Factors Shaping Higher Education in Botswana: A Recipe for Policy Formulation and Implementation?

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***Abstract*—The paper explores factors shaping higher education in Botswana and whether these factors are a testing ground for policy formulation and implementation. The research was guided by key objectives that focused on some factors that shape higher education in Africa and Botswana. These objectives culminated in the researcher using two futures thinking methodologies. That is, the Delphi Real-Time Questionnaire (DRTQ) and the Futures Wheel (FW). In the DRTQ experts on higher education in Botswana gave their expert opinions on factors shaping higher education in the country. They were drawn from various tertiary institutions in the country like Universities, College of Education and Technical Colleges. These experts also completed the FW where they brainstormed on the primary and secondary impact of trends in higher education in Botswana. The experts believe the government of Botswana prioritises higher education as reflected by a huge budget allocation to the sector and the development of the Education and Training Sector Strategic Plan (ETSSP) to focus on issues affecting higher education among others. Feedback from the Futures Wheel identified 6 trends that have primary impact on higher education in Botswana. The secondary impacts, which were drawn from the primary impacts, captured the following according to the experts; maintenance of higher education standards, relevant targeted education, improved service delivery, higher world rankings, knowledge society creation, increased global participation and globally competitive graduates.**

***Index Terms*—knowledge age, innovation, futures wheel, ICT, coherence, factors, higher education**

I. Introduction

The 19th century and the beginning of the 20th century marked the end of the industrial age. This also marked the beginning of the knowledge age. Countries whose economies were driven by mineral resources began to focus on education as a means to sustain their economic development. Knowledge and ideas became the cornerstone of their social and economic advancement. In other words, 'knowledge and ideas became the main source of economic growth and new patterns of work developed' [1]. As [2] sums it, in a knowledge based economy, information and knowledge creates economic value. This new era called for major transformation on the way society or countries structured, delivered and assessed their education models. There was a need to look at factors and trends shaping higher education as it was the last stage towards the world of work. The question was, is higher education relevant in producing graduates who are needed by the country's economy? European countries set the ball rolling by embarking on analysing factors shaping higher education in their countries. The aim of this research is to investigate factors and trends shaping higher education in Botswana. Does the future of higher education look bright or bleak in Botswana? The research also focuses on how higher education policy formulation and implementation in the country is affected by these factors.

II. Research Objectives

The research intends to:

a) Find out key factors shaping higher education in Africa and Botswana.

b) Analyse trends driving higher education in Botswana.

c) Assess higher education policy implications on Botswana's knowledge society aspirations.

III. Theoretical Framework

In Africa, governments have made higher education a priority in their development agenda. Higher education is seen as an engine of human resource development and the African Union has highlighted this in its Agenda 2063 continental development framework. The framework proposes eight ideals that serve as pillars for the continent development in the future. One of the pillars emphasises the need for Africa to have, 'well educated citizens and skills revolution underpinned by science, technology and innovation for knowledge society… [3].

IV. Literature Review

In March 2015, the first African Higher Education Summit was held in Dakar, Senegal, whose theme was

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'revitalising higher education for Africa's future'. The summit came up with a declaration and action plan which, among others, identified some of the following priority areas: investment in academic staff, infrastructure and facilities by governments and private sector, enrolment ration of 50% by 2063, develop higher education that accommodate older learners and provision of robust life-long learning. The above framework and the summit are some of the activities that Africa took to propel higher education as a driver of social and economic development.

Higher education in Africa is also affected by global events. According to [4] social pressures and labour markets requirements have forced universities to re-think on their study programmes. 'The main pressure being put on universities in Africa today include rapid expansion in student enrolments despite dwindling financial provision' [4]. Policy makers and implementers in higher institutions of learning believe enrolling more students will bring the much needed revenue for their sustainability. 'Recent graduates of universities throughout Africa, surveyed in 2006, described exploding demand for higher education in most African countries…' [5]. Although this has opened higher education opportunities to majority of the students but the quality of education has been negatively affected due to the high student-lecturer ratio in lecture rooms.

