THE IMPACT OF TECHNOLOGICAL INNOVATION ON PRODUCTION

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Abstract.
Technological Innovation which implies the development of new thoughts, items, administrations, and procedures that will improve technology solutions has provided a better lifestyle by improving the standard of living in the area of production. Due to the rapid developments made by humankind in terms of scientific and technological innovations, which signaled the industrial revolution, and growth of mega-industries across the turn of 20th century which although lead to an increase in standard of living, coupled with an unprecedented economic growth rate and a rapid increase in population growth rate around the world, has led humanity to stretch and put serious strain on the natural resources and environmental limits of the earth. The deficiencies in production has gradually been combated but it was discovered that innovation from technological bearing has played a significant role in the productivity outcomes of most production processes. This paper focuses on brief views on technological innovation and the impact of construction technology, agriculture technology, biotechnology, nanotechnology and health biotechnology on production

Keywords; Production, Innovation, Technology, Advancement,

1. INTRODUCTION

Technological Innovation implies developing new thoughts, items, administrations, and procedures that will improve technology solutions has provided a better lifestyle by improving the standard of living in the area of production. Innovations are simply regarded to be the outcome of skilled labor force, business activity, significant research and development intensity with linkages to the most crucial centers of excellence in the scientific world. [1], [3]. The importance of innovation is broader however, it does not comprise of only new products or processes, but includes improved ones which have resulted from callow-tech sectors, that might have economic and social effects. In an attempt to boost innovative activity of production enterprises, specifically technological innovation, there exist an increase in awareness worldwide so as to maintain or
enhance the competitiveness. The emergence of new methods in technology innovation has contributed immensely to its benefits [4].

Technological innovation was regarded as a development during the early fifties, presently it is regarded as the process for dealing and resolving issues that are mainly focused on the product and its different agents with the exchange of information that facilitates learning from various approaches. It is very crucial to emphasis on technological innovation as the world is experiencing the greatest wave of municipal growth due to the increase in the number of people, specifically in towns and cities [6]. For more than fifty years, 1.3 billion population lives in rural cities, and 570 million people live in urban cities. It is expected that, the population living in cities, particularly in developing countries, would have skyrocket by 2050 [8]. Thus, the challenges created by urbanization are among the most crucial issues of our time which has prevented an utmost opportunity for the private sector to bring in new thoughts of innovation. The utilization of technology creates a sustainable living environment for people. Furthermore, difficult issue is experience when transforming a city through technological innovation. This paper provides a discussion on the impact of technological innovation on production. The effects of innovation in production development has fascinated the attention of economists, since 1776 whose productivity gains is not only from specialization through technological advances but, identifying the role implemented by research and development activities or technology transfer in the economy [9]. Thus, product innovation is being considered because it improve the quality and variety of products, create demand minimize cost on new products thereby leading to production, income growth and employment. Studies have shown that organization with innovative activity dealing technology do record greater profit than other firms, so that the effect on employment irrespective of industry, size or other characteristics of firms is positive [9], [10]. In this paper, brief views on technological innovation and the impact of construction technology, agriculture technology, biotechnology, nanotechnology and health biotechnology on production.

2. FINDINGS FROM LITERATURE

F. Malerba., [18] described invention as new idea, scientific discovery or a technological newness while innovation refers to application of new ideas. Innovation is described, therefore, to be an outcome of a process that emanates with an idea and continues with its materialization. Chan, [2]
describes technological innovations as significantly improved technological products and processes, where innovation arises. There is need for data combination, human, financial in order to turn an invention to innovation.

Jiaji et al., [5] describes technological innovation as an integrated process with activities of technology, organizations, business and finance. From this process, new products and production technique are exploited in order to obtain semi-finished products.

Jiang (2001) investigated the dynamic mechanism of technological innovation. The work claimed that six crucial parameters are the main driving force of technological innovation. These factors comprises of the benefit drive, social demand, the driving force of employee enterprise, driving force of technological growth, market competition and the driving force of government. The first four enable enterprises to gather technological skill, execute technological innovation while the remaining are external which trigger an enterprise to produce innovation. Based on the important of technological innovation, Xia, [22] noted that competence should be re-defined as being under the circumstance of certain scale, technology and economy. It is vital that entrepreneurs utilize obtainable resources for technological innovation by considering the economic nature of a developing country.

According to Mytelka., [13]. Technological innovation is the process by which organizations implements the design and production of goods and services that are new to them regardless of whether they are different to their competitors, clients or the world. In addition, it involves the scheduling of activities such as the application of new technology and techniques; implementing new systems in production; enhancing the quality of production; new production; providing new service; new product exploration. According to Li, [10], technological innovation encompasses a series of activities which includes the conceptualization of new ideas, products design, producing in volume. It is a process of creating and applying knowledge.

Nuchera et al., [17] stated that appropriate management of technology is regarded to be among the vital keys to success in production today. Han et al. [8] proposed the vision of a sustainable urban future in 2050 by describing different technological advances in transportation, buildings, and industries which can contribute towards obtaining a low carbon society, Kourtit et al., [6]. suggested routes for strategic innovation in urban policy which include developing urban cluster for creativity and technological innovation; utilizing technological opportunities; leaving
foundation for unity and social capital; In essence, it means the future of urban should focus on judicious utilization of materials, equipment’s and chances towards the production growth.[7],[12].

