

The Role of Skills Development, Entrepreneurship and R&D in Combating Emerging Challenges in the Development of World Economies

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Abstract

The Gross Domestic Product (GDP) of a country is the total value of all final goods and services produced within a country over a period of time. Therefore, an increase in GDP is the increase in a country's production and positive indication of economic growth. But Economic Growth differs from Economic Development in the sense that the later alleviates people from low standards of living into proper employment with suitable shelter. Important factors aiding economic development include Natural Resources, Power & Energy Resources, Capital Accumulation, Technological Resources, Available Labor Force, Transportation and Communications, Education and Training. Each of these factors influences the available economic resources and growth opportunities within a country. The world is dynamic as pertinent issues have arisen in the past few decades; some enhancing and some degrading the occurrence and utilization these factors. For instance, climate change lowers food and industrial raw materials availability while population growth in so much as it stresses food security also offers labour availability if countries can do more to equip their population with equitable skills. Similarly, emerging advancements of science and technologies have greatly reduced the cost of transportation and communication, making economic globalization possible. The bad effects of terrorism, communal conflicts further intensified by the loss of farm lands to flooding and desertification occasioned by climate change as well as the continuous exploitation of poor countries by the rich through the much accepted globalization enhanced by Foreign Direct Investment (FDI) are issues militating against the economic development of many economies. This trend must be checked especially for developing countries to ensure the welfare of the citizenry. This work posits that concerted and policy backed effort towards skills acquisition, entrepreneurship and clustering is the panacea to combating emerging challenges against economic development. World economies are provoked to do more to promote skills acquisition, enhancement and reskilling in innovative entrepreneurial environment enabled through technology incubation centres, clusters and S&T parks.

Keywords: *Development, Economic, Skills, Entrepreneur, Cluster, Policy.*

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Background to the Study

Economic development is holistic and encompassing, ensuring sustainability and the betterment of all and sundry. In the time past we have ultimately aimed for higher GDP ensuring economic growth without necessarily fostering development. GDP is the aggregate measure of a nation's total economic activity. The categories of economic activity that make up GDP include consumer spending, business investment in capital goods, government spending on goods and services, and net exports, with production a fifth category underlying the others. Many economists represent GDP as the following equation: $GDP = C + I + G + NX$, with C representing consumer spending; I, business investment; G, government spending; and NX meaning net exports, or the difference between exports and imports of products. Production encompasses activities from the manufacture of small appliances to the provision of professional services, from data processing to medical care. Although production is not an explicit component of GDP, it is implicit as the production processes yield the vast array of products and services that consumers, firms and governments buy and sell (Hall, 2017).

Economic growth can simply be defined as a rise in GDP or GDP per capita. Economic development is a broad concept encompassing economic growth and other developmental dimensions. It can be defined as “a multidimensional process involving major changes in social structure, popular attitudes, and national institutions, as well as the acceleration of economic growth, the reduction of inequality, and the eradication of poverty (Kwong, 2010). Activities purely aimed at increased production of goods and services without considerations to emerging and contemporary issues often lead to economic growth without ensuring the well-being of the people. The scenario in such a situation is that there is increase in GDP while the population lives in poverty, want, hunger and harsh environmental conditions. The present state of the Nigerian nation depicts such scenario.

Emerging and contemporary issues are dual in nature according to their main impact on economic development. Some indeed are bidirectional in their impact as they radiate both positive and negative effects simultaneously. Geometric population growth, corruption, crime and terrorism, militancy, unemployment, poor education and university systems, devastated environment occasioned majorly by climate change and oil explorations; poor infrastructures as well as gender and the rich-poor widening disparity are some the emerging and contemporary issues adversely affecting economic development. Economic globalization stands out as one bidirectional emerging issue that renders positive and negative impact on some economies depending on the interplay of other factors within the economy. It can be seen that some issues enhance other issues. For instance population growth make many to chase few resources in a society where corruption is prevalent and policies of government inadequately administered for infrastructural provision, requisite education and skills acquisition giving vend for all sorts of crime, terrorism and militancy.