The other factor and trend affecting higher education in Africa is funding. Enrolment in Sub-Saharan Africa, for example, has grown faster than financial support for higher institutions of learning and this has led to shortage of resources, both human and physical, and ultimately the decline in the quality of education. However, [6] states that, 'one of the countries which has invested in higher education massively in the last decade is Ethiopia. Between 2005/06 and 2009/10, the average higher education budget in Ethiopia was 24% of the education budget. Other countries like Kenya and Uganda, funding for higher education has been declining'. These fluctuations in budget allocations for higher education across African countries bring problems of planning and implementation of policies. African governments see the need to ensure sustainability of higher education funding. They came up with some of the following measures to mitigate against the negative effects of higher education funding. That is, growth in private higher education provision, cost-sharing measures, student loans and grants and effective budget management practices.

Another factor affecting higher education in Africa, according to [4] is brain drain. That is, the loss of talented staff to developed countries. Some experts believe brain drain has positive and negative consequences for the continent. African intellectuals staying abroad will bring the necessary experience and expertise that the continent could utilise in future. Furthermore, they also share their research findings on Africa in international journals and conferences which are crucial in contributing to the advancement of the continent. The trend is that these migrants also strengthen teaching and research back in their home countries by forming research collaboration teams and creating academic networks to remain relevant on the direction higher education is taking in Africa. On the other hand, Africa's inability to retain talented staff because of lack of adequate financial incentives and better working conditions means continuous need to train staff which comes at a high cost.

Information and Communications Technology (ICT) is also one of the factors that influence higher education in Africa. [7] states that ICTs benefits include expanding access, reducing costs and providing access to a wide range of educational resources electronically to supplement face-to-face delivery. In order to improve higher education, many African countries have adopted robust ICT policies and implementation plans to reap the benefits of producing graduates who are computer literate. Despite these thoughtful ICT in education policies, Africa still face challenges related to their implementation and effectiveness.

There are a number of factors that have a bearing on higher education in Botswana. These are but not limited to research studies and reports on the state of higher education in the country. The government of Botswana has made education a priority in its development agenda. The Ministry of Education and Skills Development (MoESD) was allocated BWP 10.64 billion or 28.8% of the total budget for the 2016/2017 financial year [8]. This clearly shows government commitment to address issues of quality education and skills mismatch by channelling resources to the education sector. The allocated funds cater among others, implementation of the Education and Training Sector Strategic Plan (ETSSP), post-Secondary bursaries and maintenance of institutions facilities. The ETSSP is a five year plan (2015-2020) which spells out a clear guidance on how Botswana can improve the education sector performance. It 'identifies eleven (11) key strategic priorities linked to the policy goals and is supported by eleven (11) programmes that together provide a comprehensive, integrated strategy for the sector, emphasising the alignment within all education interventions and skills and labour force and employment needs' [9].

Prior to ETSSP, the Botswana government formulated the Tertiary Education Policy. According to [10] the Tertiary Education Policy-Towards a Knowledge Society- was passed by Parliament in April 2008 and had clearly defined goals and outcomes. It was meant 'to increase access to tertiary education, improve quality, and ensure the relevance of the programmes of study…' These changes took place within a short period of time and there were challenges encountered. As [10] points out, the major challenge was 'how to reconcile massification (increased enrolments) of tertiary education with good quality education which is globally competitive… Another challenge in the drastic change in higher education landscape in Botswana resulted in more students opting to enrol in private tertiary institutions because those institutions marketed their courses effectively and offered courses that appealed to the youth,

like software engineering, chemical and forensic science. The result was more institutions applied for registration with Tertiary Education Council (TEC) even though some of them did not meet or partially met the accreditation requirements.

Research and Innovation are also factors that define higher education status in Botswana. [11] points out that recruitment and retention of academic staff are affected by the employment package, which include aspects of the job like teaching and research. In higher institutions of learning, research and innovation are important pillars. A university is ranked according to output of its research activities.

Factors shaping higher education in Botswana could also be traced to the role played by the mineral sector in transforming the country's economy, particularly diamond mining. Prior to the 2008 world economic recession, the diamond industry was responsible for about one-third of Botswana's Gross Domestic Product (GDP), 50% of government revenue, and 70% of export revenue. According to [12] 'in 2011 Botswana is estimated to have exported 25 million carats of diamonds…This production is however down from 35 million carats in 2007, the last normal year of production, prior to the global financial crisis'. These are indications that demand for Botswana's diamonds may be waning. The government has since realised that dependency on natural resources was not sustainable. So, a new strategy had to be adopted that was more feasible. Transformation of higher education created that avenue for sustainable economic prosperity but there were factors that emerged in the last decade which had the potential to change higher education sector in the country. For example, 'the growing trend towards diversification and specialisation among higher education institutions' [13]. Botswana International University of Science and Technology (BIUST) is one such institution that was established by the government of Botswana as a research intensive university that specialises in Engineering, Science and Technology courses at both undergraduates and graduate levels. The other factors had to do with the role of ICT in creating a more flexible and interactive learning environment.

