

Interplay of Economics and the Role of Engineering and Technology

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Abstract

In the last few decades, innovations have played a major role in economic growth and development of the modern economies. Extensive Research and Development in the fields of Engineering and Technology have been the catalysts, culminating the economic growth and development of the modern economies. Engineers and Economists have been interdependent on one another for various technical know-how. The rapid advances in the field of Economics due to formulation of various Economic Laws and theories have given the modern economies sufficient ideas and methodologies to make well-planned decisions. Engineers have been interdependent on the economists for the development of various technological equipment's, machines, gadgets etc. useful for the modern industries as they want to maximize their production efficiency, at the same time, minimizing the cost of production. The rapid innovations in Engineering and Technology have made the world a global Market, not limited to the boundaries of a country. Due to technological up gradation in the modern economies, there has been increase in employment, reduction in poverty, and growth of Human Capital, which have together triggered the economic growth of the modern economies, as concluded from my research.

Role of Innovations in the Growth of Modern Economies

In this rapidly changing world, innovation has played a major role in economic growth and development of the modern economies. During the last few decades, there have been many innovations in the field of economics, both at the micro and macro levels of study. These innovations have contributed to the economic growth of the modern economies and will have a greater role to play in the years to come [1].

The various laws and theories formulated by economists have played an important role in economic growth. These laws and theories have given a more scientific temperament to the modern economists, enabling them to think more logically and analytically. The development of various laws and theories in economics, both at the micro and macro level like the Laws of Demand and Supply, concepts of Production Functions, Market, Equilibrium, theories of Producer and Consumer Behavior etc [2]. have helped the consumers, producers and the governments of modern economies in economizing the resources and make well planned decisions. These have helped the consumers to maximize their satisfaction, the producers to maximize their profits, and the society to maximize its social welfare. Innovations in the field of economics at the macro level like the theory of National Income, Government Budget, Banking, Aggregate Demand and Supply etc. have contributed to overall economic growth of the economy as these have enabled the governments of the modern economies to make fruitful policies, leading to an increase in the real Gross Domestic Product of the economies.

Innovations in Engineering and Technology

Though innovations in the field of economics have directly contributed to the growth and development of the modern economies, the rapid innovations in the field of Engineering and Technology have also contributed a lot in the economic growth and development of the

modern economies [3]. Rapid innovations in the field on Engineering and Technology have helped increase the production capacity and efficiency of the modern economies, at the same time, minimizing the cost of production. Engineers have developed various machines and equipment's which can produce high quality products in very short period of time. This has led to an increase in production activities in the modern economies. As the production of high quality products has increased, consequently the market supply also has increased. Consumption of products like Computers, Mobile Phones etc. has also risen many fold, as these are available to the consumers at a reasonable price

The innovations in the field of Engineering and Technology have led to increased import and exports of goods and services to global economies, and this has led to an increase in the foreign exchange reserves of the modern economies, thereby inducing economic growth. The processes of Globalization, Privatization and Liberalization are now common to most modern economies. This is the result of rapid innovations in the field of technology which have made the world a global market, and have thereby induced economic growth of the modern economies. The developments of Patents, Formation of Cartels, and Research and Development in the fields of technology are the catalysts culminating the economic growth of the modern economies.

Though Capital Accumulation also plays a role in growth and development, the primary driving force is not Capital Accumulation. The innovations in the fields of Engineering and Technology are the primary driving force, which promote economic growth and development in today's knowledge based economy. There are many worldwide examples to prove that innovations have led to economic growth of the modern economies. The semiconductors and Information Technology in Silicon Valley, California, biotechnology in Genome Valley, Hyderabad, India and automotive engineering in Germany are some well know examples of innovations in the field of

engineering and technology, which have led to economic development of these modern economies.

Finally, it would not be wrong to conclude that innovation has been the driving force behind economic growth of the modern economies in the last few decades. It will have an even greater role in promoting economic growth in the coming years due to advancements in technology and Engineering. In the years to come, many new economic laws and theories are expected to be formulated, which would help the modern economists to make well planned decisions so as to maximize the economic growth and development of the economy. The rapid growth in the field of Technology is bound to generate more and more employment opportunities which require skilled labor for operation and maintenance of these modern machines and equipments. This would generate more Human Capital in the modern economies, with people who are innovative, knowledgeable, and think out of the box. Increase in employment opportunities and growth of Human Capital would lead to decrease in poverty in the

modern economy. It would minimize the economic gap between the rich and the poor and would help promote equity, which is a social virtue.

Increase in employment, reduction of poverty, growth of Human Capital and equity would together act as a driving force towards economic growth and development of the modern economies and a deterrent to the social inequity, as are prevailing in the world today.

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