Advances in robotics technology are making human-machine collaboration an everyday reality. Robots are becoming more connected due to the cloud-computing revolution. Composites technology and recyclable thermosetting plastics are other emerging issues as the new structures are rigid, tough, and resistant to heat, with the same potential applications as

their unrecyclable forerunners. Precise genetic-engineering techniques will replace conventional engineering that has long caused controversy. New techniques allow us to directly “edit” the genetic code of plants in order to make them, for example, more nutritious or better able to cope with a changing climate. These innovations will be particularly beneficial to small farmers in developing countries. Genetic engineering will become less controversial when people get to see their effectiveness translated into income boosting and the improvement of the diet of millions. Neuromorphic technology – refers to computer chips that mimic the human brain. The emergent artificial intelligence is the science by means of which the computer does the things that people can do. Over the past recent years, the artificial intelligence has advanced significantly and today, for example, self-driving cars are no longer a futurist dream. Also “Sense and avoid” drones – flying robots which check power lines or deliver emergency aids is one of the emerged trends in technologies. (Epure, 2015). Apart from the stated emerging supportive technologies there are countless issues and new ways and methods that render positive impact on economic development. The new enhancements in the information technology sector would continue to evolve newer and better technologies that move production and trade and commerce more effectively. These emerging technologies are assuredly products of skill, entrepreneurship, research and development (R&D), alongside the necessary linkages and synergies engendered through them and through initiatives like clusters and S&T (Science and technology) parks.

Objective of the Study

The work showcases the emerging challenges to economic development of nations alongside emerging technological systems that can support curative measures to address the challenges. It posits that massive skill mentorship and education boosted by targeted R&Ds leading to new skills acquisition and entrepreneurship blown into clustering and science cum technology parks are sine qua non panacea to these challenges.

Methodology

The realities of our times depicted by rising population, sea levels, temperatures, crime rates, terrorism and militancy alongside emerging giant technological strides of our times were studied in parts from observations and the print media. The remaining data for this paper were derived from secondary sources; previous researches and analyses of scholars, government documents; as well as journal articles that are related to the subject. The study involved an extensive study which critically analyzed the positive and negative emerging and contemporary issues and their solvability employing the R&D, skills acquisition, entrepreneurship, clustering and S&T parks as tools.

Skills Acquisition

A skill can be defined as the ability to do something well, usually gained through training or experience. Skill acquisition on the other hand involves the development of a new skill, practice or a way of doing things, usually gained through training or experience. Skill acquisition is the process of enlarging people's choice for a long and healthy life, knowledge acquisition, healthy life, knowledge acquisition for a decent standard of living. Skill acquisition deals freedom from economic, social and education and access and opportunities

for being creative and productive; and enjoying personal self-respect and guaranteed human rights. The central concern of human development is the quality of peoples' lives engendered by what they are capable of doing. Skill acquisition aims at transforming the human person so as to bring about his/her potentials and make him or her leader, who will in turn inspire and empower others to excel and articulate meaningful vision for the society.(Donjor, 2011).

Skills acquisition is considered to be the panacea for most of the challenges facing nations i.e. poverty, insecurity, employment crisis, low level of industrialization, stunted economic growth among others. Skills, knowledge and experience relevant to the labor market are vital to improve employment outcomes and increase productivity. However, education and training systems in most developing countries like Nigeria lack quality and relevance, leaving workers ill-prepared to meet demands of the labor market. Identifying and reducing skills gaps, improving employability and productivity are sine qua non to the development of a veritable workforce in all sectors leading to enhanced productivity that would perk up the GDP. The focus is on the human capital theory which espouses that training and development and skill acquisition will enhance productivity, growth and development. This is the requisite index that developing countries should seek in order to improve the lives of their citizenry in all ramifications (Enu-Kwesi and Asitik, 2012).