V. Methodology

The futures thinking methodologies used in this research to collect data were:

1) The Delphi Real-Time Questionnaire (DRTQ).
2) The Futures Wheel (FW).

The DRTQ is a relatively inventive method of collecting and combining expert opinions on a research study. According to [14], I selected the method because it addresses short-comings such as lack of real-time presentation of results and difficulty of tracking progress with time. Experts were given an issue to comment on or gave their expert opinion. Then, the responses from all the participants were circulated among them so that they commented further on the subject of the study. This process was repeated so that a certain level of consensus was reached among the expert participants. I used this method to obtain expert opinions on factors influencing higher education in Botswana. Fifteen (15) higher education experts who hold or have held senior positions in the following higher education institutions in Botswana were involved in the study: University of Botswana, Botswana International University of Science and Technology (BIUST), Tonota College of Education, Selibi Phikwe Technical College and Oodi College of Applied Arts and Technology. Three (3) experts from each institution provided feedback. Their positions range from Professor, Associate Professor, Head of Department and Senior Lecturer. Some of them have researched and published on higher education in Africa and Botswana. Others have many years of experience teaching in tertiary institutions in Botswana.

The FW according to [15] 'is a "smart group" method that uses a structured brainstorming process to uncover and evaluate multiple levels of consequences resulting from all types of change'. The trend is placed at the centre and events or impacts are placed around it. These impacts, primary and secondary are joined by spokes to show how they are related to the trend. Fig.1 below, adopted from Glen [16], illustrates the Futures Wheel:

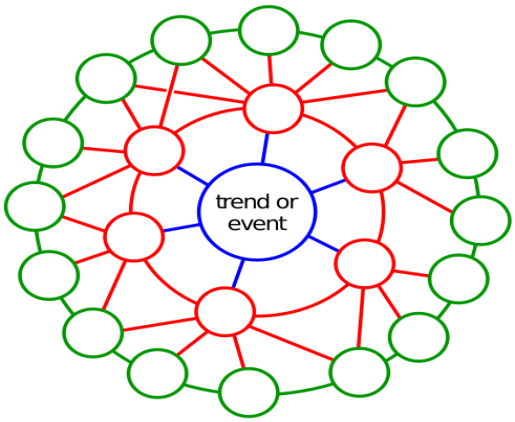

Figure 1. Illustration of the futures wheel

The Futures Wheel was administered among the fifteen (15) experts identified in the DRTQ to find out what they thought were the impacts of factors affecting the higher education landscape in Botswana.

VI. Findings and Discussion

The 15 experts from the sampled higher education institutions in this research provided judgements and reasons for their judgements. In order to address lack of presentation of real-time presentation of results and difficulty of tracing progress over time, the researcher circulated the responses twice among the respondents for them to further comment, add and clarify on the statements of factors shaping higher education in the country. The following are the judgements and reasons on the statements:

A. The Government Makes Education a Priority in its Development Agenda

Majority of experts agree with the statement that indeed government prioritises education in its

development agenda. 13 out 15 respondents ticked to a very large extent and to a large extent boxes in the questionnaire. This translates to 86.6% of experts who agree with the statement. Only 13.4% of experts stated that they were not sure or to some extent if government see education as a priority. Those who agreed with the statement echoed what is articulated in the literature review, where the African Union highlighted in its 2063 Continental Framework. The government of Botswana has also made education a priority in its development agenda by allocating BWP 10.64 billion or 28.8% of the total budget for the 2016/2017 financial year to the Ministry of Education and Skills Development (MoESD) [8]. The respondents further gave reasons for their judgement on the statement. Majority gave large budget allocation to the MoESD as an indication of government's efforts to prioritise education. One of the experts even stated that, 'The bulk of the development budget for the last 5 years has been going to education'. The others mentioned little fees paid by parents towards the education of their children, particularly at primary and secondary school levels including provision of textbooks to students as commitment by the government to prioritise education. Other experts cited government sponsorship to all students enrolled in higher education institutions, locally and abroad, as the reason behind making education a priority in the development agenda. The 13.4% who are not sure or doubt the government commitment to making education a priority stated that other ministries like that of Defence, Justice and Security also get a larger share of the budget.

