university staff to integrate requirements of the job	4	0.0488
5.	**Totals**	**82**	**1.0000**

Source: Research data (2018); based on questionnaire responses of eighty six (86) graduate employees based in the public sector.

4.7.2 Actions by Public Sector Employers of University Graduates so as to Support the Responsiveness of University Education to Public Sector Employment

From details of Table 4.9, the 'relative frequencies' column, like it was with the bulk majority of university graduates working in the public sector, by a huge majority their employers have had no plan for assisting in the reflection of public sector job needs by curricula offered by universities in Tanzania. The government of Tanzania needs to pay attention to the fact that employers in the public sector do not have a formal way of assisting the congruence between university education and public sector employment activities.

Table 4.9 Measures Taken by *Employers of Graduates* in the Public Sector so as to Support the Responsiveness of University Education to Public Sector Employment

Items (a)	Factor Measures taken by Employers (b)	Frequencies of Occurrence in the Data (c)	Relative Frequencies (d)
1.	Nothing	23	0.7667
2.	Share curriculum content employment compliance needs with universities	7	0.2333
3.	**Totals**	**30**	**1.0000**

Source: Research data (2018); based on thirty (30) questionnaire responses of employers of university graduates working in the public sector.

4.7.3 Actions by *University Lecturers* so as to Support the Responsiveness of University Education to Subsequent Employment Requirements

Based on contents in Table 4.10, university lecturers, by 29.63% of the 27 who reported, have been aligning their curricula to employment market needs; by another 29.63% they have been applying 'hands on practical teaching methods;' and yet as much as 25.93% of those who responded were sincere

and courageous enough to confess that they have actually been doing nothing to assist their students fit into the employment market. These three (3) strategies, including the 'do nothing' strategy have been their main and 'priority measures' in this regard; they total a 'priority weight' of 0.8519 or 85.19% while the remaining universities' efforts comprise a weight of 0.1481 or 14.81% which is shared by strategies of 'teaching, researching, consulting and publishing' and 'advising universities to upgrade curricula.' **It is true** that strategies used by university lecturers so as to comply their curricula to field industry job needs, should be **addressed** by the government of the United Republic of Tanzania.

Table 4.10 Measures Taken by *University Lecturers* so as to Support the Responsiveness of University Education to Subsequent Employment Requirements

Items **(a)**	**Factor Measures Taken by University Lecturers** **(b)**	**Frequencies of Occurrence in the Data** **(c)**	**Relative Frequencies** **(d)**
1	Nothing	7	0.2593
2	Teaching, researching, consulting and publishing	3	0.1111
3.	Advising the university to update curricula	1	0.0370
4.	Aligning curricula with employment market needs	8	0.2963
5.	Applying hands on practical teaching methods	8	0.2963
6.	**Totals**	**27**	**1.0000**

Source: Research data (2018); based on twenty seven (27) questionnaire responses of university lecturers serving at several universities in Tanzania.

4.8 The Standing of Potential Strategies for Complying Higher Learning Education with Job Requirements in Tanzania based on the Experience of the Public Sector

Based on the review of related literature, the researcher generated potential ways by which higher learning education in Tanzania could be aligned with needs of industrial activities including processes of the public sector. Table 4.11 contains the aggregate rankings; that is, rankings by all three (3) foundation clusters of data sources, consisting of public sector employees who are also graduates, supervisors to graduate employees here called employers and graduates producers namely university lecturers, combined. The duty of the researcher is to determine whether **research data**, respecting the empirical process, suggest that any of the proposed strategies for matching higher learning education to employment market needs in Tanzania could actually be adopted into public policy for achieving the same.

Table 4.11 Aggregate Standing of Potential Strategies for Complying University Education with Employment Requirements in the Public Sector of Tanzania according to Graduate Employees, Graduates' Employers and University Lecturers

Items (a)	Potential Strategies (b)	Total Scores of Strategies (c)	Weights of Strategy Scores (d)
1.	Responsible ministries to **directly** determine degree curricula contents	527	0.1113
2.	Joint researches between lecturers and industry executives	528	0.1115
3.	Potential employer executives to influence curricula contents	499	0.1054
4.	Potential employer executives to participate in classroom training	471	0.0995
5.	Professional independence of universities offering degrees	534	0.1127
6.	University trainers to maximize participatory training methods	539	0.1138

Items (a)	Potential Strategies (b)	Total Scores of Strategies (c)	Weights of Strategy Scores (d)
7.	Universities to focus on core programs and achieve rigour in their coverage	559	0.1180
8.	Enhance the field attachment component of the programs	551	0.1163
9.	University lecturers to do 'applied' research rather than 'basic' research	528	0.1115
10.	**Grand Total**	**4736**	**1.0000**

Source: Research data (2018); based on questionnaire responses of one hundred and forty three (143) stakeholders for the quality of university education in Tanzania.

