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**Scientific Innovations in Entrepreneurship for Sustainable Growth and Development of Nigerian Economy**

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**Abstract**

Nigeria is still not economically developed because it lacks scientific innovation in entrepreneurial activities. This study examined scientific innovation in entrepreneurship for sustainable growth and development of the Nigerian Economy. It explained concept of scientific innovation, entrepreneurship and sustainable growth and development. This paper was anchored on the theory of Psychological Theory of Achievement Motivation by McClelland, Sociological Theory of Capitalism by Max Weber, Innovation Theory of Joseph Schumpeter and Economic Theory of Richard Cantillon. The paper revealed the effect of scientific innovation on entrepreneurship for sustainable growth and development which include to spur economic growth, add to national income create social change and community development. Also the challenges to scientific innovation in entrepreneurship were highlighted. It was concluded that the inclusion of scientific innovation in entrepreneurship is the key component of economic success, underpinning the ability to create new products and jobs that keep us competitive on the world stage. Finally it was recommended that there is an urgent need for the Nigerian government to provide an enabling environment in the forms of efficient and available basic infrastructural facilities, especially electricity and carrying out of complete feasibility study report to identify the viability, strength and weakness of a new venture should be properly done by entrepreneurs amongst others.

*Keywords:* entrepreneur, entrepreneurship, scientific innovation, sustainable growth and development

**Introduction**

Innovation is the specific tool of entrepreneurship by which entrepreneurs exploit change as an opportunity for a different business or service. There is considerable overlap between entrepreneurship and innovation (Ofili, 2014). Entrepreneurship, in its narrowest sense, involves capturing ideas, converting them into products and, or services and then building a venture to take the product to market (Imafidon, 2014). Entrepreneurship is the result of any human action undertaken in order to generate value through the creation or expansion of economic activity. In fact, entrepreneurship can only be understood as a multidimensional reality, even if that reality is often difficult to identify (Landström, 2020; Fayolle, 2018)

Innovation and entrepreneurship are the key components of economic success, underpinning the ability to create the new products and jobs that keeps us competitive on the world stage. Innovation and entrepreneurship thrive in an ecosystem that supports advances in science, technology, engineering, mathematics (STEM) and promotes interdisciplinary collaboration to adapt new ideas into creative solutions to everyday challenges. (Landström, 2020). To maintain global leadership, we need to increase investment in research and development (R&D) and tap into the innovative abilities of our diverse and inclusive workforce. Recently, however, Nigeria has failed to fully support all aspects of the innovation and entrepreneurship ecosystem. Innovation and entrepreneurship don't happen overnight; they are fostered by a sustained commitment to every step of investment in research and development (R&D) and commercialization lifecycle (Garcia & Calantone, 2002).

According to (Landström, 2020) innovation in entrepreneurship is a system that;

- embraces high-risk, high-impact research and cultivates the development of novel applications from those research ideas;
- uses robust and enabling technology transfer and commercialization capability for moving new innovations to the marketplace and;

- have a well-trained, determined, and diverse workforce focused on problem solving that can nurture and develop those ideas.

Nigeria is among the third world country which are richly endowed with human and natural resources. Even at that, Nigeria is still not economically developed because the country has so many features of underdevelopment which among others include; high unemployment rates, heavy dependence on oil, low agricultural production, low utilization of industrial capacity, high inflation rate, low literary level, poor state of infrastructure, low income per head, subsistence agricultural practices, low industrial capacity, absence of stable polity, high infant mortality and lack of industrial infrastructural base.

These constrains has been limited to lack of scientific innovation in entrepreneurial activities in Nigeria. Tapping these resources require the ability to identify potentially useful and economically viable fields of endeavors'. Thus, entrepreneurship activities and innovative ingenuity in Nigeria will foster economic growth of Nigeria through applying scientific knowledge in the area of entrepreneurship. Therefore, this study sets out to investigate the impact of scientific innovation in entrepreneurship and how it affects the economic growth and development of Nigeria.

### **Objectives of the Study**

The objective of this study is to investigate scientific innovations in entrepreneurship for sustainable growth and development of Nigeria economy.

The specific objectives are to:

- (i) ascertain the relationship between scientific innovations and entrepreneurship
- (ii) ascertain the effect of scientific innovations in entrepreneurship and sustainable growth and development of the Nigerian economy.

