THE AGRO-INDUSTRIAL INNOVATION ECOSYSTEM: DRIVING MANUFACTURING VOLUME THROUGH RESOURCE-EFFICIENT TECHNOLOGIES

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Abstract: *This paper explores the synergistic relationship within the agro-industrial innovation ecosystem, focusing on how the application of resource-efficient technologies in agriculture directly influences and drives the volume of innovative product manufacturing. By analyzing the interconnectedness between sustainable agricultural practices, technological advancements, and manufacturing processes, this study highlights the potential for increased production, reduced environmental impact, and the creation of novel value chains. The findings underscore the critical role of fostering innovation across the entire agro-industrial spectrum to achieve both ecological sustainability and enhanced manufacturing output.*

This study analyzes the volume of innovative product manufacturing, the role of creative production in the economy and manufacturing quality products lead to competitiveness between strongly build companies and this mainly boost the economic growth. By increasing the volume and quality of production, companies earn reputation in society and stand the head of market. From that point some problems may be solved across country. We will analyze factors one by one which impact the innovative production volume throughout research.

Keywords: *competitiveness, product identifications, economic growth, Agro-Industrial Complex, Innovation Ecosystem, Resource-Efficient Technologies, Manufacturing Volume, Sustainable Agriculture,*

As the primary driver of economic growth and welfare increases that innovation is regarded as one of the most significant research subjects in the field of science and technology policy in recent years. In today's competitive global economy, a firm's product innovation capability determines its competitiveness and effectiveness in national or international production and trade networks.

Innovative products are those that introduce new ideas, technologies, or processes that significantly improve performance, usability, or market value. They

can range from cutting-edge technology gadgets to advanced healthcare solutions and sustainable consumer goods.

Analyzing the volume of innovative product manufacturing involves examining the quantity of new or significantly improved products are produced within a specific timeframe.

- Here, we analyze some factors which are affect the volume of the production:

Market/Consumer demand

As mentioned one of the popular a Scottish economist and philosopher Adam Smith: "Consumption is the sole purpose of production and the interest of the producer ought to be attended to only so far as it may be necessary for promoting that of the consumer."

There is no doubt, the first factors influencing production volume is demand for products. Demand is one of the main reason which impact the production cycle and it may lead to huge volume manufacturing by consuming more. If demand will be high by consumers, volume of production will be also high, producers will give more supply for clients. In the market, competition will start between good developed companies with innovative and last version products.

But there is also another point which is consumer choice. Consumers always choose best option. In the market, clients always pay attention the quality of goods and services, the price of them must be affordable and moreover, one of the main characteristics are, they should be creative and should decorated with last technology they must be produced in innovative way.

Technological orientation

Innovation always linked to the technology. We can produce innovative products with the help of new technological methods and we can boost the efficiency of production volume with advanced machines, with automation, by helping of technology production cycle will be also productive.

Technology orientation is can be defined that companies focus on research and development and include new technologies in product development. Technology orientation can also be defined as companies' openness to new ideas and the tendency to adopt new technology during the development of products. When businesses implement new ideas, products and processes, they can use this technology as a competence by coordinating the structure, system and resources of the company with technology. In addition, technological orientation is recognized as the center for launching innovative and better designed products. For this reason, it is stated that technology-oriented enterprises have to be more proactive in acquiring and implementing new technology to develop their products/services. (Masa'deh et al., 2018). Higher production volume can be made possible by

technological advancements that increase productivity and efficiency. Production can be greatly impacted by automation and better production techniques.

Competitive strategies

Organizations seem to be under pressure because of the growing competitiveness in many industries, as seen by the changes in the competitive environment surrounding the business world in recent years, such as the quick adoption of new technology and the short lifespan of products.

Producers are using wide range of new methods and strategies in order to attract consumer's attention. Businesses using differentiation methods must develop unique goods and services to compete in a market where prices are higher. This generally distinguishes itself apart from rivals by offering different goods with excellent levels of innovative capacity and superior product quality. One strategy that is intimately linked to both performance and innovation is differentiation. Every general strategy is essentially a distinct way to establish and maintain competitive advantage, according to Porter (1980). In the differentiation strategy, the purpose of the companies to be unique in its industry in certain ways that buyers find this product totally worthy to purchase.

By increasing the production capacity, new opportunities may open for corporations across the international trade, they can trade in global level and what will be the last result? Of course, the production volume again will face increasing line also, this is also helpful for the government economy. Help for economy for this sides, if we increase production capacity, we need more labor force which produce more goods and services. Many unemployment people will be busy their works, the result of this whole economy will be improved by manufacturers at some level. Opinions of society will also change about company's production which is working at both sides international and national and this kind of companies will earn reputation in society and swill stand out the head of market.

Benefits for economy

Assume like this, in market, one innovative product come by producer's supply. Product was produced in innovative way and it was decorated last version technology, the price is also affordable. Consumers accept it at good behavior and then, demand start to increase slowly. Product are consuming more by clients; producers start to rise the volume of production. From that point, what need to firstly to producers? Firstly, labor force for manufacturing more and secondly, working places. We can summarize, new jobs and new opportunities will open by increasing the capacity of production. More unemployment people find jobs also, empty lands will replace by manufacturing zone, that's to say, economy will face

to increase and that's also reduce the poverty of country at lower percent by increasing new job opportunities.

Conclusion: The agro-industrial innovation ecosystem presents a powerful framework for simultaneously addressing the pressing need for resource efficiency in agriculture and the growing demand for innovative manufactured products. The adoption of resource-efficient technologies at the agricultural production level serves as a crucial catalyst, generating novel feedstock, reducing waste, and fostering sustainable practices that directly contribute to the potential for increased manufacturing volume of innovative goods. This interconnectedness underscores the importance of viewing the agro-industrial complex not as a series of discrete sectors, but as a dynamic and interdependent system where innovation in one area can have profound and cascading effects across the entire value chain.

To fully realize the potential of this ecosystem, concerted efforts are required to foster collaboration between agricultural producers, technology providers, manufacturers, researchers, and policymakers. Incentivizing the adoption of resource-efficient technologies in agriculture, supporting research and development in agro-based innovation, and establishing robust infrastructure for the efficient transfer of resources and knowledge are critical steps. Furthermore, addressing potential challenges such as the initial investment costs, the need for skilled labor, and the establishment of stable markets for innovative agro-industrial products will be essential for unlocking the full potential of this synergistic relationship. Ultimately, by strategically nurturing the agro-industrial innovation ecosystem and prioritizing resource efficiency at its core, we can pave the way for a future characterized by both environmental sustainability and a thriving volume of innovative product manufacturing that benefits society as a whole.

In this study, the production of innovative products / services plays an important role in the economic development of each country, and the analysis of the volume of production of innovative products is also carried out in relation to the activities of the company, the competitive environment and the overall market. Closely related to economic growth, competitive strategies and economic, production volume market dynamics. It is very important for stakeholders seeking to exploit the full potential of innovations to achieve sustainable progress in the manufacturing sector understanding this relationship.

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