Are there any 'priority rankings' in Table 4.11; of priority enough to deserve policy response? The measurement unit that puts the quantities of data in that table under a common denominator is the one used in the column titled 'weights of strategy scores' because these weights are actually percentages or 'relative scores' to the aggregate score from total scores on all potential strategies given by all 143 respondents. The weights in column (d) all fall between 9% and 12%; they are very comparable and respondents did not recommend any priority. Happily, we are able to prove that they are statistically equal for the purpose of Management priority setting. The researcher still would have concluded that strategies proposed for bringing about congruence between university education in Tanzania and employment human resources needs in the public sector are of equal importance.

But research data on strategy selection still contains an important aspect of prioritization related to this research problem; all groups of respondents have pointed attention to institutions of higher learning as having the key to the concern about the employability of university graduates in Tanzania. All the research building block clusters of enquiry have reported that the

responsiveness of university education to employment needs in Tanzania, according to the public sector sample, will depend **especially** on the performance of institutions of higher learning themselves.

4.9 Summary and consistence and inconsistence Responses to Interviews and Survey on the Responsiveness of Higher Learning Education to the Job Requirements in the Public Sector of Tanzania

Generally the respondents from interviews say the education provided in most universities has some challenges which cause the performance of employees to be very low.

1. Most of courses provided in universities do not fit the market demand because they are more theoretical which hinders creativity of graduates.
2. The review of various programs' curricula take too long while the market demand and global changes are fast; as the result universities continue to provide unskilled graduates.

3. The respondents show that in other side there are some courses provided in universities in Tanzania that are well prepared and curricula are well designed but the challenge is the students. This is related on how they are prepared in secondary schools and primary schools; secondary schools and primary schools need to be redesigned in order to produce competent students at university level.
4. Also respondents show that some university graduates are very good but the challenge is at work place; employer does not provide the working environment for them to provide excellent output. Respondents show that for employees to fit in job descriptions they need to be handled well in order to avoid stress and to be active; in other words, employee motivation is not proper.

5. Lastly, the respondents show that regular training for employees after been employed is very important; some graduates after graduation and been employed were very good. But after few years the competence drops because of lack of regular training to update their mind in various professional and attitudinal areas and to make them active to fit well in their job requirement. (One respondent says in her office there are some employees who since they have been employed 5 years ago they never attend any short training). The problem is that they have reached the maximum utilization of the knowledge they acquired at university; now they need some short courses to update their mind.

In this study item 4.1 to item 4.8 surveyed results and item 4.9 interview results it is clear that the study illustrate some degree of consistence and inconsistence from respondents between these two methods of data gathering. Three (3) clusters of respondents in these two methods show the responsiveness of higher learning education to employment requirements in Tanzania it is well to some extent. From the findings, respondent from both methods explain that the higher learning education in Tanzania fits to job requirement.

On other hand both ways manage to give result about the weakness available to higher learning institution Tanzania which results to incompetent graduates from colleges and universities. The most interested part is the way these respondents from these two methods, responds regarding the responsiveness higher learning educations to employment requirements. The respondents from surveyed findings show how higher learning education in Tanzania face some challenges which make it to be not that much effective in providing accurate graduate to fit with job requirement. But respondents from interview give addition information regarding working environments, it is well seen that both survey and interview give the result that to a certain degree quality of graduates

from university it is not satisfactory as per job requirement. But interviewee respondents provided a new idea regarding working environment.

In their result show that those graduates who graduate with enough required knowledge after been employed they lack continuous train which make them after a certain period of employment to lack quality of fitness to job requirements. Also they talk about the way students are prepared before entering the university or college, respondents demonstrate that the issue of good curriculum at university level it is not enough factor for students to be trained and to fit to the job requirements. The way students are prepared during early stage in secondary school is very important, if students they don't have good secondary school education it will be difficult for them to understand well the university education for them to fit for job requirements.

It is clearly seen from the results of this study that survey finding and interview findings has some similarities and difference of findings from respondents, this is very vital because it is in reaches this study and increases the validity of the study findings these two ideas will be incorporated in the following discussion.

CHAPTER FIVE: DISCUSSION

This chapter shall discuss on and describe implications of the research findings obtained in chapter four through research data analysis.

5.1 The Match between Higher Learning Education and Job Requirements in the Public Sector of Tanzania

It was always going to be difficult to try and make a strict item to item match between items of courses or subjects in a university academic transcript of an individual and items on the same individual's job description; clearly underlining the worries of this researcher's major supervisor, talked of earlier. Courses or subjects in university academic transcripts are themselves highly condensed summaries of what individuals actually studied at a university; job descriptions are different from person to person even among those who studied at common universities and for common degrees, depending on where they eventually got employed; some job schedules are abstracts while others are detailed.

And then there was the challenge of ensuring common definitions for 'learning attributes' structured into 'general knowledge,' 'usable knowledge in your job,' 'general skills,' 'usable skills in your job,' and 'attitudinal skills in your job' The researcher is gratified in that he had opportunities to take calls from many respondents seeking clarifications on the meaning of the various words and terms and on what was actually required of them; instruments were redesigned to ensure adequate communication between the researcher and research respondents. The reader should be able to understand the amount of relief that the researcher felt when one of the respondents said

of the reason for his/her assessment that university education in Tanzania was responsive to their job needs as 'because I have understood what is asked;' confirming that he/she had understood the research questionnaire!