People are the real wealth of a nation, when they are skilled. They constitute multidimensional national problems when unskilled. It is through skill acquisition that creativity, initiative, capability, commitment and empowerment that true development can be achieved. In essence skill acquisition means releasing human energy, it means providing an opportunity for people to make the maximum contribution to their own development and to the self-sustaining development of their communities. It is therefore glaring that the need to provide skills is very crucial and vital if poverty is to be reduced or eradicated. Therefore in all essence, developing the human person by providing skill is the real solution to greater part of today's world emerging challenges especially as it helps to reduce the poverty level (Donjor, 2011). When the population is skilled, they can be engaged in profitable economic ventures and progressively only few would be unemployed leading assuredly to crime, militancy and terrorism reduction as well as other germane outcomes.

In order to prevent business failures and to promote SME growth, the lack of appropriate skills must be addressed. The ability to learn and acquire skills seems to be the major difference between organizations that grow and those that find it difficult to grow. The object of skills acquisition can be defined as provoking the union of an actor and a project or process element.

Entrepreneurship

Entrepreneurs are emerging class of economic executors. They are the one who not only help in meeting their goal but by this way they cater the several needs of society knowingly and unknowingly with their excellent enterprising skills. With the increase of entrepreneurship activities all over the world there is a generation of productive and meaningful employment and these employment opportunities are significantly necessary for the emerging economies as they are going to be hub of business activities. Industrial development is based on the entrepreneurial competencies of the people (Sharma and Kulshreshtha, 2014). Basically skills

acquisition is the bedrock of entrepreneurship. The concept of entrepreneurship was first established in the 1700s, and the meaning has evolved ever since. Many simply equate it with starting one's own business. Most economists believe it is more than that. To some economists, the entrepreneur is one who is willing to bear the risk of a new venture if there is a significant chance for profit. Others emphasize the entrepreneur's role as an innovator who markets his innovation. Still other economists say that entrepreneurs develop new goods or processes that the market demands and are not currently being supplied (Ifejika, 2015). The entrepreneurial spirit is a force that inspires others to become the best they can be. It moves the bearer from passion and positivity to leadership, ambition and productivity. The good news is that this force can be acquired through education and mentorship.

Indeed many developers, economist and investors strongly support the notion that entrepreneurship can be cultivated in individuals and that entrepreneurs can be created and made better by acquiring, developing, practicing and refining certain behaviour. It has been argued that acquiring and developing entrepreneurial competencies is more important in the entrepreneurial process than even direct provision of financial resources and consulting support to the entrepreneur. The entrepreneurial function implies the discovery, assessment and exploitation of opportunities, in other words, new products, services or production processes; new strategies and organizational forms and new markets for products and inputs that did not previously exist. The entrepreneurial opportunity is an unexpected and as yet unvalued economic opportunity. Entrepreneurial opportunities exist because different agents have differing ideas on the relative value of resources or when resources are turned from inputs into outputs. The theory of the entrepreneur focuses on the heterogeneity of beliefs about the value of resources. Entrepreneurship can be conceptualized as the discovery of opportunities and the subsequent creation of new economic activity, often via the creation of a new organization (Cuervo et al., 2010).

Entrepreneurship skills are skills that will enable the individual to maximize the resources around him within the limits of his capabilities. Entrepreneurial skills are those activity skills that will enable an entrepreneur to manage his own enterprise. Entrepreneurial skills are the knowledge, attitudes and behaviour one should possess to enable him identify business opportunities, stimulate creativity and transform ideas into practical and economic activities in his organization. Entrepreneurial skills are simply vocational business skills, which an individual acquires to enable him function effectively in business environment. Creativity is the spark that drives entrepreneurial development, and passion is what gets entrepreneurs started (Ifejika, 2015). It can be seen that the results of research and development (R&D) are vivified through entrepreneurship. R&D is expressed through entrepreneurship while simultaneously; in the day to day entrepreneurial activities the creative mind sees new economic avenues requiring R&D to proof.

