TOWARDS HIGHER EDUCATION INSTITUTIONS (HEIS) IN NIGERIA FOR RESEARCH, INNOVATIONS AND SUSTAINABLE DEVELOPMENT

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ABSTRACT

Honestly speaking, education is the driving force for growth of every nation and economy. An economic growth is driven by the productivity of a nation's workforce, whereas productivity of any workforce is based on its education. As a result, all nations give superiority to the education of their citizens, making sure that as many citizens as possible have access to education. Undoubtedly, the impact of education on society becomes better as the number of people with access to HEIs increases. Hence this paper shows that HEIs is a level of education where citizens are finally prepared to contribute their quotas to socio-economic development, and also deduce that the impact of HEIs is identified to be affected by certain factors, amidst which research and innovations stands tall. The ability of graduates of HEIs to contribute credible quotas to socio-economic development practically depends on how well they are taught in their respective HEIs. Resource persons therefore have a vital role to play in ensuring effectiveness in HEIs in Nigeria. In every HEIs therefore, the quality of education is contingent on the performance of academic staff, to maximize performance every HEIs are expected to set the highest educational qualification and experiences as the basis for effective teaching and learning in its environment. On the job training and exposure to research work are other basic measures instituted by HEIs to maximize the performance of resource persons.

INTRODUCTION

The goals of the Higher Education Institutions System (HEIS) has been to boost regional expertise by means of a network of universities, polytechnics, monotechnics, and colleges throughout Nigeria offering diversified tertiary education designed to meet the needs of working life (Umar et al 2016; 2016c). Most Higher Education Institutions (HEIs) in Nigeria have evolved from post-secondary educational establishments into institutions of higher education promoting regional development (Umar et al 2016a). The swift advancement of research and development (R&D) at HEIs has been of major importance (Umar et al 2016g). Such development is required to actively engage in the development of working life and to produce relevant new knowledge (Umar et al 2016c). The regional role and impact of the HEIs will be enhanced and, as a related measure, their capacity to produce new knowledge relevant to working life, professional expertise and its development potential will also be improved (Umar et al 2016b; 2016f). Applied R&D cooperation between HEIs and working life is regarded as the main means to achieve these goals (Umar 2015). The objective is to channel increased R&D resources to regional development, the promotion of entrepreneurship in the Small and Medium Entrepreneurship sector (SME), and improved welfare services (Umar et al 2016h; 2016i). The importance of HEIs for regional development is increasing (Umar et al 2016g). At a quickening pace, they are becoming important actors alongside industry and services in regional growth and development (Umar et al 2016d; 2016e).

The indications of community development projects include the concentration of Centre's of expertise around institution of higher education, technology Centre's, science parks and other organizations benefiting from the expertise of HEIs (Umar et al 2016a). These concentrations have been termed 'regional innovation systems', covering a region's education and research as well as entrepreneurship and related expert and financial services (Umar et al 2016d; 2016e). Active participation in strategic planning is a prerequisite if polytechnics are to be able to undertake successful regional development (Umar et al 2016c). Accordingly,

they are seeking to adjust to their new role, and taking an active part in the planning of regional development strategies (Umar 2015). A high-quality skilled workforce and R&D at institutes of higher education are key factors in regional strategies. The importance of HEIs in R&D is expected to grow (Umar et al 2016). HEIs have introduced and implemented several practical regional development projects. The content, goals and methods employed vary, depending on the institution, the region and the forms of funding available (Umar et al 2016b). Regional development is one of the strategic focus areas of the Government Program, which emphasizes the need to increase expertise in the various regions and promotes the competitive capacity of viable regional and sub-regional Centre's (Umar et al 2016c; 2016f). The target and performance agreements governing HEIs stress their role in regional development in both the targets common to all institution and the individual strategy of each HEIs (Umar et al 2016a). The institutions own strategies detail their particular areas of focus and their viewpoints on regional development (Umar et al 2016h; 2016i). Knowing well the forms of cooperation between them and local actors in its area, and to results achieved by HEIs locally and its activeness in developing its region (Umar et al 2016d; 2016e).

