

Global Growth Sustenance, Industry 4.0 and the Nigeria Context

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Abstract: A popular conception of globalization means it is a business strategy meaning doing everything the same way everywhere. This paper explore current trends on globalization that is hinged on industry 4.0 and how Nigeria as an entity stands to benefit from it if the current global growth is sustained. The paper explore the issue of industry 4.0 vis-à-vis some key economic sector of Nigeria. These include agriculture/industry, information and telecommunication and most essentially youth employment. The paper identified training and retraining of the youth as a panacea to sustained economic growth. The paper equally identified the Agricultural sector, information and telecommunication sector, mining and solid minerals sectors as key area that needed to comply with industry 4.0 taking cognisance of youth empowerment. The paper recommends that digitization and automation should be seen to improve the lives of the citizenry and by working together the economic community can create better chance for the people. By understanding each other better we will have a world order of peace and tranquillity. Nigeria needs to embrace technology, because technology drives globalization.

Keywords: Globalization, Industry 4.0, Youth Employment, Training and retraining.

1. INTRODUCTION

Geography has made us neighbours. A popular conception of globalization means it is a business strategy meaning doing everything the same way everywhere and it is the interconnection between overlapping of interest and the society. It is equally perceived as a process whereby worldwide interconnection of every sphere of human activities is growing and moving across natural boundaries. Global boundaries affect organization concentration on six human activities.

1. Global business and industrial activities
2. The influences on the natural environment where they operate
3. Culture is globalized.
4. Linkages within the global economy will always arise.
5. These links are influenced in a relationship between foreign direct investment and
6. It facilitates trade and global economy in the natural environment that support it.

In general term, globalization is the trend towards greater economies, cultural, political and technological interface among natural institutions and the economies. It is the issue of technological interfaces with industrialization that industry 4.0 tends to address.. The paper stand to explore the current trends in globalization that is hinged on industry 4.0 and how Nigeria as an entity stand to benefits from globalization if the current global growth is sustained. The other objectives include-;

1. To identify key sector of the Nigeria economy where the issue of globalization can benefit Nigerians.
2. To examine the role of the business schools and managers in global growth sustenance and
3. To emphasize the issue of training and retraining of Nigerian youth has a panacea to sustainable global growth.

Meaning and concept of Industry 4.0

Industry 4.0 stands for the fourth industrial revolution. It is also been referred to as industrial internet or digital factory. Industry 4.0 focuses on the end-to-end digitization of all physical asset and integration into digital ecosystems with the value chain partners.

Generally, analyzing and connecting data seamlessly underpins the gains promised by industry 4.0, which network a wide range of new technology to create values. While the term industry 4.0 is becoming increasingly familiar, we use it in this study in relations to various economic sectors in Nigeria.

2. THEORETICAL BACKGROUND

This paper is theoretically domiciled in two theories. These are infant industry protection theory and Linder's hypothesis. The **infant industry protection theory argument** is in the direction of an economic rationale for trade protection. The core of the argument is that nascent industries often do not have the economies of scale that their older competitors from other countries may have, and thus need to be protected until they can attain similar economies of scale [Wikipedia,2017]. Because industries in Nigeria is assumed to be at the infant stage and thus needed protection calls for the relevancy of this theory to this paper. Despite this, infant industry protection is controversial as a policy recommendation. As with the other economic rationales for protectionism, it is often abused by rent seeking interests. Even when infant industry protection is well-intentioned, it is difficult for governments to know which industries they should protect [Wikipedia,2017].

Linder hypothesis proposes an economics conjecture about international trade structure: The more similar the demand structures of countries, the more they will trade with one another. This is one of the salient points in the discussion of globalization. Furthermore, international trade will still occur between two countries having identical preferences and factor endowments. The hypothesis was proposed by economist Staffan Burenstam Linder in 1961 as a possible resolution to the Leontief paradox, which questioned the empirical validity of the Heckscher-Ohlin theory [Wikipedia,2017]. Linder proposed an alternative theory of trade that was consistent with Leontief's findings. The Linder hypothesis presents a demand based theory of trade in contrast to the usual supply based theories involving factor endowments. Linder hypothesized that nations with similar demands would develop similar industries. These nations would then trade with each other in similar, but differentiated goods. Trade liberalization and exchange is the core of this theory. Nigeria is endowed with all the basic factor of production. The question now becomes should Nigeria trade only with those countries that are endowed in similar factors of production. The answer to the question makes this hypothesis relevant to this study.