In the present economic scenario, no country can afford to slow down the pace of its economic growth. The growth of economy business cycle must be in motion, products and services must be purchased. Now the one who can understand the market better will win the race and also contribute to country's economic growth.(Sharma and Kulshreshtha, 2014). When a country

gives its population equitable skills and inculcates the entrepreneurial spirit into them, productivity, economic growth and development are glaringly enhanced. Failing to push veritable action and policies leads the country to the receiving end of the fast growing world economic globalization. Economic globalization refers to the increasing interdependence of world economies as a result of the growing scale of cross-border trade of commodities and services, flow of international capital and wide and rapid spread of technologies. It reflects the continuing expansion and mutual integration of market frontiers, and is an irreversible trend for the economic development in the whole world at the turn of the millennium. The rapid growing significance of information in all types of productive activities and marketization are the two major driving forces for economic globalization (Shangquan, 2000).

Globalization is portrayed as a solution to improving the economies of poor countries. But realities show that though globalization has played various positive roles in the lives of nations as well as individuals as for instance increased access to information through cable and information super highways which has created new global network that have disseminated national boundaries and barriers. This has resulted in a greater integration of the world economy. However, while many western governments have benefited tremendously from globalization, most developing countries are yet to reap the full benefits of this process in their various areas of life such as governance, economy, poverty eradication and health. For them, globalization often increase inequalities and reduces their (developing) nations' ability to achieve national or local food and nutrition security. Such concerns and anxiety among groups are often not virtual but real. For example, according to the 1999 UNDP Human Development Report, more than 80 countries still have per capital incomes lower than they had a decade or more ago and 55 countries (including Nigeria) have had declining per capital incomes. One fundamental dreadful aspect of globalization is the continuous increase level of poverty among developing countries that are supposedly co-actors in the global theatre (Adebisi and Muiyiwa, 2015). A vibrant skilled and entrepreneurial population engaging in R&D and proliferating productive activities can compete in world industry and trade and keep its head above board. This type of progressive workforce can quickly assimilate emerging technologies and employ them effectively thereby enhancing productivity and job creation that would enable the containment of climate change effects and the reduction in the evils of crime, corruption, terrorism and militancy.

Research and Development

Research and Development (R&D) is the term commonly used to describe the activities undertaken by firms and other entities such as individual entrepreneurs in order to create new or improved products and processes. The broadest meaning of the term covers activities from basic scientific research performed in universities and laboratories all the way to testing and refining products before commercial sale or use. The performance of, incentives for and the contributions of R&D are topics that are widely studied in management, economics, and other social science disciplines. Total spending on R&D activities is also one of the most widely used indicators of the innovative performance of firms, industries, and countries. Informal R&D has existed at least since the first person experimented with methods of knapping flint to make Stone Age tools. In a formalized sense, it became part of the arsenal of the modern corporation beginning with the creation of industrial labs in the late 19th century and today it comprises

about 2-3 per cent of the GDP in advanced economies (Hall, 2006). It grew indeed becoming a necessary tool for innovation creation leading to enhancement and continuous growth of entrepreneurial ventures. Research and development (R&D) service departments, institutes and schools perform original investigation or apply research findings to gain new knowledge; they use this knowledge to create new or improved technologies intended to provide a competitive advantage for the business or organization which has requested their services. Industrial R & D is specifically defined as the process of obtaining new knowledge that will eventually result in new or improved products, processes, systems, or services that will benefit the company's sales or growth.

National economic development depends on our capacity to educate, innovate, and build. Long-term national investments in basic and applied research and development (R&D) play an important role in the flow of market-based innovations through a complex system that leverages the combined talents of scientists and engineers, entrepreneurs, business managers and industrialists. These funds have led to everything from small entrepreneurial initiatives to growth in high technology industries with the concomitant employment of millions of workers. The large impact on employment results from innovation impacts not only in high tech enterprises, but also other industries that benefit from increased capabilities and productivity. Mutually reinforcing and complementary investments in R&D by both private and public sectors work in concert to support the development, production, and commercialization of new products and processes (National Science Board, 2012).