BACKGROUND LITERATURE
The Nigerian Higher Educational Institutional Systems (HEIS)
The Nigerian Higher Educational Institutional Systems (HEIS) consists of three parallel sectors: Universities, Polytechnics/Monotechnics and Colleges (Umar et al 2016c). The universities comprises of federal universities (conventional and nonconventional), state universities (conventional and nonconventional), and private universities (Umar et al 2016; 2016a). The polytechnics comprises of federal polytechnics, state polytechnics and private polytechnics, and the monotechnics also comprises of federal monotechnics, state monotechnics and private monotechnics, Polytechnic national diploma and higher national diploma are middle and higher polytechnic educational qualifications with a professional focus and take 2 and 4 years to complete respectively (Umar et al 2015; 2016b). The first university degree, which is a Bachelor's, degree are attained in four, five or six years of full-time study depending on universities taught courses and the higher, Master's degree is in additional two years, that is a further two years

following the Bachelor's degree (Umar et al 2016b; 2016f). The doctoral degree are completed in three years of full-time study, after the Master's degree. The colleges includes the colleges of education, health and aviation technology (Umar et al 2016d; 2016e).

The Administration of Higher Education Institutions (HEIs) In Nigeria

The parliament enacts laws on (HEIs) that determines the entire lines of educational policy. The government as well as the ministry of education shoulder the responsible of implementing the enacted principles (Umar et al 2016a). The National University Commission (NUC), the National Board for Technical Education (NBTE), the National Board for Colleges of Education (NBCE) all on behave of the federal government adopts a development plan for education and research in their respective lines of education (Umar et al 2016; 2016f). All public educational institutions, from the primary to (HEIs), is supervised by the ministry of education, So also the existing private educational institutions and the education they provide is subject to public supervision (Umar et al 2016b). The ministry of education is charged with the administration of national education and research; its scope comprises all universities, polytechnics, monotechnics, colleges of education and all special institutions around the country (Umar et al 2015). In the issues related to institutions, the ministry of education is aided by the various national board of education (Umar et al 2016d; 2016e). The Education Trust Fund (ETF), the Petroleum Tertiary Development Fund (PTDF) and the Tertiary Education Trust Fund (TETF) takes care of human resources development, central research and development and finances all the higher educational institutions within the country (Umar et al 2016c). The (HEIs) are entirely public or private, the public (HEIs) comprises of the federal and state own (HEIs), the private (HEIs) was allowed as a way to promoting the development of the (HEIs) network and the ownership structure (Umar et al 2016a).

Nigerian Educational Objectives and Policy Priorities

Education and research are vital to Nigeria's strategy of the future that aims at the wellbeing of its people, cultural diversity, sustainability and prosperity (Umar et al 2016a). The keywords in education policy in Nigeria has been high

educational equality and the principle of moral responsibility (Umar et al 2016). The country has to develop a knowledge-based society via education and research (Umar et al 2016h; 2016i). The federal government is kin at maintaining a high level of public (HEIs) funding that enhance education and research system (Umar et al 2016b). Special focus aims at developing effective teaching and learning at all three parallel levels of education via human resources development, educational activities and extra-curriculum services (Umar et al 2016c). The higher education institutions (HEIs) must be mindful of developing their host community and regional responsiveness via intensified cooperation with indigenous business and industries and by facilitating the employment of expertise within the locality (Umar et al 2016f). The (HEIs) system will be harmonized as an entity, consisting of the three parallel education lines in that universities, polytechnics/monotechnics, and colleges of education complement one another (Umar et al 2015). The system of (HEIs) qualifications will be harnessed to correspond to the needs of working career and also in view of standardizing qualification structures for international development. The key targets of education policy in Nigeria were laid down in worthiness of learning and character development (Umar et al 2016d; 2016e).

