

Roles of Universities in Realization of Industrial Economy in Moshi Urban, Tanzania: The Case of Moshi Co-operative University

Bernadetha B Akaro¹, Dr. Demetria Mkulu²

¹District Academic Officer, P. O. Box 273, Tunduma-Momba, Songwe, Tanzania

²Department of Education Foundations, Faculty of Education, St. Augustine University of Tanzania, P. O. Box 307, Mwanza, Tanzania

Abstract— Universities are crucial agents of socio-economic development in any nation. They equip students with knowledge and skills which relate to industry, dissemination of knowledge and technical support to industry as well as fostering lifelong learning. Therefore, this study examined the roles of universities in realization of industrialized economy in Moshi Urban in Tanzania. It was guided by human capital theory. The study employed a descriptive research design. 84 students, 15 lecturers and 1 secretary of academic affairs were both randomly and purposively sampled to participate in the study. Questionnaire and interview were used to collect data. The questionnaire attained a Cronbach alpha coefficient of correlation of 0.70 which mean that it was reliable. Quantitative data were analyzed through descriptive statistics and qualitative data were thematically analyzed. The findings revealed that universities are linked to industrial economy and therefore charged with the role of conducting research, offering research courses and implementing projects to promote industrial development which is the cornerstone for successful industrial economy. The results of this study also indicated that in one hand the linkage between universities and industrial economy is not well realized due to a number of challenges, including inadequate resources, political interference, low support from university management and poor technology. On the other hand, the study found that adequate resources and curriculum reform to embrace practical education are among the available opportunities to empower universities towards realizing their roles in promoting industrial economy in Tanzania. The study recommends that the government of Tanzania should ensure conducive conditions and strategies to make universities excel in fulfilling their roles towards sustainable industrial economy.

Keywords— Role, universities, Realization, industrial economy.

I. INTRODUCTION

University is a form of higher education which has different roles to economic development of the nation. Sustainable improvement of the country, University strategies, declarations or action plans are very important since it is where curriculum are modified, campus operations, research, and extension of further education programs as well as concrete projects (Filho, Shiel & Paco, 2011; Christie, Miller, Cooke & White, 2015). Again, university involve in development through production of knowledge which relates to industry, dissemination of facts and provides scientific support to industry as well as fostering lifelong learning by engaging adults in the progression of acquiring knowledge and skills which are relevant to society (Otieno, 2013)

For example, In China, university played great role in provide high levels of knowledge for the production and other service activity (Liu, 2011). Where by other writers like Yogish (2006) assist on the investment in education that preserves returns in the form of skilled labor which leads to increased development and improved quality of life.

In Vietnam, universities deals with innovation for economic development by producing highly expert and scientific knowledge which help to realize different development and lead to national growth (Ndaruhutse & Thomson, 2016). Similarly, in Nigeria most Universities focused on scientific knowledge which is the main indicators for success full in technological and innovation (Efi, 2014)

Hence, Saptono (2018) recommends that there is need to have professional which are trained in university who plays the key roles in attain industrialization economy as well as development in another sector Ndalichako (2014) a study on the role of education for industrial development in Tanzania suggested that, there is a need to support the growth of both the institutional mechanisms and improving quality of course content as well as trainers. She argued that, the systems have to designed transformative impact of high potential for growth job creation and skills providers in industry development process. However, Ministry of Industry and Trade of Tanzania (MIT) (2012) observed that skills are the main determinants of production and technological capabilities since medium and high technological companies succeed in employing a large share of university graduate.

In fact, in 2000 The government of Tanzania (GOT) unveiled a wide-ranging and ambitious development plan aimed at transforming the country into a middle economy by 2025, characterized by harmony, good supremacy, high quality livelihoods, wealthy, and knowledgeable society, as well as a semi-industrialized and spirited economy. The GOT inspire to have universities which stress their roles in shaping potential technology by being the test bed for innovation and cultivating future generation which are becoming industrial expertise and filled up with skills and knowledge (Ministry of Science Technology and Higher Education, 1999). However, this study therefore intended at assessing the roles of universities in realization of industrialized economy in Moshi urban Tanzania.