### **Concept of Scientific Innovation**

Scientific innovation is the practical implementation of ideas that result in the introduction of new goods or services or improvement in offering goods or services. Innovation can *refer to something new*, such as an invention, or the practice of developing and introducing new things. An innovation is often a new product (Adegboye, 2018). Many definitions have been proposed to explain innovation, and as a result the term has gained greater ambiguity (Garcia & Calantone, 2002). A number of process models have been developed in the literature suggesting that innovation consists of a variety of different phases: idea generation, research design and development, prototype production, manufacturing, marketing and sales (Johnson, 2001; Knox, 2002; Poolton & Ismail, 2000). However, theorists have suggested that there is more to innovation than the process. Innovation thus has many facets and is multidimensional. Also many definitions of innovation focus on the concept of newness. The newness theme is especially important to understanding the link between innovation and entrepreneurship as suggested by prior studies that emphasize its pivotal role in new venture creation and management: "new business startup", "new entry", "new organizations" and "organizational renewal" (Guth & Ginsberg, 1990). With these innovation concepts in mind, (Johnson, 2001) developed a study that investigated six different types of innovative activity:

- New products;
- New services;
- New methods of production;
- Opening new markets;
- New sources of supply; and
- New ways of organizing.

### **Concept of Entrepreneurship**

An Entrepreneur can be defined as an innovating individual who has developed an ongoing business activity where none existed before (Adegboye, 2018). Imafidon (2014) observe that entrepreneurship is more than simply "starting a business". It is a process through which individuals identify opportunities, allocate resources, and create values.

This creation of values is often through the identification of unmet needs or through the identification of opportunities for change. It is the act of being an entrepreneur which is seen as “one who undertakes innovations with finance and business acumen in an effort to transform innovations into economic goods hence entrepreneurs see “problems” as “opportunities” and then take action to identify the solutions to those problems and the customers who will pay to have those problems solved (Onoh, 2017).

Entrepreneurial success is simply a function of the ability of an entrepreneur to see opportunities in the marketplace, initiate change (or take advantage of change) and creates value through solutions (Thompson, 2019). Entrepreneurship is known as the capacity and attitude of a person or group of persons to undertake ventures with the probability of success or failures. It demands that the individual should be prepared to assume a reasonable degree of risks, be a good leader in addition to being highly innovative (Ebiringa, 2012). In business management, Entrepreneurship is regarded as the “prime mover” of a successful enterprise just as a leader in any organization must be the environmental change agents (Adegboye, 2018).

Shane (2003) defined entrepreneurship as the process of using private initiative to transform a business concept into a new venture or to grow and diversify an existing venture or enterprise with high growth potential. Entrepreneurship is the act of being an entrepreneur, which can be defined as “one who undertakes innovations, finances and displays business acumen in an effort to transform innovations into economic goods”. This may result in new organizations or may be part of revitalizing mature organizations in response to a perceived opportunity (Nelson, 1993).

Entrepreneurship can be developed enterprises in the following areas: foodstuffs, restaurants, fast food vending, quarrying, germ stone cutting/polishing, power generations, haulage business (cargo and passengers), manufacturing and repairs of GSM accessories and the printing and selling of recharge cards, construction and maintenance of pipelines, drilling, refining by products, refuse collection/disposal, recycling and drainage/sewage construction job, banking, insurance and stock trading, machines and tools fabrications. There is also the building and construction, where there are plan and design services and material sourcing fashion designing, photography, software production and sales etc. (Agbeze, 2012). Entrepreneurial development is conceived as a programme of activities to enhance the knowledge (body of knowledge), skill, behaviors and attitudes of individuals and groups to assume the role of entrepreneurs as well as efforts to remove all forms of barriers in the part of entrepreneurs to create society’s wealth for human capacity building. Entrepreneurship development is therefore the bedrock for human capacity building.

### **Scientific Innovation and Entrepreneurship**

Scientific innovation involves the successful exploitation of new ideas to generate new techniques, products and processes. According to (Nelson, 1993), innovation encompasses “the processes by which firms master and get into practice product designs and manufacturing processes that are new to them.” Such a broad understanding of innovation is particularly meaningful within the context of innovative entrepreneurship insofar as upgrading technology or improving skills may lead to more efficient uses of resources or higher-quality outputs, but not necessarily to new products or patents. When innovation is included in the analysis, it is important to distinguish between innovation and invention (Fagerberg, 2006). (Fagerberg, 2006) shows, both are closely linked, and it is very difficult to distinguish one from another. But in many cases, there is a considerable lag between the two. However, a main difference between invention and innovation is that the former may be carried out anywhere, while innovation occurs mainly in firms that need to combine several different kinds of capabilities, knowledge, resources and skills (Fagerberg, 2006).