Certainly then, it has been a great privilege to the researcher to be given this opportunity by Seoul National University to participate in this ground-breaking study following a general national concern over the adequacy of university education in Tanzania; it has brought together every kind of degree in Tanzania; medicine, teachers, law, lands, community development, Engineering, agriculture, and more! The breadth of specializations was helped by the fact that the study was made on the public sector, which coordinates every other sector. And, most importantly, these research results are firmly anchored on the Tanzanian ground of higher learning education!

Looking at values in Table 4.1 and Table 4.2, it is clear that values in columns (c) and (d) are very much comparable! In Table 4.2 see how the 'transformed' percentage values in both columns are actually equal; not just in statistical terms but actually even in absolute terms. Even before any statistical application on the data, it is clear that public sector graduate employees consider the university education they received as substantially relevant and matched with their employment job requirements.

To obtain a value that suggested policy changes in the way higher learning education is run in Tanzania, values in column (c) should have been substantially higher than values in column (d) thereby suggesting that higher learning education in Tanzania was providing learning attributes in knowledge, skills and attitudes more than was needed in the field of the public sector; or values in column (d) should have been substantially higher than values in column (c) to suggest that knowledge, skills and attitudinal skills'

requirements in public sector jobs were not being taught adequately to higher learning students in Tanzania; in both cases values being represented as percentages, as a 'transformation' of raw absolute data so that numbers in transcripts could be compared to numbers in job descriptions.

These research results then, reflect responses from respondents, who opined that the responsiveness of university education to job processes in Tanzania was, for example, 'excellent' (12 of the respondents) or even those eighty (80) who said it was 'good' or the 42.10% who said there was not even a justification to doubt the degree of responsiveness or the words of four lecturers who said the curricular were well designed by aligning them with industry, or the six (6) respondents who said graduates were doing an adequate work once employed. It is useful to also note that while 42.10% gave a general approval only 19.67% gave a general disapproval.

The **implications** then are that Tanzania should listen to the 'somewhere in between' voice who said 'the level of responsiveness is normal to the world average;' and take comfort from the results of this research that their university education curricula actually do address job requirements in a 'world normal' level, not only in the public sector, but actually across all sectors as indicated by at least 14.04% of respondents captured in Table 4.5. Any investment for the sake of improving the said responsiveness should take cognizance of the fact that any deficiencies are not across the board and should be particularized; remembering the all important 'somewhere in between' dominant strategies in voices like "responsiveness is only in part for 'some or several universities,' for 'some programs,' to 'some extent,' 'by 60 or 50 per cent,' 'somehow,' 'less than 100%,' to 'a larger extent,' 'occasionally,' to 'a low level,' 'mostly,' 'not maximum.'

5.2 Areas of Study Considered Missing in Executing Job Descriptions in the Public Sector of Tanzania for University Graduates

Respondents, accordingly, acknowledged that they needed some more input from their respective degree programs so as to fully cover their job descriptions. Such areas of study included 'strategic management,' 'participatory decision making,' governance skills, 'management skills,' 'motivational skills,' 'human resources management courses;' looking at Table 4.3 you can see that there was an outpouring on areas related to 'General Management,' 33.9% of all occasions of indicating areas of study needed. The next popular area of needed learning was 'Economics with Research and Finance;' accounting for 10.9% of the areas' popularity. Here were subjects like 'entrepreneurship skills,' 'project planning and management, entrepreneurship, financial management,' 'public finances,' 'auditing,' 'resource mobilization,' economics for beginners,' 'monitoring and evaluation,' 'payroll preparation skills,' 'policy analysis,' 'project management,' 'policy evaluation.'

The next area of popularity of learning considered by respondents as missing against their job tasks and part of priority areas in statistical terms was 'Participatory Training Methods,' which was, in fact, not an area of study but a call for changes in university teaching methodology; as much as 10.2% of mentioned limitations in competences at work was assigned to teaching methods. This is very clear from a respondent's remarks when he/she said 'general knowledge is important which is mostly available in most university programs but then the teaching is maybe that needs to be improved.'

Two more areas qualified for 'priority areas,' namely 'Specialist Courses, Working Hard and Sacrificing' for one and 'Management of Psychology' for the other; each one of them accounting for 9.2% of popularity of demand. Courses mentioned as omissions in specific degree programs were grouped under the study area 'specialist courses;' and because of the 'specific program' idea under 'specialist courses,' the researcher grouped with 'specialist courser' the important and quite rare internal commitment of one respondent who said what could be missing during the stay at a university was students' lack of 'hard work and sacrificing;' echoing a response from one university lecturer who said higher learning education responded to job needs only 'fairly' because students 'did not care about the reality' of them needing to work hard so as to improve their subsequent fit into job positions.