Research and Development at Higher Education Institutions in Nigeria

In recent years, Research and Development R&D at Higher Education Institutions HEIs in Nigeria has been one of the main areas of focus in the development of HEIs (Umar et al 2016). The institutions that were the predecessors of the HEIs rarely did anything that could be described as R&D (Umar et al 2016d; 2016e). On the other hand, some of them had a strong tradition of cooperation with business, including selling training services to companies and providing other business services (Umar and Mahmud 2015). The National University Commission (NUC), National Board for Technical Education (NBTE), National Board for Colleges of Education (NBCE) and research development plan includes the following target: "The capacity of HEIs for producing new knowledge about working profession, professional expertise and its development will be improved (Umar et al 2016d; 2016e). To this end, measures will be taken to develop professional postgraduate degrees and applied R&D jointly undertaken with business and industry (Umar et al 2016h; 2016i). The increase in R&D will be

especially geared to promoting regional development, supporting the small and medium entrepreneurship (SME) sector and developing welfare services." (Umar et al 2016a) All Nigerian HEIs had drawn up an R&D strategy of their own, on funding from the federal government and private sector (Umar et al 2016c). Subsequently, most HEIs have reorganized this function. The Ministry of Education funding is intended to lay the foundation for R&D; the funding for actual research must be found from other public and private sources (Umar et al 2016). R&D at HEIs is now experiencing a period of strong growth. R&D at HEIs is applied R&D based on the actual needs of working profession (Umar et al 2016g). It focuses on practical issues in working life and aims to promote regional development, particularly by promoting and reinforcing SMEs and welfare services (Umar et al 2016b). The practical goals include creating new or improved products, production tools or methods and services (Umar et al 2016f). On the other hand, R&D forms an important basis for improving the competence of HEIs and thus part of the knowledge being taught (Umar 2015). R&D also supports the study process by providing opportunities for examining phenomena in the relevant sector. R&D is a component of the service aspect of HEIs; its results benefit the immediate vicinity of the HEIs and, more generally, society as a whole (Umar et al 2016a). In R&D, HEIs focus not only on new SMEs but also on traditional ones that pursue little or no R&D of their own. Extending innovation and the principles and practice of R&D to this rather large group of companies is an important challenge for HEIs (Umar et al 2016b). Problems found in the SME sector are different from the problems and development needs of large companies. HEIs may provide expert help in addressing these problems and help develop the business of SMEs (Umar et al 2016c). The regional aspect is a central feature of R&D at HEIs, the main aim being to serve the region in which an individual HEIs is located (Umar et al 2016). In most cases, the objectives of R&D at HEIs have been linked to regional objectives, with an emphasis on supporting industrial SMEs and service production. Multi-skilling is also considered a resource and strength of R&D at HEIs (Umar et al 2016f). As examples we might mention the production of welfare services, cultural services and various science and technology production and commercialization projects. Cooperation and networking related to R&D at HEIs are only just emerging, which is why the focus is now on creating a network that would make the best possible use of the results

of R&D at HEIs and coordinate the work of research institutes and industrial demands on the regional and national levels (Umar et al 2016d; 2016e).

Development of Higher Education Institutions (HEIs) For Innovations

At the regional and national levels, socio-economic, science and technological developments have a strong impact on business and industry structures, company business models and the demands for competence made of employees and of society as a whole (Umar et al 2016a). This development is being guided and its new potential exploited through innovation policy, thus broad, determined development of the resources of innovation across sectorial boundaries (Umar et al 2015). A functional and efficient national innovation system and regional systems are becoming increasingly important in the generation of economic growth and welfare (Umar et al 2016c). Nigeria has all the potential for exploiting present trends (Umar et al 2016). The economic outlook remains good, employment is improving, and unemployment has decreased. Investment in R&D has increased considerably, particularly in the government sector (Umar et al 2016b). Government has launched several measures to keep the public-sector education and research system up to speed with the changes going on in society. The tertiary education trust fund were well aimed and productive for the economy, employment and business (Umar et al 2016d; 2016e). The intervention of private sector in funding is complementary and well-aimed development measures will ensure the competitiveness of our national innovation system in the future. Competence development is seen as the main tool for influencing the development of the regions (Umar et al 2016a). Investments in competence can be seen to have a positive impact on regional employment, development of the business and industry structure, reinforcement of regional economies and other indirect social and cultural knock-on effects (Umar et al 2016f). The fact that society is becoming more open and more globalized means that the success of the regions is increasingly dependent on their position amid international competition (Umar et al 2016b). Success here requires investment in quality and a smooth innovation-to-product chain (Umar et al 2016h; 2016i). New innovations emerge from a foundation of broad high-quality basic research, the main responsibility for which lies with universities and research centres. Ensuring the quality of basic research requires sufficient

resources and international cooperation among universities, polytechnics and colleges (Umar et al 2016d; 2016e).