1.1 Statement of the Problem

Higher learning Institution has different roles to economic growth of the nation in producing knowledge which relates to industry, dissemination of knowledge and provides technical support to industry as well as fostering lifelong learning (DeVries, 2013). This to say University is supposed to be the catalyst to industrial and economic development but in real sense all roles of university is not well address. According to Ndalichako (2014) argued that there is a need for expansion and modernization of our training institutions to match with the requirements of current technology as well as re-balancing both the number and skills relevance at all levels of education. But, the government of Tanzania is currently failed to addressing how national universities will contribute to realize the industrialization because still constrained that limit a capacity to provide the necessary inputs for effective teaching and learning in our institutions.

Not only that, data from entrepreneurship survey show that 40 percent there is inadequate skilled workforce as a major problem to productivity in many sectors due to the work ethics, communication, problem solving skill, shortage of workers with the right skills that led to failure. This is supported by Msola (2007) in the meeting called issues of higher schooling in Tanzania by saying that higher learning and its potential contribution to national development are not mentioned directly. There is the need to do so as early as possible because 2025 is not far and the implementation is supposed to start earlier. The current study need to investigate what university has to do through its roles to help Tanzania to realize the industrialization economy that why the researcher wants to carry study on the roles of universities in realization of industrialized economy in Tanzania.

1.2 Research Objectives

- i. To determine whether universities are involved in research and innovation that could lead to industrial economy.
- ii. To determine whether there is university-industrial linkage which foster industrial economy.
- iii. To explain the challenges hampering universities in implementing of their roles in fostering industrialization
- iv. To suggest the possible measures to promote universities in implementing their roles which foster industrial economy.

The findings would be very important as they help Universities for improving quality education provision relevant to industrial economy. Through this activities, Universities would be in position of ensuring constant curriculum, syllabus, supply teaching and learning materials, construction of infrastructures such that would help the lecturers and university students to acquire skills, knowledge, research and innovation needed for sustainable industrial economy.

1.3 Theoretical Framework

The current study adopted human capital theory. The theory was founded by Adam Smith beginning in 1776 (Sweetland, 1996). The theory state that individual and society derive economic development from investment in people in term of education because education is the prime human capital investment. Human capital theory stipulates that human capital is directly useful in the production process. It

increases the workers productivity in all tasks, though possibly differentially in different task and situation. The theory supports the investment in education especially higher learning because it is the place where skills of different work are guaranteed and in this study is the place where people are trained, the research is disseminated and new technology is guaranteed. In addition to that, the theory encourages the investment in human capital, but convincing application of human capital should be accompanied by critical qualification including being enrolled in higher education an individual must have the entry requirements. In other words, industrial economy requires highly qualified man power in terms of knowledge, skills, attitude and values.

II. MATERIAL AND METHODS

This is a second section of this study which focuses on the methodological aspects employed in this study. They include research approach and design, population and sample size, sampling techniques, Instruments of data collection, validity and reliability, and data analysis procedure.

Research Approach and Design

The study employed mixed research design in collecting both qualitative and quantitative data. This means that qualitative approach helped the researcher to analyze and interpret data in terms of words and to emphasizes the use of oral communication thus gives the respondents a chance to state their views and solution of the problem. The study employed descriptive design because is a fact finding investigation plan with adequate interpretation, with the consideration of method of collecting data which are observation, interview and questionnaire (Krishnaswami, 2003).

Population

Study Area and Rationale

The study was conducted at Moshi Co-operative University located in Moshi Urban district which is one of the seven districts which form Kilimanjaro region. The researcher choose this study area because of many higher education institutions that help the researcher to have variety of information concern the study and personal familiarity with the area influenced effective data collection.

Target Population

Target population is a group of members, objectives or items from which sample are taken for study (Kombo and Tromp, 2006). For that reason, the target population of this study was Secretary for Academic Affairs, lecturers and students.

Sample Size and Sampling Procedure

Kombo and Tromp (2006) define sample as a group in a research study from which information is obtained. Thus, a sample size is a group of individuals selected from the population for the intention of acquiring required information about the study. The current study used a total sample size of 100 respondents which comprised of 84 students, 15 lecturers and 1 secretary for academic affairs from Moshi Cooperative University. Lecturers and students were sampled through simple random sampling technique, and purposive sampling was used to sample secretary of academic affairs. These helped the researcher to obtain critical information to understand the phenomena.