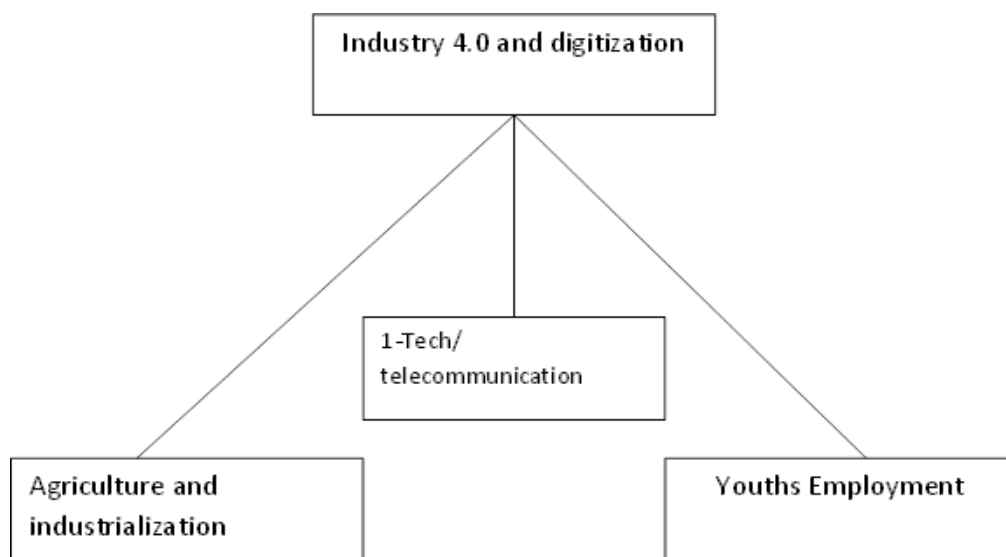


Fig. 1 Conceptual foundation

Industry 4.0 and the Agricultural Sector in Nigeria:

Many African countries including Nigeria rely so much on export of traditional cash crops and other natural resources. The south-west Nigeria is noted for export of cocoa, cola nut, and bitter cola, while, the Northern Nigeria is noted for export of commodities such as, millets, soya beans, groundnut to neighboring countries and countries that are in need of these commodities. The south-south produces the crude oil which are been exported by the Nigerian government. According to expert on Africa growth initiatives, one popular approach to remedy reliance on export of raw goods is to discourage the export of raw material of primary commodities and to promote domestic processing of these products before exporting them. Such value addition would possibly help create higher productivity, job opportunities, energize local economic activity and improve trade imbalance by providing more foreign exchange (Adekoya, 2016). This value addition will encourage industrialization in those geographical locations and those industries could now be digitalize to meet the current global trends in manufacturing process. The process of industry 4.0 will digitize and integrates process vertically and horizontally along the industry system. The inclusion of industry 4.0 technology will track and trace devices to real time integrated planning with execution.

Industry 4.0 , I-Tech and telecommunication sector in Nigeria:

Nigeria will need to focus and learn the practice in fostering technology transfer and identifying critical innovation barriers and gaps to achieve increased productivity and structural transformation of its economy. Digitization and automation is crucial in the information technology and telecommunication sector. Instead of importing technology, Nigeria could establish i-tech centres that could serve as the i-tech industry. This onus lies on the federal ministry of science and technology. For instance, media telecommunication is supposed to have been on digitalizing production having expended so much money into the process for the past ten years. It is expected that by this year media content on the local television will now be digitalize.

Recently, the president of the Startime group disclose that Startime has always been sticking to the mission that every Nigeria family could afford digital TV of high quality and step into the digital age [Adepetun, 2016].