B. Education and Training Sector Strategic Plan (ETSSP) will Improve the Higher Education Sector Performance

53.3% of the experts believed ETSSP would improve higher education performance while 33.3% were not sure if the plan would make the sector produce positive results. Only 13.3% of the experts hold the view that the plan may propel higher education sector performance to a limited success. Those who agreed with the statement view the plan as a milestone achievement that will transform the future of education in the country over the next five years (2015-2020). The plan outlines the challenges facing the higher education sector and suggests strategies, programmes and activities that will help overcome such challenges. The following are some of the statements experts stated about the positive effects the plan will have on higher education performance:

'The strategic plan will help focus on what needs to be done and how it should be done'.

'The plan will help implement priority areas in the tertiary education sector'.

However, those who are not sure if ETSSP will drive the higher education sector performance cited lack of knowledge on the contents of the ETSSP document. They heard about it on television and radio but were never briefed about it as implementers of government policies and initiatives. They were never brought on board when the idea of the plan was formulated as they work with the students who are its main beneficiary. One lecturer from a College of Education dismissed the plan as a 'tool by politicians to deceive people into thinking that a solution to the education crises in the country has been found'. Those who stated that the plan would to some extent produce the desired results did not dismiss it in totality. They believed that if the government was committed to the plan, then positive results will come out of it. They also expressed concern that good policies, plans and initiatives never see the light at the end of the day because of lack of or poor implementation plans by the government. One professor at the University of Botswana indicated that the 'ETSSP is a good policy document but it is not backed by sound implementation policy framework'. In summary, after the DRTQ was circulated for the second time among the experts, with comments from others, they reached some consensus to the effect that ETSSP was a good policy document that will transform the country's education system and higher education in particular. But the government needed to develop a robust implementation plan that should be monitored effectively.

C. The Tertiary Education Policy (TEP) Drives the Knowledge Society Aspirations of the Country

Majority of the experts indicated that the TEP indeed was at the forefront in ensuring the country attained knowledge society status. 90% of them ticked to a very large extent and to a large extent boxes in the questionnaire. Their sentiments were echoed by [10] in the literature review when he said the policy was meant, 'to increase access to tertiary education, improve quality and ensure the relevance of the programmes of study…' In terms of access to tertiary education the experts believe the government was on course to achieve the 20% enrolment by 2020. More private higher institutions of learning registered with Tertiary Education Council. Despite the positive comments about the TEP intensions by experts, some expressed misgivings about it. They said the policy provides a clear blueprint of what the country needs to do in order to propel higher education to greater heights but 'the government has largely neglected higher education and concentrated on basic education and of late TVET' (Technical and Vocational Education and Training) as one lecturer of a College of Education argued. All in all, the experts believe the TEP can direct higher education in the country to success. With clearly defined policy goals, targets and proper implementation capacity the sky is the limit. The country's economy can be boasted as knowledge society aspirations are attained.

D. Research and Innovation Defines Higher Education Status in Botswana.

The statement was intended to solicit expert views regarding research and innovation in higher education in Botswana. These are the pillars that define higher education in the 21st century. 10 out of 15 experts rated the statement high. The experts gave various reasons for rating the statement positively. They stated that for higher education institutions of learning to be internationally recognised, their research output should

be high. One of the key competencies required from staff is ability to conduct research and publish research papers in peer reviewed journals. The above point was emphasised by [11] in the literature review where he pointed out that one of the employment packages in higher education institutions include carrying out research activities. The other experts acknowledged the importance of research and innovation but pointed out lack of funding for research activities as major impediments. Many higher education institutions have limited funds to support their staff conduct research. The argument has always been that research competed with other activities for funding.

E. The 2008 World Economic Recession has an Influence in Botswana's Decision to Focus on Higher Education Transformation

All the experts agree that the 2008 world economic recession made the government focus on higher education as the future engine of economic growth. The country's reliance on natural resources like diamonds to generate income for the economy was no longer sustainable. The experts argued that higher education provided a platform to, 're-engineer economic development, sustain economic diversification initiatives and ultimately improve the quality of life', as articulated by one lecturer from a Technical College. The experts also reasoned that the country could also export labour if the economy could not absorb all the graduates and attract foreign students in local institutions. These students would bring in the much needed revenue and skills. The recession was a wakeup call for countries like Botswana to find viable means of economic diversification that were sustainable.