Research Instrument

The researcher employed questionnaires and in-depth interview guide as methods of data collection. Questionnaires were used to collect information from all lecturers and students' interview guide was used to collect information from secretary of academic affairs.

Validity and Reliability

Validity is the degree to which results obtained from the analysis of the data actually represent the observable fact under study Mugenda and Mugenda (2003). In this study the researcher applied content validity to evaluate if the domain in instrument is applicable to the problem by give the questionnaires to expertise in the particular field. Thus, Cronbach's alpha value of $\alpha = 0.81$ was obtained means that the instrument was is reliable

Data Analysis Procedure

Yin (2011) defines data analysis as the process of taking notes about action and vivid images from the problem under investigation. Descriptive statistics were used to analyze quantitative data from questionnaires. The results were analyzed as frequencies and percentages and presented in tables. Additionally, qualitative data in this study was analyzed thematically. It involves the process of identifying the key themes and patterns in order to link concepts (Braun and Clarke, 2012).

III. RESULTS AND DISCUSSION

This section presents the findings of the study based on the objectives.

3.1 University Involvement Research and Innovation for Industrial Economy

Based on this research objective, it can be noted from table 1 that majority of the students at 71.4 percent rated that the university do not offer and only 28.6 percent of all students

agreed that the university offer research as a course of study. In contrast, all lecturers (100.0%) affirmed that universities offer research courses. Based on these findings it is hard to

conclude whether the university offer courses that foster research and innovation skills.

Table 1 Existence of Research Course of Study

	Students		Lecturers	
	Frequency	Percentage	Frequency	Percentage
Yes	24	28.6	15	100.0
No	60	71.4	-	-
Total	84	100.0	15	100.0

Source: Field Data (2020)

Similarly, the Secretary of Academic Affairs who participated in the interview expressed how university promotes experiences in research and innovation. He reported the presence of research course in studies though the content differs from one course to another depending on the curriculum.

show that majority of students with 53.6 percent and lecturers with 60.0 percent expressed their sentiments by taking note that the research course offered link to industrial economy rarely and somewhat respectively. That is to say, the potential of research courses offered by the university is not fully realized in influencing industrial economy.

Apart from that, respondents were asked to indicate whether research and innovation courses offered in different study programs link to industrial economy. The results in table 2

Table 2 Research Program Linkage to the Industrial Economy

Research course	Students		Lecturers	
	Frequency	Percentage	Frequency	Percentage
Somewhat extent	13	15.5	9	60.0
Rarely	45	53.6	6	40.0
Never	26	31.0	-	-
Total	84	100.0	15	100.0

Source: Field Data (2020)

3.2 Role of Universities in Fostering Industrial Economy

Based on this research objective, the findings are summarized in table 3 indicate that majority of the lectures and students agreed that universities play pivotal role in promoting industrial economy. These results from the

respondents, place Universities as the center for exchanging industrial goods. So, universities remain as a main concern for every individual in to establish business related activities where would like to help students and community members to meet their industrial goods.

Table 3 Roles of University in Industrialized Economy

	Students N=84			Lecturers N=15		
	Agree	Not sure	Disagree	Agree	Not sure	Disagree
University is a market place where goods are sold.	63(75.0)	9(10.7)	12(14.3)	10(66.7)	1(6.7)	4(26.7)
University provide expertise to produce goods.	59(70.2)	13(15.5)	12(14.3)	14(93.3)	1(6.7)	-
University produce research and innovation for industrial growth.	60(71.4)	14(16.7)	10(11.9)	15(100)	-	-
University act as agent in selling industrial goods.	55(65.5)	17(20.2)	12(14.3)	10(66.7)	4(26.7)	1(6.7)
University students involves in industrial production.	61(72.6)	13(15.5)	10(11.9)	12(80)	-	3(20.0)

Source: Field Data (2019)

These findings also collaborate with several studies. For example, a study conducted on the contribution of higher education to society's development by Mabelebe (2013) in South Africa found that higher education contributes educated and training people with high skills for the employment needs of public and private sectors. Similar results also were reported by Cloete et al. (2011) that higher education institutions have contribution on the production of highly trained human resources which tend to increase the economic development of the country. In support, Wicken (2007) affirms that technological development in industry is influenced by research and innovation done in universities. Therefore, universities have a great role in industrial economy as well as economic development.