According to (Herbig et al., 1994) “Innovation requires three basic components: the infrastructure; the capital; and the entrepreneurial capacity needed to make the first two work”. Moreover, innovation has to address market needs, and requires entrepreneurship if it is to achieve commercial success (Zhao, 2001). For this reason, it is important to introduce in the analysis the role played by the entrepreneur and to determine those elements or factors that would have any effect on him (Aghion & Howitt, 1998).

Nielsen and Lassen (2012) considers that entrepreneurship activity implies innovation in the introduction of a new product, organization or process, generating a destruction process. Thus, the

entrepreneur is an actor who initiates and implements innovations. Entrepreneurs seek opportunities, and innovations provide the instrument by which they might succeed. Corporate entrepreneurship often refers to the introduction of a new idea, new products, a new organizational structure, a new production process, or the establishment of a new organization by (or within) an existing organization. From this perspective, we can presume that innovation would promote their activity, creating a feedback effect. That is, entrepreneurs innovate and the innovations stimulate other entrepreneurs to carry out their activity (Dooley, & O'Sullivan, 2001),

### **Sustainable Economic Growth and Development**

Sustainable economic development means a process of upward change whereby the real per capita income of a country increases over a period of time (Arokoyu, 2004). The Nigerian economy is one of the most developed economies in Africa. According to the UN classification, Nigeria is a middle-income nation with developed financial, communication and transport sectors. It has the second largest stock exchange in the continent. The petroleum industry is central to the Nigerian economic profile. It is the 12th largest producer of petroleum products in the world. The industry accounts for almost 80% of the GDP share and above 90% of the total exports. Outside the petroleum sector, the Nigerian economy is highly amorphous and lacks basic infrastructure. Several failed efforts have been made after 1990 to develop other industrial sectors (Shobhit, 2019). Development does not occur spontaneously, it is as a natural consequence when economic conditions in some sense are right. A catalyst is needed and this requires entrepreneurial activity to a considerable extent, the diversity of activities that characterizes rich countries can be attributed to the supply of entrepreneurs (Shobhit, 2019).

### **Effect of Scientific Innovation in Entrepreneurship on the Economic Growth**

The link between innovations in entrepreneurship as a catalyst of sustainable economic growth cannot be overemphasized. The impact of entrepreneurship on the sustainable economic growth of the Nigerian economy is difficult to accurately measure or estimate, but it is believed to be highly dynamic and significant. Scientific innovation is thus important for a number of reasons, from promoting social change to driving innovation which according to (Thomas, 2019) is as follows;

#### **Spur Economic Growth**

New products and services created by entrepreneurs can produce a cascading effect, where it stimulates related businesses or sectors that need to support the new venture, furthering economic development (Imafidon, 2014)

#### **Add to National Income**

It helps generate new wealth. Existing businesses may remain confined to existing markets and may hit the glass ceiling in terms of income. New and improved products, services or technology from entrepreneurs enable new markets to be developed and new wealth to be created. Additionally, increased employment and higher earnings contribute to better national income in the form of higher tax revenue and higher government spending. This revenue can be used by the government to invest in other, struggling sectors and human capital. Although it may make a few existing players redundant, the government can soften the blow by redirecting surplus wealth to retrain workers. (Adegboye, 2018)

#### **Create Social Change**

Through offering unique goods and services, entrepreneurs break away from tradition and reduce dependence on obsolete systems and technologies. This results in an improved quality of life, improved morale, and greater economic freedom. For example, the water supply in a water-scarce region will, at times, force people to stop working to collect water. This will impact their business, productivity, and income. Imagine an innovative and automatic pump that can fill people's water containers automatically. This type of innovation ensures people are able to focus on their jobs without worrying about a basic necessity like water. More time to devote to work translates to economic growth (Arokoyu, 2004).

Moreover, scientific innovation in entrepreneurship makes entrepreneurs in lesser-developed countries like Nigeria have access to the same tools as their counterparts in richer countries. They also have the advantage of a lower cost of living, so a young entrepreneur from an underdeveloped country can compete with a multi-million-dollar existing product from a developed country (Thomas, 2019).

### **Community Development**

Where new and improved products through scientific innovation are produced, new markets is being developed. This enables further development beyond their own ventures. Some famous entrepreneurs, such as Bill Gates, have used their money to finance good causes, from education to public health. The qualities that make one an entrepreneur are the same qualities that help motivate entrepreneurs to pay it forward (Boumol & Strom, 2007).