The Structure of the Nigerian Higher Education Institutions System (HEIS)

Nigerian HEIS policy is based on the widely accepted principle of two mutually complementary sectors, the ministry of education and the regulatory education bodies (Umar et al 2016c). It has been considered self-evident that the demands of working life have developed and are developing in a way that justifies the provision of professional HEIs (Umar et al 2016b). This policy is also supported by the fact that it has not been considered appropriate to encumber universities with an even greater training burden (Umar et al 2016). Diversification of higher education has been one of the most important goals of polytechnic reform (Umar et al 2016g). Another significant factor behind the reform has been the need to improve the international comparability of Nigeria education (Umar et al 2016b). This, it was considered, would make the international mobility of students and researchers easier, and enable graduates to find jobs on the international labour market, particularly in Africa (Umar et al 2016a). The university and polytechnic graduates have had no problem in going on to study or work abroad. By contrast, graduates from the former post-secondary vocational colleges often experienced major difficulties in international mobility (Umar et al 2015). A reform of university degrees was carried out in parallel with the polytechnic higher national diploma (HND) reform (Umar et al 2016h; 2016i). Degrees were made equals to HND in nearly all sectors around the nation. This generated considerable debate immediately, since it was considered that graduates with university Bachelor degrees and graduates with polytechnic degrees would be competing for the same jobs. On the other hand, reform of the university degree system was considered necessary because of internal problems in the system, on the one hand, and greater international comparability on the other (Umar et al 2016c). Thus, the fact that both university and polytechnic sectors would offer degrees at the same level has not been seen as a problem in the labour market (Umar et al 2016b). The Ministry of Education wishes to strengthen the status of the HND qualifications. In practice, this means that the Government would like to remove the dichotomy between degrees and HND. On the other hand, the Government has also stressed the need to develop cross-disciplinary

qualifications to meet the needs of working life (Umar et al 2016a). Experiences at the polytechnics have led the Ministry of Education to assess that strengthening the status of the HND does not conflict with developing the polytechnics (Umar et al 2016d; 2016e). The basic task of the polytechnics was and is to prepare students primarily to enter the labour market immediately after graduation (Umar et al 2016b). This approach is expected to reinforce the identity of the polytechnics and the difference between their expertise and that of the universities, helping to further profile the two sectors. No clear status has yet been defined in the national degree system for polytechnic HND's. So far, the aim has been to keep these two higher education sectors rather strictly apart in Nigeria higher education policy (Umar et al 2016; 2016f). Cooperation between universities and polytechnics has been taking shape, and potential has been found for feasible extensive regional education cooperation (Umar et al 2016c). What is problematic is that there is no clear national policy, for instance regarding the recognition of prior studies and degrees within higher education (Umar et al 2016d; 2016e). A national policy on recognition of credits should exist to safeguard students' legal rights (Umar and Mahmud 2015). However, maximum acceptance of credits should not lead to any merging of education content. In the present system, where polytechnics cannot provide a competitive alternative to the bachelors's degree programmes of the universities, there is a danger that polytechnic basic degrees may be taken too far towards the university Bachelor's degree in the hope of ensuring that students have the capability to pursue further studies (Umar et al 2016d; 2016e). Nigeria must, in order to maintain competitiveness, monitor trends in higher education structures closely, particularly in Africa (Umar 2015). A more flexible system might be appropriate in Nigeria, too. Different regions have different needs, and it is difficult to pinpoint a single model for university-polytechnic cooperation that would be appropriate for everywhere in the country; the system should in and of itself allow for a variety of approaches (Umar et al 2015b; 2015c).

