

## **FACTOR INFLUENCING TECHNOLOGICAL INNOVATION PERFORMANCE**

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### ***Abstract***

Innovation is not just an individual study by a company or an entrepreneur, but it has to be in a larger system that enables innovation. There is a need, therefore to study the external and internal factors that influence the output of technological innovation. The goal of this study was to identify the factor that influence of the performance in technology innovation defined from several researchers. The role of innovation as a critical factor influencing a company's business creativity and competitiveness make it essential to growth of productivity and productivity of the industry. Various studies of innovation is identified as helping companies open new markets and gain competitive advantage succeeded in increasing market share and achieving sustainable competitiveness.

***Keywords:*** *technological innovation output; innovation performance; market pull; technology push*

## **1.0 INTRODUCTION**

Innovation is a new idea, device or process. Innovation can be viewed as the application of better solutions that meet new requirements, inarticulate needs, or existing market needs. This is accomplished through more effective products, processes, services, technologies, or ideas that are readily available to markets, governments and society[8-10]. The term innovation can be defined as something original and, as a consequence, new, that "breaks into" the market or society. Innovation is not a single event or activity, it is a process. In terms of business, innovation is the generation of fresh ideas, the ongoing development of products, services and processes and their commercial application.

The concept of innovation is sometimes confused with the term invention. Whilst both innovation and invention are closely related, invention specifically refers to making new discoveries and designs or coming up with new ways of doing things. Invention is the technical part of innovation, involving the development of an idea or discovery to the point where it works theoretically. Innovation is also concerned with the commercial and practical application of ideas and inventions. In business, innovation is essentially the commercial exploitation of viable ideas. It involves the management of idea generation, technical development, manufacturing and marketing of a new product, process or service.

Innovations can fall into one of three categories; incremental, complementary or disruptive. Incremental innovations are small changes, additions and improvements that are added to existing products and services. Incremental innovations are added to products to extend the length of their lifecycle and keep them up to date. Complementary innovations are new products or services that can be added to existing product lines. They add value to the product lines without having a negative impact on the existing products and services. The goal of this study was to identify the factor that influence of the performance in technology innovation defined from several researchers.

## **2.0 IMPORTANCE OF INNOVATION**

In the past, many organizations have been able to survive even with very limited amounts of innovation. They focus on providing quality products and simply update them to a level that maintains their competitiveness in the market. This

method still applies to some products with long lifecycles and few opportunities for innovation.

Recently however, some trends have emerged that drive the innovation process. Due to factors such as globalization and outsourcing, there is an increased push to improve efficiency and effectiveness of organizations. Organizations need more than good products to survive; they require innovative processes and management that can drive down costs and improve productivity. Consumer expectations also drive the amount of innovation in the market. Customers are used to products that continually improve and make their life easier. Modern consumers are more informed and have more options in terms of what they buy and who they buy it from.

Innovation is important as it is one of the primary ways to differentiate the product from the competition. If can't compete on price, it will need innovative products and ideas to make the business stand out from the crowd. Innovation in the business can also be driven by the amount of innovation competitors are doing. Being first to market with a new product can provide with a significant advantage in terms of building a customer base. It is difficult to compete if the products are seen as obsolete or out of date. However, when investing in innovation, keep in mind that many businesses survive by copying and adapting the innovations of others, and can benefit from hard work.

In a broader sense, innovation is important to the advancement of society around the world. New and innovative products can increase the standard of living and provide people with opportunities to improve their lives. Breakthroughs in medicine and technology have significantly improved living standards around the world. Innovation has also lead to significant improvements in the way businesses operate and has closed the gaps between different markets.