3. **IMPACT OF TECHNOLOGICAL INNOVATION**

Technology is the manufacturing, alteration, utilization and understanding of instruments, machines and organizational methods to solve an issue, attain an objective, execute a particular task. It comprises of; construction, health, biotechnology, agricultural and nanotechnology technology.

**Construction technology.** It deals with the fundamental elements of site works, settings out etc together with basic services such as water. This process performs the operation of extraction of either eatable or non-eatable, processing and transportation of raw materials throughout the world [7], [11].

**Health Technology:** It denotes any intervention with an improved equipment’s faster than human which can be utilized to prevent prevention, administer treatment and ailments recuperation. This process incorporates an extensive choice of healthcare products to diagnose and treat diseases or medical conditions limiting humans being. It is a major user of energy that uses different technology for the production of drugs and also utilize improved machines for surgery, transplant etc. Its impact across the globe is tremendous [28]

**Agricultural technology:** is the utilization of methods in regulating the development and gathering of plants and animals’ products. Its emphases on technological methods has been utilized in agriculture to broaden knowledge on methods, equipment and structures being utilized, to withstand and preserve the quality of life. Biotech crops have been seen to contribute towards meeting food needs by improving its productivity. The impact of contemporary agriculture has been extensively shown using available technology such as tractor, combine harvester etc. on most suitable land which has indeed proved to be of great significance from clearing to harvesting. [24], [26]

**Biotechnology:** Is the application of techniques utilizing biological systems, living organisms to modify valuable products so as to enhance plants or animals’ life and to grow microbes for particular purposes. Biotechnology was also defined as the use of biological organisms by several
industries in order to learn in regards to science of life and improve pharmaceuticals, crops and livestock. For majority of plant, crops established with biotechnology tends to have various effects with relevance’s such as; the reduction in pesticides usage, enhanced water and soil conservation and protection for workers and the ecosystems. Effect of biotechnology in the area of agricultural include; distribution of genetically engineered genes to indigenous plants, toxicity increase, etc. [14], [16].

**Nanotechnology**: is the management of an atomic, molecular, and supramolecular scale covering present work and concepts which are more complex. The effects of bioaccumulation in plants and microorganisms has been a topic of present research, as it was discovered to present positive influence. Scientists have found bacteriostatic silver nanoparticles useful for foot odour reduction in socks. [24]

**Information technology**
Technology has a massive impact on production. Growing nations is tested by the absence of profound takes by the idea of their association as yet being imaginative and by being in a quickly evolving condition. For an effective administration of innovations under these conditions, an administration framework must be minimal, adaptable and versatile [2]. New Technology Based Firms (NTBFs) has created points of interest of adaptability and speed of reaction. so, as to profit [20], [21]. Mechanical progression has been seen as a twofold edged sword concerning handy improvement. There is no vulnerability that a huge piece of the improvement in human welfare over the earlier century can be spoken to by mechanical headways in zones, for instance, general prosperity and cultivating. But, an extensive number of the world's fundamental practicality issues are unintended as a result of inventive enhancements, especially those that went for extending creation and extraction of trademark resources [25].

Due to the rapid developments made by humankind in terms of scientific and technological innovations, which signaled the industrial revolution, and growth of mega-industries across the turn of 20th century which although lead to an increase in standard of living, coupled with an unprecedented economic growth rate and a rapid increase in population growth rate around the world, has led humanity to stretch and put serious strain on the natural resources and environmental limits of the earth [18], [19]. Advances in IT empower changing authoritative structures described how IT has affected on the structures of the association through expanded vertical relations of data
bringing about a more prominent centralization of data at the highest point of the progressive system. [11]. According to, IT through vertical information planning engages various leveled structures to finish up progressively bureaucratic through increasingly significant routinization of errands. It engages a relationship to be dynamically responsive and proactive in a circumstance. Pfotenhauer et al., [20] portrayed how an indistinct association utilizes IT to stay adaptable in profoundly questionable conditions. For astoundingly questionable circumstances, she moved that the ordinary condition structure linkage fails to make versatility for affiliations that are very united and formalized. To moderate this strain made among nature and structure, IT is realized to give affiliations progressively, conspicuous versatility, empowering them to process more information about the earth. Argyres et al., [26] offered two reasons why its utilization was more convincing than a logically focused and formalized structure. Dibrell and Miller, [27] battled that improvements in IT have enabled chiefs to alter existing structures and make new models for definitive arrangement that better fit necessities of a flimsy circumstance [12], [15], [17]

4. CONCLUSION

Technological innovation has provided several impacts on the effectiveness and development for the society. This paper provides brief view on the important path of analyzing the effect of technological innovation in the area of agriculture, construction, medicine, biotechnology towards producing a justifiable city. It was discovered that technological innovation has transform the effectiveness and benevolence with regard to sustainability. Technological innovation has also transformed the patterns of people. The use of technology has also led to the growth of the sixth-generation technology. There are different aspects of redefining the link between society and environment. It is crucial to formulate techniques, transformations, renewals, and regenerations that deals with the creation of a green city. Generally, its effect has a positive influence in constructing the city to be a better place
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