The experts in this research also had the opportunity to state some other factors, besides the ones discussed above, that influence higher education in Botswana. Those who mentioned politics as factor did not elaborate on how it influenced higher education in the country. The other factor the experts mentioned was the qualification framework. The need for such a framework was emphasised to monitor and ensure quality standards were maintained. The framework also provided guidance on issues of quality assurance and accreditation of higher education institutions to regulatory bodies. Other experts further stated poor funding model as a major influencing factor for the higher education sector. Although the Ministry of Education and Skills Development was allocated the largest share of the 2016/2017 recurrent budget as stated earlier in the literature review, the bulk of the funds go to basic education. This meant the budget was stretched to the limit because more than 90% of high school leavers were government sponsored in tertiary institutions. Students who were enrolled in private higher education institutions were also sponsored by the government. So respondents are of the view that the burden of funding higher education by the government stretches the limited budget and they suggest the government came up with a law that will compel parents who can afford to sponsor their children for higher education to do so.

From the Futures Wheel the experts identified six (6) key trends that have primary impact on higher education in Botswana. These are: Higher education policy, ICT based curriculum, Research based curriculum, Partnerships with foreign Institutions, Higher education funding model and Market oriented courses. According to them, a sound higher education policy plays a crucial role in providing direction to higher education in any country. The experts believe Botswana's Tertiary Education policy is the first step towards creating knowledge based society. These are the ideals that experts think if implemented effectively could drive the country's knowledge society aspirations to greater heights. The experts also highlighted ICT based curriculum as having primary impact on higher education in the country. The government has taken a number of measures to improve ICT infrastructure and internet connectivity in the country. Higher education institutions utilise this technology to deliver their curricular. The above point is captured by [17] who reiterated the impact of ICT in making higher education accessible across universities. The experts identified research as a vital trend in higher education institutions. Its potential is realised in Botswana's tertiary education policy which recommend research and innovation as key components that define higher education in the country. The experts also stated partnerships with foreign institutions as having primary impact in higher education in the country. As explained earlier in the literature review, the impact of globalisation has allowed institutions to open satellite campuses in other countries and also collaborate in research activities. Botswana has witnessed foreign institutions like Limkokwing University of Creative Technology from Malaysia opening a campus in the country. The experts further identified higher education funding model as another trend impacting higher education in the country. 'The main pressure being put on universities in Africa today include rapid expansion in student enrolments despite dwindling financial provision' [4]. Over the years the government has been the main sponsor for tertiary education but this is not sustainable in the long run. Higher education stakeholders in the country are trying to come up with funding models that are sustainable. These include bringing the private sector on board and introducing cost-sharing measures to mention but a few. Lastly experts in this research mentioned market oriented courses as another trend that has primary impact on higher education in Botswana. Graduate unemployment, as stated in the literature review, is a factor defining higher education in Africa and Botswana in particular. Universities are focusing on market related courses to remain relevant and equip graduates with 21st century skills.

The secondary impacts of trends shaping higher education in Botswana are varied. They cut vertically, horizontally and diagonally across the Futures Wheel. According to the experts, the secondary impacts of the six (6) identified primary impacts capture the following:

The partnerships between higher education institutions explained earlier result in globalisation of higher education and maintenance of international standards across institutions. As universities focus on market related courses in their curriculum, services will improve and institutions will produce graduates with 21st century skills who are globally competitive. They will create jobs for themselves and others. The experts also pointed out that an ICT based curriculum in higher education institutions of learning will help create knowledge society and propel institutions to higher world rankings. This means an opportunity to attract top-notch scholars, professors, researchers and enrol the best high school leavers. The research output for such institutions will be high. A sound funding model for higher education can result in financial prudence, better resource management and increased global participation in world affairs as secondary impacts. The secondary impacts discussed above are pivotal in explaining the after effects of primary impacts of trends shaping higher education in Botswana.

VII. Conclusion

In summary, the two futures thinking methodologies utilised in this research yielded important data on factors shaping higher education in Botswana. The research shows how the selected experts in higher education see the efforts government makes in developing and improving higher education through programmes like ETSSP, Research and Innovation. They also stated some shortcomings like limited higher education funding as some of the impediments to the growth of the sector. The research further utilised the Futures Wheel to solicit information on the primary and secondary impacts of higher education trends in Botswana. At the end it is clear that policy coherence is key to attainment of knowledge society status.

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