

Importance of transportation infrastructure in society essay

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Transportation infrastructures are a key component of a nation's critical infrastructures, covering physical assets such as airports, ports, and railway and mass transit networks as well as software systems such as traffic control systems.

Transport systems composed of infrastructures, modes and terminals are so embedded in the socio-economic life of individuals, institutions and corporations that they are often invisible to the consumers and somewhat taken for granted. Understanding the huge importance of transportation infrastructure in society is the purpose of this case study. Regarding transportation infrastructures, movement or mobility is one of the most fundamental and important characteristics of economic activity as it satisfies the basic need of going from one location to the other, a need shared by passengers, freight and information.

Economies that possess greater mobility are often those with better opportunities to develop than those suffering from scarce mobility. Reduced mobility impedes development while greater mobility is a catalyst for development. From earliest times up to the present, transportation is an important and vital function in all societies, virtually in all developed economies. Transportation systems provide the necessary critical links between producers and consumers both domestically and globally (<http://ops.fhwa.dot.gov>).

People in societies worldwide are always dependent upon transportation systems/ infrastructure to move products from various locations where they are produced to markets where they are needed and

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can be sold and consumed. It is a reality that efficient transportation systems are essential for businesses and supply chains to produce and sell products and services.

Like many societies and economic activities that are dependent on infrastructures, the transport sector is an important component of the economy impacting on development and the welfare of populations. When transport systems are efficient, they provide economic and social opportunities and benefits that result in positive multipliers effects such as better accessibility to markets, employment and additional investments. When transport systems are deficient in terms of capacity or reliability, they can have an economic cost such as reduced or missed opportunities. Transportation infrastructure also carries an important social and environmental load, which cannot be neglected (www.unescap.org).

The state of the United States transportation related infrastructure and capacity is of growing concern. The Federal Highway Administration estimated that total freight volume moved in the United States is expected to triple by 2035 (Coyle et al). Obviously the rapid growth in global trade continues to put a strain on transportation infrastructures in the United States, as well as other countries. In an effort to improve transport infrastructures, the Department of Transportation (DOT) awarded nearly \$600 million in funding from its TIGER II program for various transportation infrastructure-related projects (<http://ops.fhwa.dot.gov>). TIGER (Transportation Investment Generating Economic Recovery) II follows the original \$1.

5 billion TIGER program, which was part of the American Recovery and Reinvestment Act and distributed grants to 51 projects out of more than 1,400 applications for almost \$60 billion worth of projects that came in throughout the country (<http://ops.hwa.dot.gov>).

The purpose and objective of the TIGER program is to ensure that economic funding is quickly made available for transportation infrastructure projects and that project spending is monitored and transparent. There is also a tendency for transport investments to have declining marginal returns. While initial infrastructure investments tend to have a high return since they provide an entirely new range of mobility options, the more the system is developed the more likely additional investment would result in lower returns (www.unescap.org).

At some point, the marginal returns can be close to zero or even negative, implying a shift of transport investments from wealth producing to wealth consuming. A common fallacy is assuming that additional transport investments will have a similar multiplying effect than the initial investments had, which can lead to capital misallocation (www.unescap.org).

This means quite understandably that the economic impacts of transport investments tend to be significant when infrastructures were previously inexistent or deficient and marginal when an extensive network is already present. Therefore, each development project must be considered independently. Transportation is an economic factor of production of goods and services, implying that relatively small changes can have substantial impacts in on costs, locations and performance. An efficient transport system

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with modern infrastructures favors many economic changes, most of them positive. It provides market accessibility by linking producers and consumers (Coyle et al). Improvements in transportation infrastructures favor a process of geographical specialization that increases productivity and spatial interactions.

An economic entity tends to produce goods and services with the most appropriate combination of capital, labor, and raw materials. A given area will thus tend to specialize in the production of goods and services for which it has the greatest advantages (or the least disadvantages) compared to other areas as long as appropriate transportation infrastructure is available for trade. Through geographic specialization supported by efficient transportation, economic productivity is promoted.

An efficient transport system offering cost, time and reliability advantages permits goods to be transported over longer distances. This facilitates mass production through economies of scale because larger markets can be accessed. The concept of “ just-in-time” has further expanded the productivity of production and distribution with benefits such as lower inventory levels and better responses to shifting market conditions. Thus, the more efficient transportation becomes, the larger the markets that can be serviced and the larger the scale of production. With efficient transportation infrastructures the potential market for a given product (or service) increases, and so does competition.

A wider array of goods and services becomes available to consumers through competition which tends to reduce costs and promote quality and

innovation. Globalization has clearly been associated with a competitive environment that spans the world. In conclusion, transportation infrastructures and systems also contribute to economic development through job creation and its derived economic activities. Accordingly, a large number of direct (freighters, managers, shippers) and indirect (insurance, finance, packaging, handling, travel agencies, transit operators) employment are associated with transport. Producers and consumers take economic decisions on products, markets, costs, location, prices which are themselves based on transport services, their availability, costs and capacity.

Transportation links together the factors of production in a complex web of relationships between producers and consumers. Economic growth is increasingly linked with transport developments, namely infrastructures.