Standard of Nigerian Education

The standard of education in Nigeria has risen slowly in recent decades. By international comparison, Nigeria is currently at the general United Kingdom level (Umar et al 2016d; 2016e). More Young people are more likely to have

completed a certificate, diploma or degree than their elders (Umar et al 2016a). Many have completed a qualification at least at the senior secondary level; and recently the population of young people in education is very high. Social background still affects educational choices in Nigeria: children of the poor, menial workers and farmers mostly opt for vocational education, whereas the children of the rich and elite workers normally attain university (Umar et al 2016b; 2016f). Although, the education level of parents and guardian would gradually influence their children's educational choices: the more highly educated the parents are, the more willing their children usually are to obtain a higher educational institutions (HEIs) qualification (Umar et al 2016).

METHODOLOGY

The findings presented and discussed in this research work titled "towards higher education institutions (HEIs) in Nigeria for research, innovations and sustainable development" come from an extensive review of literature and content analysis of the Nigerian Higher Educational Institutional Systems (HEIS) consisting of three parallel sectors: Universities, Polytechnics/Monotechnics and Colleges. (Most of which are either conventional and/or nonconventional, belonging to government or private) (Umar et al 2016h; 2016i). The researchers were familiar with the environment and curricula, working in the academy for more than a decade and pursuing simultaneously the in-service teacher education and skills development program. Being familiar with the entire lines of educational policy; the ministry of education; the National University Commission (NUC), the National Board for Technical Education (NBTE), the National Board for Colleges of Education (NBCE) (Umar et al 2016h; 2016i). The paper concluded that in recent years, Research and Development R&D at HEIs in Nigeria has been one of the main areas of focus in the development of tertiary institutions in the country (Umar et al 2015b; 2015c). The ministry of education therefore is charged with the administration of national education and research; its scope comprises all universities, polytechnics, monotechnics, colleges of education and all special institutions around the nation (Umar et al 2016d; 2016e). If research development plan includes and broadens the capacity of HEIs to produced new knowledge about working profession, professional expertise, its development will then be improved (Umar et al 2016f).

DISCUSSIONS

With swift globalization, progressive developmental integration, and the advances of information and communications technology, national education systems are now facing a wholly new competitive situation in both developed and developing nations (Umar et al 2016). National and International producers and stake holders of education services, both commercial and non-commercial, are challenging national HEIs (Umar et al 2016a). The international supply of education may be expected to expand considerably in future years as the volume of online teaching increases and its quality further improves (Umar et al 2016d; 2016e). Nigerian's extensive and geographically comprehensive network of HEIs is a competitive provider of education to young people and adults (Umar et al 2016b). The low tuition fees, the good infrastructure and the reliably uniform high quality have ensured the continued interest of students, despite the increasing range of foreign study options available (Umar et al 2016d; 2016e). Ensuring the quality of Nigerian education and its international competitiveness will be vital in the near future in order to prevent a brain drain of talented students and scientists from Nigeria (Umar et al 2015). Thanks to decisive policy and changes in the operating environment, HEIs has become internationalized rapidly. International R&D cooperation has also increased and expanded into new fields. Still, in international comparison the HEIs is seen as a rather closed system. Number of foreign students is still very low (Umar et al 2016b). Ministry of education has stressed the need to further cooperation and interaction in its internationalization of education policy, and the aim of international operations is primarily to improve the quality of education and broaden its range (Umar et al 2015b; 2015c). International cooperation has also been used to enhance the international skills of Nigerian students and researchers, including their language and cultural skills (Umar et al 2016f). Rapid shifts in the labour market mean Nigeria has to compete for the availability of foreign labour along with other industrialized countries (Umar et al 2016a). The situation is particularly challenging for Nigeria in a number of respects (Umar 2015). Although awareness of Nigerian potentials has increased considerably with our partnership with many countries, the country is still not very well known outside Africa. One way of bringing foreign labour into the country is to increase the

provision of education for foreign degree students and to provide them with the opportunity to get a job in Nigeria after completing their degree, at least for a fixed period of time (Umar et al 2016d; 2016e).