According to Orimisan [2016], there are indicators that more than two billion people globally will use mobile devices to connect to the internet in 2017. Nigeria is one of the country that is noted in increased use of the internet facility next to China, India and Indonesia. The focus of this paper is not in the usage of the I-Tech and telecommunication productions but in the participation of Nigerians in the manufacturing of the component of the equipments to facilitate jobs opportunity and employment for the youth. If more than 20 million Nigeria participate in the manufacturing of the telecommunication components as they do in the usages, the country's economy to a large extent will appreciate.

Employment opportunity for youths in Nigeria:

Youth employment crises are no longer a mirage in African, in particular Nigeria. This gave credence to the recently endorsed global initiative on decent jobs for youth worldwide. According to Gay Ryder [2016], it represented an exemplary system wide effort for the achievement of the 2030 agenda for sustainable development in particular of goal 8 on inclusive and sustainable economic growth, employment and decent work for all. Accordingly, the initiative proposes to [1] engage key stakeholders in high level policy action on youth employment. This mean that seminars will be arranged, discussion will be handled with leader of the nation on the importance of and the development of key policy document that will position the youth in a better position to get better job. Second, the initiative aim to expand and scale up national and regional polices and interaction on youth employment. The implication of this is that polices will be expanded along the regional line like Africa, Asia, America, and role policy document will be tamed toward generating more decent jobs by the regional leaders. Third, pool existing expertise and enhance knowledge of what works for youth employment. What this implies is that researchers will be conducted and research findings will be adopted to match with what works well for each region. Finally, leverage resources from existing facilities while also mobilizing additional resources. The beauty of all these propositions first and foremost is that Nigeria government need to fully take part in all the processes involve in these initiatives to meet up with the 2030 Agenda for sustainable development. Moreover, policy issue is germane in the initiatives. This bring to the fore the importance of policy formulation and implementation. In this case, towards securing decent employment to the ever teeming youth in Nigeria. Policy document should be produce to specify what should be done, how it should be done, who should do it and where action should take place when it comes to positioning Nigerian youth for decent employment. This policy document should be seen to transcend from the Federal government at the center through the State government to the Local government authority. Established private sectors and long serving Multinationals in the country should also be forced to take part in the implementation of the set policy towards position the Nigeria youth for decent job .

The Issue of Training and Retraining:

In Nigeria, management is learnable and teachable. Although managerial education provided by universities may be insufficient, companies have to develop their own programs or made cooperative arrangements with schools. One such cooperative arrangement is the apprenticeship system.

Matching Internal and External Training together: The Apprenticeship scheme:

An apprentice should obtain practical experience by working in the well established technically oriented companies and learns theoretical concepts in a vocational school. We suggest that vocational training will be useful for reducing the number of school dropouts in the country as a whole. We suggests that some youth in Nigeria would prefer to be in attaining-employment program in such a way that they are attached to a mentor rather than continue a straight jacket school. Although the apprenticeship system is not managerial training programs as such, but the apprenticeship programs play a vital role in preparing future managers for their job. These programs, if supplemented by additional education, will provide the foundation for the development of first-line supervisors in Nigeria Technologically driven companies and as such take advantages of Industry 4.0 benefits. The government should set the standards for all available technical and science oriented occupations. For example, an apprentice auto mechanic may be required to learn some basic skills, such as how to use a file, lathe, and drill, while working in the company. These activities may be supervised by a trainer (supervising ten to fifteen young people), a manager, and a director. The apprentices work may usually not contribute to the short-term profit of the company that he is attached to but at the long run the firm will reap the benefits. Typically, these apprentices engage in projects, such as preparing an iron cub that are carefully evaluated for accuracy, surface preparation, proper and precise angles. Advanced auto mechanic training requires working on more complex car components, such as automatic transmissions or engines.

In addition to having apprentices attend vocational training courses, many big firms should offer in-house classroom training. Thus apprentices not only learn about the products or services of the firm but also may be taught foreign languages, which are important for technicians or managers that can manage workers from other countries . Social activities should not be neglected during the apprenticeship training period. For example, apprentices should have the opportunities to participate in company-sponsored cooperate social responsibility programmes in competitive sports such as soccer or track-and-field events, and other recreational activities. In a sense, apprenticeship training is really a continuation of basic schooling with an emphasis on job skills. This is reflected in the fact that at the end of the training, apprentices take an exam administered by the public vocational school. In addition, the apprentices must meet company requirements.