### **3.0 FACTOR INFLUENCING TECHNOLOGICAL INNOVATION PERFORMANCE**

There are many researchers studying the determinants or influencing factors on innovation. There are:

### **3.1 Contingent Factors: Company's Size and Market Structure**

The relationship between size and innovation has been studied by many researchers [1-5] without having achieved a consensus. Thus, on one side a large group of authors note that the firm size positively affects its innovative behavior [4, 5]. In contrast, other authors such as [3, 4] support the existence of a negative relationship between size and innovation. In particular, there is a positive relationship between size and R&D activities, however, on its direct effect on innovation. The size influences R&D activities, as these activities require substantial investment, but at the same time, that small firms are able to compete on an equal footing in terms of innovation.

### **3.2 Human and Organizational Resources**

Human and organizational resources of a company directly affect its ability to innovate. In numerous works the authors include variables related to personnel dedicated to R&D and other organizational issues: centralization, specialization, formalization [3, 5] or related to the development of human resources.

### **3.3 Financial Resources**

One of the most common indicators used to evaluate the commitment of an organization with the R&D is the level of expenditure dedicated to this activity.

### **3.4 Collaboration with Other Agents**

Since innovation is effectively conceived as an interactive learning process, many authors argue that collaborative activities between different agents of a National Innovation System have a great importance to achieve economies of scale, avoiding duplication of efforts and promoting the dissemination of the results of innovation [2]. Other studies have shown that cooperation in R&D usually bring significant benefits to businesses [3-4]. The importance of collaboration between the companies is other factors in explaining its ability to develop R&D.

### **3.5 Technology Resources**

The role of technology resources by means of four variables: acquisition of new technological equipment to support innovation, acquisition of external technological knowledge, production preparation and commercialization preparation.

### **3.6 Information and Knowledge Management**

Innovation should be seen as an interactive process in which a company acquires knowledge through its own experience in the design, development, production and marketing of new products, constantly learning from its relationships with various external sources: customers, suppliers and other organizations such as universities, technological institutes, consultants, etc. [3-2]. The role of information and knowledge management is an element that could be of particular importance in the innovative behavior of the company. This is done using three factors related to information management: the use of internal information, the use of market related sources of information (clients, providers and competitors) and other sources of information (scientific reviews, industrial associations, conferences, etc.).

### **3.7 R&D Activities**

By considers the role played of R& D activities as a key factor that can contribute positively to the success in obtaining innovation, but R&D is not a requirement or prerequisite for success in innovation process, as it was suggested in the linear model of innovation. The direct impact R&D activities can have in innovation results and even in firm's performance, as these activities could contribute to the achievement of radical innovations that provide greater competitive advantage [1-5]. The role of R&D is defined by two variables: internal R&D activities and external R&D activities.

## **4.0 CONCLUSION**

To improve the level of innovation in the business, firstly, need to assess the potential within the team for innovation. The leader needs to ensure that he has people that are creative, knowledgeable and motivated to develop new ideas. It is also important to ask them if they have the resources they need to create and

develop new ideas. Identifying the people who are likely to be creative will help to delegate tasks effectively.

Assessing the organizations level of innovation means looking at the past successes and failures. Try to work out what made one project a success, where other similar projects didn't work out. Look for areas that can improve upon and try to learn from past mistakes. Leader should also look for ideas that didn't work previously and see if they have any future potential. When assessing the organization's level of innovation, also consider the amount of innovation coming from the competition as well as what is happening in the market. This will help to decide whether or not being innovative enough to remain competitive.

Most importantly, consider whether or not the organization is focusing a sufficient amount of time and resources into developing new ideas. Many organizations miss out on opportunities because they don't put enough effort into developing good ideas. An innovation audit takes into account the opinions of the customers and the employees. Work out how much the organization have invested in innovation over a period of time and compare that to the amount of return their have received from the investment. Gather as many opinions and as much information as can and take the time to identify and work through any issues that are preventing from being an innovative business.

A thorough understanding of the organizations level of innovation will help to move forward. Identify areas in which can make improvements and ensure that commit a sufficient amount of time and resources into these areas. The benefits of supporting an innovative culture in the organization will outweigh some of the initial expenses and should help to achieve the business goals.

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