In the area of 'management of psychology' respondents said that they needed training in things like 'perception,' 'psychology,' 'personality based,' 'general psychology,' 'how to behave when addressing the Court.' All the 'priority missing' areas of study in the respondents' higher learning education for executing job descriptions, and even the non-priority areas, have one thing in common; they are all related to matters of operations in the day today activities of typical government departments; General Management, Economics and Finance, and Participatory Training Methods during university studies.

Even a respondent who advised that students while at university should 'work hard' and 'sacrifice' other things so as to acquire as much learning as possible, was relating such hard work and sacrificing to the capacity to transfer ones knowledge to practice. To verify the concern for running operations in a typical government department usually having many projects, consider a respondent who said he/she needed to study 'management courses

in biomedical degrees;' this respondent studied and works in a medical area; and yet he/she now wants a 'management course' so that she/he can actually be able to run his/her office by planning, organizing, staffing, directing and control! In many professions though, the 'management' part is usually emphasized at postgraduate level.

This question on 'what more courses or subjects would you have liked to study' in your university program exposed the researcher a lot since it was open-ended; to demonstrate this instruments design risk in terms of a potential 'crowd' of ideas, consider the response of one of them where he/she said of needed areas of study that 'most of things are relatable;' that is, there are many, many, areas of study that could be seen as relevant to what she/he was doing.' After a careful review of needed areas, a 'classification' process was possible and Table 4.3 was possible to construct. For purposes of management the most useful characteristic about this variable was that respondents were able to isolate 'priority areas' in statistical terms, paving the way for policy considerations.

The **implications** are that training in class should simulate practical problems in the field as much as theoretical curricula runs. General Management should be put in undergraduate curricula for demonstrating how the management process works in respective degree programs. Students at universities should be made to work hard and those who do not cooperate should be removed from programs. The process of annual plans for government departments and how a specific function represented by a specific degree program fits in should be covered in every degree program.

5.3 Responsiveness of University Education to Public Sector Staffing Needs in Tanzania

An overwhelming eighty six percent (86%) of all 143 respondents made a **general** assessment that the responsiveness of university education in Tanzania was either 'good' or 'fair;' [(apart from the non-priority (that is, the minority) assessment by 8.4% who said responsiveness was 'excellent')]. These 'priority ratings' (good and fair), as can be seen in Table 4.4, were on account of 42.10% of the reason, among other reasons of positive rating, that there was no need for doubt, 15.79% of the reasons for positive rating who said curricula was employment-based, and 14.40% of the reasons for positive rating who said the education catered for a wide range of sectors. And yet 26.23% of the reasons for negative assessment were that curricula were not employment-based! While 19.67% of the reasons for a negative rating were that 'without doubt' it was irresponsive. While 18.03% of the disapproving assessment reasons are saying teaching is too theoretical.

The **implications** are that difficulties of higher learning compatibility with industry in Tanzania, including the public sector, are not a 'black and white' picture. Coming to policy requirements, the weight of prioritized approval responses, at 71.93%, is less than the weight of prioritized disapproving responses at 78.68%. To recapitulate, the 'somewhere in between' responses, those who qualified their positive assessments have an important place in strategizing for improving the responsiveness of higher learning education to the technology mix of enterprises in the country. Let the country look for the specific levels of 'partial responsiveness' and calibrate the interventions from there for the right way.

5.4 Factors that Explain the Observed Level of Responsiveness of University Education to Job Requirements of the Public Sector in Tanzania

Although by a majority of 29.63% university lecturers did well to align curricula with employment market needs and by the same weight of 29.63 adopted hands on practical teaching methods, from Table 4.10, so as to assist their students to link their university education with work places, these commendable efforts to support higher learning education employment-responsiveness are overshadowed by, simultaneously, as many as 25.93% of other lecturers confessing that they were doing nothing to support their students to prepare for employment responsibilities. It should not happen, at any university and in any university program that lecturers abandon their professional and vocational obligations to equip their students with learning attributes needed by their expected occupations which is always university students' next logical step in life; preparing students for job situations by university lecturers should not be an optional extra service by lecturers; it should because it is one of a university lecturer's minimum duties.

The university lectures' cluster of respondents, certainly not surprisingly, at least had a significant weight among other strategies they were doing (taking certain responsiveness strategies to priority level) so as to comply education that they were providing with work environments. The other two clusters of graduate employees together with their employers literally were doing 'nothing' to promote the responsiveness being assessed; when they were at university graduate employees reported that by 78.05% of them they did 'nothing' to prepare themselves for employment after graduation, as reflected in Table 4.8. Regarding employers of graduates 76.67% of them were doing

‘nothing’ about support to universities so that the latter could produce for them work-friendly graduates, according to data in Table 4.9.

Where university students are doing so little; only in 21.95% of occasions of self-assessment on responsiveness efforts; and employers of graduates are also doing so little; only by 23.33% of those responding; coupled with 25.93% of respondent lecturers who also said they were doing ‘nothing,’ it is not expected that higher learning education in Tanzania was going to be responsive to industry occupational competences, including for the public sector, to a level beyond doubt; doubt was inevitable, which doubt prompted this research study.