In connecting knowledge, innovation and entrepreneurship, it is essential to emphasize the non-routine processes that are conspicuous phenomena of the dynamics of economic development. Knowledge driving innovation is frequently thought of as a linear process, being an outcome of activities labeled R&D. Obviously a set of other processes, such as learning; by doing, cognitive abilities, networking, combinatorial insights, etc., also fuse societal knowledge. Uncertainty, search and experiments are crucial parts of the innovative process. The knowledge generating activities of entrepreneurs and small firms have been shown to be spread across a number of different functional areas (Braunerhjelm, 2010) and it is thus affirmed that R&D is the string galvanizing new knowledge, innovation, creativity, skills and entrepreneurship. They are so interwoven that you hardly miss any in the execution of others. But economic development is fostered by directed need driven R&Ds.

Technology Business Incubation, Clustering, Science and Technology Parks

Technology Business Incubation, Clustering, Science and Technology Parks, Concentration, supervision, direction, common facility and synergy are critical forces of development accruable through the cradles of Technology Business Incubation (TBI), Technology Business Clusters (TBC), and Science and Technology (S&T) Parks. These "Areas of innovation" constitute a physical enclave where innovation, R&D, and the entrepreneurial spirit work for the common goal of economic growth and development through sustainable and indigenous production of goods and services admissible within the socio-cultural setting of the economy. Being together ensures that government directions are spelt out and followed; that experts, specialists and professionals are involved and their synergy are tapped and utilized for the utmost welfare of the peculiar economy.

Technology business incubators are a powerful economic development tool. They promote the concept of growth through innovation and application of technology, support economic development strategies for small business development, and encourage growth from within local economies, while also providing a mechanism for technology transfer. Business incubation is the temporary, facilitative support provided to start-up enterprises through the delivery of complex services and special environment with the aim of improving their chance of survival in the early phase of the life span and establishing their later intensive growth (NSTEDB, 2012).

Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers and associated institutions in a particular field that are present in a nation or region. Clusters arise because they increase the productivity with which companies can compete in an increasingly more competitive global market. Clusters are industry led. Key private industry stakeholders examine the changes and improvements that need to occur within the cluster and then formulate a strategy that includes industry, government and educational institutions. The philosophy behind clusters is that large and small companies in a similar industry achieve more by working together than they would individually (Roback, 2003). Clusters help to increase the association of the innovation, to create new products, new companies and new jobs. Clusters combine the activities of entrepreneurs and local government institutions and research units contribute to the dynamic growth of local economies. Clusters are the chance for many small and medium-sized companies operating locally and not having the possibility of owning output outside their region. Therefore, clusters constitute a good solution for both local companies and for regional economies which drive economic growth.

A Science or Technology park is an organization managed by specialized professionals, whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions. To enable these goals to be met, an S&T park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes; and provides other value-added services together with high quality space and facilities. These “areas of innovation” are places designed and curated to attract entrepreneurial minded people, skilled talent, knowledge-intensive businesses and investments, by developing and combining a set of infrastructural, institutional, scientific, technological, educational and social assets, together with value added services, thus enhancing sustainable economic development and prosperity with and for the community (Sanz, 2017).

Conclusion

It can be seen that the pillar of productivity is Skills and that the continuous interplay and mindful mingling of skills and creativity yields innovative entrepreneurship which is promoted by R&D resulting in skills enhancement and reskilling for improved productivity. Activity proliferation in skilling and innovation creation in incubation centres, clusters and S&T parks are targeted towards sustainable solutions to emerging challenges. When right policies of

government are fostered for the promotion of this culture emerging technologies can be gainfully employed for the country's economic development leading to the general well-being of the citizenry. The role which Skills Development, Entrepreneurship and R&D can play in combating emerging challenges in the development of the economies of countries is glaring and holds out as the only panacea to world underdevelopment and poverty.

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