Although the wages for the apprentices are low, the training is quite costly to the company, especially since a trainee may leave the company after completing the program. Most apprentices may stay with their company if they are willing to and the company makes provision for such in –house absorption, and so the long-term investment for the company will pay off. Without apprenticeship programs Nigeria firms may not be so successful in marketing their quality products and services around the world.

The message is that investment in the training of technicians results in higher product and service quality. If Nigeria Firms can train about 1.8 million youth, or 6 percent of the work force, the issue and problems associated with unemployment will be reduce. As an example, the importance of technical training is illustrated in the effort by Daimler-Benz, the maker of Mercedes cars. In 1987, over 5500 people were involved in technical professional training, with about 1600 graduating in that year. During the apprenticeship training, the young people divide their time between working on the job and attending school. In this way, practical experience is supplemented by theoretical knowledge that can be applied on the job. Teaching skilled workers and trained technicians the theoretical foundation of their work creates professionals who will continually make efforts to improve productivity [Koontz, 2010].

The Vocational Academy [VA]:

While apprenticeship training emphasizes technical knowledge and skills, it does not usually teach managerial skills. In recent times, the need for teaching managerial skills and integrating theory with practice has been recognized. Vocational Academy can be devised to address these needs.

Vocational Academy, a managerial training model, which focuses on technology, social sciences, and business, rather than on academic subjects, has been considered an important alternative to university studies. The Academy should have the following characteristics:

1. Proper integration of theoretical and vocational education is required. The academy should teach both theory and practical.

2. Students must have a vocational contract with an enterprise or a social institution to be admitted to the Academy.
3. The Academy and the enterprise should have equal authority in determining the educational goals for the student.

One can conclude that the vocational academy programme, integrating theory and practical experience, will fill an important business education gap not filled by traditional universities and apprenticeship programs. This cooperative model, involving the Academy, industry, and government, will show encouraging results. It may stimulate companies in Nigeria to search for alternative training methods for developing managers and increasing productivity.

The role of the business school:

So far the discussion has centered on training and development for lower- and middle-level workers; now the focus shifts to training for upper-level management. Managers in many firms have been criticized for an apparent lack of sufficient knowledge and skills necessary for managing globally. Specifically, demands on today's global managers include the ability to think globally, an understanding of the mentalities of managers in other countries, managerial experience abroad, and proficiency in speaking at least two foreign languages.

Specifically, the role of the Business school should include training the graduate managers and ensuring that they:

- Have a sound university or college degree
- Have a good understanding of managerial economics
- Make sure the graduate is a generalist
- Being proficient in English and any other foreign language

In the Globalized world, marked by fierce global competition, in which only the most productive organizations survive the competitive environment necessitates a second look at human resource training and development. Managers should evaluate the suitability of cooperative training by industry and educational institutions.

3. CONCLUSION AND RECOMMENDATIONS

Training and retraining of the youth has been identified as the only metaphor to achieving sustainable global growth that is hinged on industry 4.0. in all sectors of the Nigeria economy. There must be continuous training and retraining of the employable youth, workers and managers to meet the current trends of globalization as it pertains to industry 4.0. National economy is about improving the life of the citizenry. These has poses a challenge to all the business schools and training institution alike The benefit of industry 4.0 is to make sure that digitization and automation should be seen to improve the life of the citizenry. How can industry 4.0 achieve this feat in Nigeria economy for sustain global growth? Education remains pivotal. Here the idea of STEM steps in. Scientific, Technological, Engineering, and Mathematics [STEM] education is unavoidable. All countries including Nigeria should benefit from economic international development coordination of policies. By that we will be moving towards globalization that will sustain the world. Economic development and social development will ensure that people have a better life. By working together the economic community can create better chance for the people. By understanding each other better we will have world order of peace and tranquillity. Globalization should be seen in terms of infrastructure development. Finally, Nigeria needs to embrace technology, because technology drives globalization.

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