The **implications** are that efforts for achieving a fit between university education and on the job work requirements, done by graduate employees, employers of graduates and university lecturers are not adequate. Whatever strategies were being attempted so far by any of the three conceptual framework-supporting groups should be continued; for universities, aligning curricula with employment market needs, applying hands on practical teaching methods, executing the standard university mission, and advising universities to update curricula; for students attending universities, attending field attachment projects, working hard on the programs, and advising university staff to integrate requirements of the job; for graduates employers in the field, share curriculum content employment compliance needs with universities.

And, abandoning the ‘do nothing’ strategy by every stakeholder in this very important national product and resource; namely, university graduates who are ready and able to process industrial operations, public, private, national or international; one respondent observed that; ‘job requirements should go hand

by hand with globalization;' and yet another one observed that; ' help students think locally but act internationally.'

5.5 Potential Strategies for Complying Higher Learning Education with Job Requirements in Tanzania based on the Experience of the Public Sector

Respondents to this research; all the three (3) clusters of pillars of this research conceptual framework did not select any of the proposed strategies for converging university education with workplace competences' requirements. They scored all the nine (9) strategies as equal; both visually and, more importantly, for purposes of policy choice, statistically; this can be seen from both Table 4.11. The researcher here would request to observe, that research when done faithfully and in respect of the principle of 'randomization' in data gathering, will always tell truth! Respondents to this part of the research instrument, very likely acting instinctively and without talking to each other, were simply saying through their responses that for university education to truly align itself with industry, each of the proposed strategies would be very useful. Indeed, what the research instrument proposed, the research immediate stakeholders were already doing, every cluster in their own standpoint.

Looking at the paragraph on 'implications' under item 5.5.1 above, one would find similarities between what universities, graduate employees and employers of graduates were already doing and the proposed list of strategies advanced by the researcher, which covered; responsible ministries to directly determine degree curricula contents; joint researches between lecturers and industry executives; potential employer executives to influence curricula contents; potential employer executives to participate in classroom training;

professional independence of universities offering degrees; university trainers to maximize participatory training methods; universities to focus on core programs and achieve rigour in their coverage; enhance the field attachment component of programs; and university lecturers to do 'applied' research rather than 'basic' research.

And yet, there was another exciting output from responses on this section of university education responsiveness strategies; respondents recommended that, of the three main players for a solution to the challenge of matching higher learning education with related employment after graduation, universities should be given a leading role; Happily, university lecturers are ready for the leadership role; since they also assigned themselves this leadership portfolio!

Implications are that there is no needs for investing in training for purposes of educating stakeholders on the subject of this research since all stakeholders know what is required to get university students groomed for subsequent employment related to the subjects of their degree programs. Only a momentum is needed, coordinated by the Office of the President, Public Service and Good Governance, to bring immediate stakeholders together and get activities going. Universities will shoulder the bulk of the work, supported by a Memorandum of Understanding that will bring together all the relevant partners to a continuous management.

CHAPTER SIX: CONCLUSIONS

6.1 Research Summary

This research aimed to provide information on the extent of the problem leading to a general outcry around Tanzania, since the recent past up to today, among, especially, employers, public policy commentators and also higher learning education monitors in their capacities as government officers, of deficient higher learning education to the requirements of job markets in Tanzania, and thereafter, search for approaches that could ease on the alleged deficiencies, if confirmed by this research. A case study was therefore planned; to start with, of the public sector in Tanzania, so that based on research data from the public sector, conclusions would be made that would throw light on the actual nature of the alleged shortfalls of higher learning education in Tanzania, and also importantly, the actions that could be taken to ensure employment-responsive higher learning education in the country.

A total sample of 143 respondents were engaged by questionnaires; consisting of units of enquiry that the researcher knew had data necessary for processing the research problem; these consisted of employees who had graduated not a long time ago; their employers and university lecturers. Another smaller group of 15 respondents was reached by interviews. Research data was processed statistically by 'the regression analysis of goodness of fit' after organizing it into 'categories' that were assigned numerical response values.
Research has established that university education curricula in Tanzania are very closely related to knowledge, skills and attitudes needed by the public sector job routines. However, the responsiveness of university education to job requirements is not uniform. While some areas are well responded, others

are only partially responded while still others are having difficulties in getting university graduates that fit well in their job tasks. All three (3) clusters of key respondents have been trying to assist in making higher learning education in Tanzania support job processes, but responses have been on the low side. Research has shown that key players; the three (3) research data clusters used in this research; were able to identify strategies backed by literature on the subject, capable of matching university education to occupational needs in the country.

6.2 Conclusions of the Study

The study establishes that responsiveness of higher learning education to requirements of employment in the public sector and beyond in Tanzania is normal to the world average. Responsiveness of university education to job requirements is only in part differing from university to university, from program to program, from employment sector to employment sector, from student to student and from university lecturer to lecturer; hence the existence of courses or subjects considered as missing for the purpose of job descriptions' fulfillment.