3.3 Challenges Facing Universities in Enhancing Industrial Economy

The study sought to identify the challenges facing universities in realizing their roles in improving industrial economy. It can be noted from table 4 that universities fail to realized and implement roles towards sustainable industrial economy due to a number of challenges including inadequate funds, shortage of qualified staff in the area of industrial research and innovation, and political interference. These results would suggest that universities eager to implement programs that foster industrial economy but fail due to both internal and external factors.

Table 4.8 Challenges Limiting Universities in Fostering Industrial Economy

Challenges statement	Students				Lecturers			
	SA	A	D	SD	SA	A	D	SD
Higher education institutions face inadequate funds to meet its goals, mission and vision	43(51.2)	32(38.1)	9(10.7)	-	2(13.3)	-	1(6.7)	12(80.0)
Most higher education institutions face with shortage of sufficient qualified staff and poor support from management	65(77.4)	8(9.5)	11(13.1)		3(20.0)	1(6.7)	4(26.7)	7(46.7)
Most higher education institutions face poor research and quality assurance	53(63.1)	25(29.8)	6(7.1)		8(53.3)	1(6.7)	4(26.7)	2(13.3)
Higher education institutions face with poor creativity and priority	11(13.1)	63(75.0)	10(11.9)		6(40.0)	6(40.0)	2(13.3)	1(6.7)
Higher education institutions face political and administrative regime	46(54.8)	26(31.0)	12(14.3)	-	7(46.7)	4(26.7)	4(26.7)	-
Higher education institutions face insufficient numbers of high quality graduates	55(65.5)	-	29(34.5)	-	3(20.0)	2(13.3)	1(6.7)	9(60.0)

Source: Field Data (2020)

The results about the poor quality research are consistent with other reviews of research in the areas. For example, Cloete et al. (2011); Mohamedbhai (2011) and Jaja (2013) who found that inadequate research and quality assurance, loss of soul, unimplemented policy, curriculum mismatch and equity are the challenges that hinder higher education institutions in achieving its goals and objectives whereby at the end cannot strengthens knowledge and innovation capability that foster development of the nation. Issues of political interference and isolation are also reported by Patrick (2009) that lack of interaction between institution and government as well as increase in growth and financial issues

are the challenges that facing higher education in strengthening knowledge and innovation capability with economic development. The results of this study signify that for universities to prove an outstanding linkage to industrial economy, these challenges should be dealt proactively.

3.4 Overcoming Challenges Facing Universities in Enhancing Industrial Economy

Based on this objective, both lecturers and students were asked to provide their views on the methods that can be employed to empower universities so that they perform effectively in promoting industrial economy.

Table 5 Possible Ways to Curb Challenges Facing Universities in Fostering Industrial Economy

Item	Students		Lecturers	
	Frequency	Percentage	Frequency	Percentage
Provision of practical curriculum.	14	16.7	2	13.3
Encourage research and projects.	17	20.2	4	26.7
Foster practical training	27	32.1	4	26.7
Adequate resources	9	10.7	4	26.7
Students exchange program	8	9.5	1	6.7
Total	84	100.0	15	100.0

Source: Field Data (2020)

Results from table 5 indicate that, majority of the respondents reported that practical education, encouraging research and innovation programs and adequate resources have the potential to make universities more effective in enhancing industrial economy through research and innovations. These results reflect the findings of previous studies. For instance, The finding about the enhancement of practical training in higher education institution was also realized in a study by Drape et al. (2016) that strong management of the institution should be establish practical training, as well as more training to faculty by mentoring programs can be the solution to higher education institutions in Africa.

Additionally, focusing on the need of adequate resources, Suyra (2016) found that the finding about having enough resources as he established that the higher education institutions should haveadequate resources is the mitigation measures to overcome university problems in realization of industrialized economy in Moshi Urban. This shows that the Universities should have enough financial, material and man power resources so as to support the realization of industrial growth.

Results in table 5 indicate that universities should commence the University students exchange programs. The very rapid growth of the newly industrialized economies based on encouraging manufactured consumer goods. Thus, through academic exchange program might produce a structural transformation of export-oriented growth path. In line, Suyra (2016) who conducted a study on issues challenging universities, support the view that students exchange programs are the mitigation measures to overcome university

problems. It means that the Universities should establish the students exchange program with developed nations so as to acquire more knowledge and exposure for industrialized economy.