This new approach requires more determination and competence, to make Nigeria better known and more attractive in Africa and beyond (Umar et al 2015b; 2015c). In practice, this requires the creation of a specific marketing strategy for HEIs and research, creating generally accepted national principles for succeeding on the global education and labour market (Umar et al 2016c). This strategy must be based on the principle of maintaining the high quality of teaching and research, allowing the results to speak for themselves (Umar et al 2016). It should be possible to market Nigerian HEIs worldwide, although we should have carefully selected target areas in which we aim to raise awareness. Nigeria should also identify the sectors in which we can offer special expertise, and this expertise must be commercialized, at least in part (Umar et al 2016a). On the one hand, the potential of Nigerian HEIs for offering education to international students in Nigeria should be increased (Umar et al 2015b; 2015c). This requires more and better teaching in English (Umar et al 2018). On the other hand, Nigerian HEIs should in some respects be developed so that it can be provided elsewhere too, either virtually or by traditional means (Umar et al 2016f). How all this fits into the national principle of providing education at low tuition or free of charge must, of course, be very carefully considered. Nonetheless our higher education system must be adapted to the changing market situation (Umar et al 2016d; 2016e).

CONCLUSIONS

Education and research are vital to Nigeria's strategy of the future that aims at the wellbeing of its people, cultural diversity, sustainability and prosperity (Umar et al 2016c). The keywords in education policy in Nigeria has been high educational equality and the principle of moral responsibility (Umar et al 2015b; 2015c). The country has to develop a knowledge-based society via education and research (Umar et al 2016a). The federal government is kin at maintaining a high level of public (HEIs) funding that enhance education and research system (Umar et al 2016d; 2016e). Special focus aims at developing effective teaching and learning at all three parallel levels of education via human resources

development, educational activities and extra-curriculum services (Umar 2015). The higher education institutions (HEIs) must be mindful of developing their host community and regional responsiveness via intensified cooperation with indigenous business and industries and by facilitating the employment of expertise within the locality (Umar et al 2016b). The (HEIs) system will be harmonized as an entity, consisting of the three parallel education lines in that universities, polytechnics/monotechnics, and colleges of education complement one another (Umar et al 2015).

The strengths and weaknesses in education research in Nigeria are not unique to the country alone (Umar et al 2016h; 2016i). Having immense educational challenges, however, much more focused, pertinent and thus directly useful research needs to both emanate from and also feed back into the undoubtedly growing enterprise (Umar et al 2016; 2016f). In addition, more all-encompassing overviews of research are required, so as to guide individual researchers, research teams and postgraduate students alike towards areas in particular need or which may benefit from different methodological applications (Umar et al 2015b; 2015c). Such overviews would also help to augment, refine, extend and keep up to date databases such as the one on which this paper has drawn (Umar et al 2016b). Most importantly, it is hoped that the availability of this database, and the fact that it consists of too many rather incremental, even indiscriminate, pieces of research, will prompt greater communication and collaboration among researchers with a view to building stronger, more informed and indeed more synthesized bodies of work which can address Nigeria's pressing educational problems in a more concerted manner (Umar et al 2016c).

RECOMMENDATIONS

➢ The Higher Education Institutions (HEIs) should be actively involves in boosting regional expertise by means of offering diversified tertiary education designed to meet the needs of working life.

➢ The advancement in research and development (R&D) at HEIs is required to actively engage in the development and production of relevant new knowledge.

> The Higher Education Institutions (HEIs) should promote entrepreneurship in the Small and Medium Entrepreneurship sector (SME), so as to improved welfare services.
> Active participation in strategic planning is a prerequisite if (HEIs) are to be able to undertake successful regional development.
> The private (HEIs) sectors should be supported as a way to promoting the development of the (HEIs) network and the ownership structure.
> The educational plan strategy must be based on the principle of maintaining the high quality of teaching and research, allowing the results to speak for themselves.

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