All the 'priority missing' areas of study in the respondents' higher learning education for fully executing job descriptions, and even the non-priority areas, are related to matters of operations in the day today activities of typical government departments; General Management, Economics and Finance, Participatory Training Methods during university studies, Hard Work and Sacrificing for Lecturers and Students and Management of Psychology. The weight of prioritized approval responses, at 71.93%, is less than the weight of prioritized disapproving responses at 78.68%. The right status on

responsiveness therefore is of a positive approval which is also coupled with reservations.

In addition**,** Efforts made so far by graduate employees, their employers and university lecturers so as to align university education to requirements of related employment in the field are not enough. Sensitivity to explicit systems for the purpose of ensuring that universities truly deliver job-responsive graduates has not been apparent, if, as a university lecturer respondent said, new curricula take three (3) years to approve. The good thing is that strategies for relating university education to employment specifications of a university graduate level are well known in Tanzania.

6.3 Study Contribution

Tanzania should take comfort from the results of this research that their university education curricula actually do address job requirements, not only in the public sector, but actually across all sectors as indicated by at least 14.04% of respondents, as captured in Table 4.5. Any investment for the sake of improving the said responsiveness should take cognizance of the fact that any deficiencies are not across the board and should be particularized; remembering the all important 'somewhere in between' dominant strategies in voices like "responsiveness is only in part for 'some or several universities,' for 'some programs,' to 'some extent,' 'by 60 or 50 per cent,' 'somehow,' 'less than 100%,' to 'a larger extent,' 'occasionally,' to 'a low level,' 'mostly,' 'not maximum.'"

Training in class should simulate practical problems in the field as much as theoretical curricula runs. General Management should be put in undergraduate curricula for demonstrating how the management process

works in respective degree programs. Students at universities should be made to work hard and those who do not cooperate should be removed from programs. And so should their lecturers. The process of annual plans for government departments and how a specific function represented by a specific degree program fits in should be covered in every degree program.

Furthermore, let the country look for the specific levels of 'partial responsiveness' and calibrate the interventions from there for the right way. Whatever strategies were being attempted so far by any of the three conceptual framework-supporting groups should be continued. (a) For universities; aligning curricula with employment market needs, applying hands on practical teaching methods, executing the standard university mission, and advising universities to update curricula. (b) For students attending universities; attending field attachment projects, working hard on the programs, and advising university staff to integrate requirements of the job. (c) For graduates' employers in the field; share curriculum content employment compliance needs with universities. The 'does nothing' strategy should be abandoned as soon as possible by every stakeholder in this very important national product and resource.

Lastly, respondents unanimously endorsed responsiveness strategies that the researcher proposed to them from related literature; namely, (a) Responsible ministries to directly determine degree curricula contents; (b) Joint researches between lecturers and industry executives; (c) Potential employer executives to influence curricula contents; (d) Potential employer executives to participate in classroom training; (e) Professional independence of universities offering degrees; (f) University trainers to maximize participatory training methods; (g) Universities to focus on core programs and achieve rigour in their coverage; (h) Enhancement of the field attachment component of

programs; and (i) University lecturers to do ‘applied’ research rather than ‘basic’ research. Universities and institutes of higher learning shall lead the continuing task of complying university graduates with their subsequent employment requirements for knowledge, skills and wants.

6.4 Limitations

This research output has used data solely from the public sector appreciating that the public sector, through respective governments, determines the framework and structure of economic activities of any nation. It will be useful, however, to make another study that collects the opinions of the private sector.

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APPENDICES

Appendix 1: Questionnaire for Employers to Higher Education Graduates in Tanzania

My name is Amwesiga Anatory Kamihanda; I am a student at **Seoul National University**, the Republic of Korea, pursuing a Master's Degree of Public Administration. I am requesting for information to support my research on **"Assessment of the Responsiveness of University Education to the Requirements of Related Employment in a Country: A Public Sector Study on the United Republic of Tanzania."** Information provided shall be taken in strict confidence. Thank you so much!

---

1. The **responsiveness** to related employment execution requirements of higher learning education offered in Tanzanian universities and institutes **is** (Tick your choice from the corresponding bottom cells; where the value 5 stands for '**excellent**' responsiveness, 4 for '**good**' 3 for '**fair**' 2 for '**poor**' and 1 for '**very poor**'):

5	4	3	2	1

2. Briefly comment on the reasons for your rating, offering some suggestions if any:

_____
_____

_____
_____

3. As an employer or employers generally in Tanzania, **what have you done** to promote the related employment execution requirements' responsiveness of higher learning education in Tanzania? (Tick against your response or enter measures taken in spaces provided)

a) ☐ Nothing

b) Measures taken

_____
_____

4. Tick against the **degree of relevance** for Tanzania (from '**excellent**' practicality for 5, '**good**' for 4, '**fair**' for 3, '**poor**' for 2 to '**very poor**' practicality for 1), in respect of proposed '**responsiveness measures**' for making higher learning education responsive to related job requirements in Tanzania:

Items	Responsiveness Measures	Degree of Practicality Ratings				
1.	Government ministries to **directly** determine degree curricula contents	5	4	3	2	1
2.	Joint researches between lecturers and Potential employer	5	4	3	2	1
3.	Potential employer executives to influence curricula contents	5	4	3	2	1
4.	Potential employer to participate in classroom training	5	4	3	2	1
5.	Independence of universities offering degrees	5	4	3	2	1
6.	University trainers to maximize participatory training methods	5	4	3	2	1
7.	Universities to focus on core programs and achieve rigour in their coverage	5	4	3	2	1
8.	Enhance the field attachment component of the programs	5	4	3	2	1
9. (any other)	University lecturers to do 'applied' research rather than 'basic' research	5	4	3	2	1

5. Please provide respondent's demographic data relating to items requested below:

Demographic Items				
Age	…….. Years old			
Gender	Male		Female	
Level of education attained	**Level**	**Tick**		
	Bachelor Degree			
	Master's Degree			
	Doctorate Degree			
Office rank	**Rank**	**Tick**		
	Management			
	Senior			
	Junior			
Tenure of Employment	Permanent		Temporary	

Appendix 2: Questionnaire for University Lecturers in Tanzania

My name is Amwesiga Anatory Kamihanda; I am a student at **Seoul National University**, the Republic of Korea, pursuing a Master's Degree of Public Administration. I am requesting for information to support my research on **"Assessment of the Responsiveness of University Education to the Requirements of Related Employment in a Country: A Public Sector Study on the United Republic of Tanzania."** Information provided shall be taken in strict confidence. Thank you so much!

---

1. The **responsiveness** to related job requirements of higher learning education offered in Tanzanian universities and institutes **is** (Tick your choice from the corresponding bottom cells; where the value 5 stands for '**excellent**' responsiveness, 4 for '**good**' 3 for '**fair**' 2 for '**poor**' and 1 for '**very poor**'):

5	4	3	2	1

2. Briefly comment on the reasons for your rating, offering some suggestions if any:

_____
_____

_____
_____

3. As a lecturer in a Tanzanian university **what do you do** to promote the related job requirements' responsiveness of the programs you train in? (Tick against your response or enter measures taken in spaces provided)

a) ☐ Nothing

b) Measures taken

---

4. Tick against the **degree of relevance** for Tanzania (from '**excellent**' practicality for 5, '**good**' for 4, '**fair**' for 3, '**poor**' for 2 to '**very poor**' practicality for 1), in respect of proposed '**responsiveness measures**' for making higher learning education responsive to related employment execution requirements in Tanzania:

Items	Responsiveness Measures	Degree of Practicality Rating				
1.	Government ministries to **directly** determine degree curricula contents	5	4	3	2	1
2.	Joint researches between lecturers and Potential employer	5	4	3	2	1
3.	Potential employer executives to influence curricula contents	5	4	3	2	1
4.	Potential employer to participate in classroom training	5	4	3	2	1
5.	Independence of universities offering degrees	5	4	3	2	1
6.	University trainers to maximize participatory training methods	5	4	3	2	1
7.	Universities to focus on core programs and achieve rigour in their coverage	5	4	3	2	1
8.	Enhance the field attachment component of the programs	5	4	3	2	1
9. (any other)	University lecturers to do 'applied' research rather than 'basic' research	5	4	3	2	1

5. Please provide respondent's demographic data relating to items requested below:

Demographic Items				
Age	…….. Years old			
Gender	Male		Female	
Level of education attained	**Level**	**Tick**		
	Bachelor Degree			
	Master's Degree			
	Doctorate Degree			
Office rank	**Rank**	**Tick**		
	Management			
	Senior			
	Junior			
Tenure of Employment	Permanent		Temporary	

Appendix 3: Questionnaire for Graduate Employees in Tanzania

My name is Amwesiga Kamihanda; I am a student at **Seoul National University**, the Republic of Korea, pursuing a Master's Degree of Public Administration. I am requesting for information to support my research on **"Assessment of the Responsiveness of University Education to the Requirements of Related Employment in a Country: A Public Sector Study on the United Republic of Tanzania."** Information provided shall be taken in strict confidence. Thank you so much!

---

1. The **responsiveness** to related job requirements of higher learning education offered in Tanzanian universities and institutes **is** (Tick your choice from the corresponding bottom cells; where the value 5 stands for '**excellent**' responsiveness, 4 for '**good**' 3 for 'f**air**' 2 for '**poor**' and 1 for '**very poor**'):

5	**4**	**3**	**2**	**1**

2. Briefly comment on the reasons for your rating, offering some suggestions if any:

_____
_____

_____
_____

3. As a student of a university program in a Tanzanian university **what did you do** to promote the responsiveness of the university program you attended to the requirements of the job that you are now doing? (Tick against your response or enter measures taken in spaces provided)

a) ☐ Nothing

b) Measures taken

---

4. Tick against the **degree of relevance** for Tanzania (from '**excellent**' practicality for 5, '**good**' for 4, '**fair**' for 3, '**poor**' for 2 to '**very poor'** practicality for 1), in respect of proposed '**responsiveness measures'** for making higher learning education responsive to related job requirements in Tanzania:

Items	Responsiveness Measures	Degree of Practicality Ratings				
1.	Government ministries to **directly** determine degree curricula contents	5	4	3	2	1
2.	Joint researches between lecturers and Potential employer	5	4	3	2	1
3.	Potential employer executives to influence curricula contents	5	4	3	2	1
4.	Potential employer to participate in classroom training	5	4	3	2	1
5.	Independence of universities offering degrees	5	4	3	2	1
6.	University trainers to maximize participatory training methods	5	4	3	2	1
7.	Universities to focus on core programs and achieve rigour in their coverage	5	4	3	2	1
8.	Enhance the field attachment component of the programs	5	4	3	2	1
9.(any other)	University lecturers to do 'applied' research rather than 'basic' research	5	4	3	2	1

5. Please provide respondent's demographic data relating to items requested below:

Demographic Items				
Age	…….. Years old			
Gender	Male		Female	
Level of education attained	**Level**		**Tick**	
	Bachelor Degree			
	Master's Degree			
	Doctorate Degree			
Office rank	**Rank**		**Tick**	
	Management			
	Senior			
	Junior			
Tenure of Employment	Permanent		Temporary	

6. Matching University Curriculum with Requirements on the Job

Kindly, categorize items of your Academic Transcript (program courses) and those of your Job Description (your job duties and responsibilities) into the following **learning attributes** (transcript) and **learning attributes' requirements** (job description); some of the courses and job duties could have **more** than one category of a learning attribute or a learning attribute's requirement:

Academic Transcript

Items	Learning Attributes	Number of Program Courses
1.	**General** knowledge	
2.	**Usable** knowledge in your job	
3.	**General** skills	
4.	**Usable** skills in your job	
5.	Attitudinal skills (courses assisting you to **like** your job)	

Job Description

Items	Learning Attributes' Needed by Your Job	Number of Job Schedule Tasks
1.	Tasks benefitting from your university program **general** knowledge	
2.	Tasks benefiting from your **usable** university program knowledge	
3.	Tasks benefitting from your university program **general** skills	
4.	Tasks benefitting from your university program u**sable** skills	
5.	Tasks benefiting from your university program attitudinal skills (tasks you do because you **like** your job)	

7. Bridging the Job Requirements versus University Curriculum Gap

Please, suggest courses which if added to the curriculum of your university program would promote the match between the program curriculum and your job requirements:

Items	**Learning Attributes**	**Program Courses**
1.	General knowledge	1. 2. N
2.	Usable knowledge	1. 2. N
3.	General skills	1. 2. N
4.	Usable skills	1. 2. N
5.	Attitudinal skills	1. 2. N

Thank you so much!

_____END_____

국문초록

탄자니아 고용부문에서 요구하는 직무역량에 대한 대학 교육의 대응성 평가:

탄자니아에 관한 공공 부문 연구

Amwesiga Anatory Kamihanda

서울대학교 행정대학원

글로벌행정전공

본 연구는 탄자니아의 대학교 졸업생들이 고용부문에서 요구하는 직무역량을 위한 충분한 교육을 받고 있지 못하다는 우려에 기반하여 작성되었다. 본 논문은 탄자니아를 연구 대상으로 하는 사례 연구이며, 대학을 졸업한 고용인, 고용주, 대학 강연자로 구성된 158명의 응답 표본이 사용되었다. 또한 본 연구는 자기기입식 설문지와 온라인

인터뷰를 통하여 수집된 데이터를 기술적이고 정성적인 과정을 거쳐 분석하고 있다.

결과적으로 탄자니아의 대학 교육은 다른 여러 국가에서와 마찬가지로 대응성이 높은 것으로 나타났다. 몇몇 대학,프로그램, 고용 분야, 학생은 다른 나라보다 우수한 것으로 나타났으며, 표본 추출된 다양한 학위 과정의 커리큘럼은 고용인이 응답한 직무 내용항목에 매우 잘 대응되었다. 응답자들은 자신의 직업에 대해 충실하게 설명을 하기 위해 그들이 각각 필요하다고 생각하는 학문 영역을 지적했다. 직업 시스템에 대한 대학 교육 대응성의 현실적인 평가는 긍정적인 부분 중 하나이며 이것은 많은 나라들에게도 동일하다.

대학 수업과현장 업무 간의 효과적인 연계를 성취하기위한 고용인, 고용주 및 대학 강연자의 노력은 매우 미미하다. 졸업생들은 일반 정부 부서에서주로 잘 사용되는 기법들을 경영관리, 경제, 금융, 심리학 및 참여 유도적 수업을 통해 대학교에서 가르칠 필요성이 있다고 지적한다. 이 때 개입을 세분화하여 필요분야에 더 집중하여야 한다. 이미 적용하고 있는 방법들은 지속하고 강화하여야 한다. 강연자와 학생은

각자의 책무를 다해야 한다. 이는 학생들은 그들이 이후 행하게 될 직무에서 요구하는 전형적인 기술에 대한 교육을 받아야 하고 강연자는 수업에서 현실 적용을늘려야함을 의미한다.

주제어: 대응성, 대학 교육, 고용, 잠재 전략, 교육 과정

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