### **Challenges of Scientific Innovation in Entrepreneurship**

Shobhit (2019) seems to present many obstacles that hinder scientific innovation in entrepreneurship. They are stated as follows:

- Sometimes innovations aren't well received by clients. Sometimes the customers are reticent towards new idea and stuck to the same old formula.
- Innovation cannot prosper without suitable culture. Our employees have not evolved in a favorable innovation culture, as in their educational and training they were not encouraged to be creative, to take initiatives and propose new ideas
- Lack of Government support - it is hard to innovate in Nigeria because there is no aid from the government side to encourage companies to "think outside the box" and to create something new or something different.
- Lack of Funding. It is very hard to find or access the needed capital (funds) required to promote the new product or services.
- Fear of changes - change brings new methods of doing business but some proprietor refuse to adapt to change. They fear that bringing new changes may put them out of business or rub them of their position as managers.
- Poor infrastructure - poor infrastructure is one of the major challenges of entrepreneurial innovation in Nigeria, there is epileptic power supply, inadequate water supply and bad road network.
- Unfavourable and unstable government policies: unfavorable government policies inform of banned of importation of certain raw materials, products and services; high exchange rate and policies on naira and high currencies of the world like dollar and pounds and multiple tax system.

### **Theoretical Framework**

The theoretical foundation of this paper is based on the Psychological Theory of Achievement Motivation by McClelland, Sociological Theory of Capitalism by Max Weber, Innovation Theory of Joseph Schumpeter and Economic Theory of Richard Cantillon. These theories are briefly discussed below;

#### **Psychological Theory of Achievement Motivation**

This theory was propounded by McClelland David in 1961 holds that people have three motives for accomplishing things: the need for achievement, need for affiliation, and need for power. This underscores achievement, power, desire for accomplishment, personal locus control, etc. the thinking here is that there is an inner urge or drive or force in a person that makes him/her desire a change of status or position. Outside environment and innovation, there are other variables associated with a person's desire for achievements which appears to be a driving force behind and undertaking or venture (McClelland, 1961)

### **Sociological Theory of Capitalism**

Max Weber's sociological theory was propounded in (1864-1920). The theory viewed religion as the major driver of entrepreneurship and stressed on the spirit of capitalism, which highlights economic freedom and private enterprise. Capitalism thrives under the protestant work ethic that harps these values. The right combination of discipline and an adventurous free-spirit define the successful entrepreneur. The theory contends that an individual's environment is a key player in developing entrepreneurship spirit in a person and that ideas, traits, and motives are not enough on their own for entrepreneurship to manifest in a person. According to this theory there must be an enhancing environment as a predisposing factor before business opportunities can be harvested (Nnadi & Maduagwu, 2015).

### **Economic Theory**

Richard Cantillon (1680-1734) was the first of the major economic thinker to define the entrepreneur as an agent who buys the means of production at certain prices to combine them into a new product. He classified economic agents into landowners, hirelings and entrepreneurs, and considered the entrepreneur as the most active agents connecting the producers with customers (consumers).

### **Innovation Theory**

Schumpeter (1930) sees an entrepreneur as one having three major characteristic; innovation, foresight, and creativity. Innovation as a theory of entrepreneurship is the driving force behind entrepreneurship. The argument holds that every oriented venture is a function of innovation and that without innovation, the theory of entrepreneurship does not exist.

### **CONCLUSION**

Entrepreneurship development is the race of the moment. Any country left behind in this race will remain perpetually undeveloped. This underscores the recent attention given to scientific innovation in entrepreneurship for sustainable economic growth and development. It can be concluded that the inclusion of scientific innovation in entrepreneurship is the key components of economic success, underpinning the ability to create the new products and jobs that keeps us competitive on the world stage. Innovation and entrepreneurship thrive in an ecosystem that supports advances in science, technology, engineering, mathematics (STEM) and promotes interdisciplinary collaboration to adapt new ideas into creative solutions to everyday challenges.

### **RECOMMENDATIONS/WAY FORWARD**

Innovation in entrepreneurship is one of the major ways of creating job for people in Nigeria, it is thus recommended that;

- Carrying out complete feasibility study report to identify the viability, strength and weakness of a new venture should be properly done by entrepreneurs
- There is an urgent need for the Nigerian government to provide an enabling environment in the forms of efficient and available basic infrastructural facilities, especially electricity.
- Also venture capital should be provided through micro-finance banks and other specialized agencies to adequately empower young entrepreneurs.
- There should be introduction of entrepreneurship course across faculties and departments as general courses in the country.

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