IV. CONCLUSION

Based on the findings of this study, universities are significant role models in fostering industrial economy. Therefore, they must be helped in one way or the other in their struggle to enhance critical minds in young generations through research and innovations. By doing so, implementation and realization of sustainable development goals by universities can be possible.

V. RECOMMENDATIONS

1. Government and the Ministry of Education should acknowledge the role of universities are playing for sustainable development and fund them.
2. The Government of Tanzania allowed the provision of industrial education and training programs from secondary to high education institution level.
3. Provide business development services, business counseling and training and industrial courses for those higher education institutions. This will include the training on the existence of poor government policies, taxation and licensing regulations for those Universities in order to make them more favorable.

REFERENCES

- [1] Braun, V., & Clarke, V. (2012). Thematic analysis. APA handbook of research methods in psychology. *Ed. Harris Cooper*, 55-71.
- [2] Christie, B. A., Miller, K. K., Cooke, R., & White, J. G. (2015). Environmental sustainability in higher education: What do academics think?. *Environmental Education Research*, 21(5), 655-686.
- [3] Cloete, N., Cloete & Pillay, T., & Pillay, P. (2011). *Universities and economic development in Africa*. African Minds.
- [4] DeVries, I. (2013). *Open Course Design and Development: A Case Study in the Open Educational Resource University* (Doctoral dissertation, Education: Faculty of Education).
- [5] Drape, T. A., Rudd, R., Lopez, M., & Radford, D. (2016). Challenges and solutions to higher education institutions in Africa. *International Journal of Education*, 8(1), 43-58
- [6] Efi, A. E. (2014). Synergy between academic research and industrialization: The search for development in Nigeria. *Human Resource Management Research*, 4(3), 69-74.
- [7] Filho, W. L., Shiel, C., & Paço, A. D. (2011). Integrative approaches to environmental sustainability at universities: an overview of challenges and priorities. *Journal of Integrative Environmental Sciences*, 12(1), 1-14.
- [8] Kombo, D. K., & Tromp, D. L. A. (2006). Proposal and thesis writing. Nairobi: *Pauline's publication Africa*.
- [9] Krishnaswami, R. O. (2003). *Methodology of research in social science*. New Delhi: Meena Pandey.
- [10] Liu, A. (2011). Unraveling the myth of meritocracy within the context of US higher education. *Higher education*, 62(4), 383-397.
- [11] Mabelebele, J. (2013). The contribution of higher education to society's development. Faculty of Humanities' Spring Lectures 2013 themed "South Africa Today: Issues, Challenges and Opportunities".
- [12] Mohamedbhai, G. (2011). Higher education in Africa: Facing the challenges in the 21st century. *International Higher Education*, (63), 20–21.
- [13] Msola, P. (2007). Issues of higher education in Tanzania-World Bank Group. Ministry of Higher Education, Science and Technology.
- [14] Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative & qualitative approaches*. Nairobi, ACTS Press.
- [15] Ndalichako, J. L. (2014). The roles of education for industrial development in Tanzania. *Minister of education science and technology*. <https://erb.tz> (retrived on 20.jan.2019).
- [16] Ndaruhutse, S., & Thomson, S. (2016). Literature review: Higher education and development. *Institute of development studies*, Oslo.
- [17] Patrick, M. P. (2009). Perspectives on higher education in Africa: Fieldnotes on trends, themes, challenges and opportunities. *Ufahamu: Journal of the African Activist Association (Online)*, 36(1), 1-10.
- [18] Saptono, A. (2018). Entrepreneurship Education and Its Influence on Financial Literacy and Entrepreneurship Skills in College. *Journal of Entrepreneurship Education*.
- [19] Sweetland, S. R. (1996). Human capital theory: Foundations of a field of inquiry. *Review of Educational Research*, 66(3), 341-359.
- [20] Wicken, O. (2007). *The role of R&D in industrial policy: Rise and fall of a research driven strategy for industrialization* (No. 20070603). Centre for Technology, Innovation and Culture, University of Oslo.
- [21] Yin, R. K. (2011). *Qualitative research from start to finish*. New York: The Guilfford Press.
- [22] Yogish, S. N. (2006). Education and economic development. *Indian Journal of Social Development*, 6(2), 255-270.