



## The Correlation of Transport Development with Economic Growth : A Case Study of Manipur

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*The North Eastern Region of India divided into discrete plains encompassed within ranges of hills. The importance of transport as an infrastructure is all the more for developing region and nothing epitomizes this more than India's North-Eastern Region where the lack of comprehensive transport network has been perceived as a hindrance and stumbling block to development process, especially, Manipur. The development discourse on North East Region of India has always been associated with a highway economy due to its tough geographical location and absence of rail connectivity and inland water transport except Assam which enjoys a sizeable amount of railways having largest road and railway network in the region. In present Manipur, transportation in national and state highways is the most important means of transport, communication and livelihood of the state.*

**Key Words:** Transport, Economic Development, National Highways, Manipur, Correlation, etc.

### Introduction

One of the major challenges of economic development of an economy is to provide necessary infrastructure to meet the demands for business, households and other users who demand them not only for direct consumption but also for raising their productivity by reducing the time and effort needed in the production process. Infrastructure is an umbrella term for several activities referred to as 'Social Overhead Capital' which are necessary for the development of Directly Productive Activities such as agriculture, industry, and trade. In fact, the development of a country, region or state depends on infrastructure, such as irrigation, power, transport and communication. Among these various forms of infrastructure, transport plays a vital and indispensable role in the process of economic development.

In recent years, with the rapid growth of the economy, the importance and urgency of removing infrastructure constraint has increased. Among those major areas of infrastructural development, transport infrastructure developmental programme is considered as one of the most significant area. The reason for that is the present day society involves in large scale production, regional development, product specialization and international trade. With the encouraging new wave of liberalization and privatization trades rely heavily on transport and communication network. In such conditions, a modern economy system simply cannot exist without an efficient transport infrastructure.

The importance of transportation in human development is multidimensional. It runs parallel to the growth of GDP. In the developed countries, transport sector accounts between 6 % and 12 % of the GDP and provides million of jobs. But, World Bank estimates that transport sector accounts at an overall average between 3% and 5% of the GDP. To India's GDP, transport sector contributes at an average of 4.6% to 6.4%, FDI inflows at around 13% of the total inflows and employment of around 40 million people. Thus, transport influences economic growth and development, population distribution, the shape and structure of the

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city, energy consumption, access to markets and the quality of life. It has substantial contribution to the growth of the GDP, absorbs large investments and provides employment to millions of people. Therefore, transport and communication technology advancement is an essential pre-requisite for the working and growth of an economy.

### **Development of Transport and the Economic Development of Manipur**

Geographically, Manipur is an isolated hill-girt, and a land-locked state in the North Eastern Region of India bordering Burma (Myanmar). It covers a total geographical area of 22,327 sq km. The valley, Imphal or Manipur Valley, is located at the center of the state surrounded by ranges of hills and deep mountains. Imphal is the state's capital as well as the administrative and commercial center. In present Manipur, transportation in national and state highways is the most important means of transport, communication and livelihood of the state. The nearest railhead is connected by National Highway 39 at Dimapur in Nagaland, 216 km away from the state capital. Imphal, the state capital and commercial center of the state, is neither connected by railways nor by navigable waterways. The two National Highways viz., NH-39, which connects Imphal with Dimapur and Guwahati and NH-53 which connects Imphal with Jiribam and Silchar connect the people and the state with the rest of the country. Therefore, these two Highways is considered to be the lifelines of Manipur, especially National Highway 39. Though, daily air flights connect the state with the rest of India, it is affordable only by a lesser percentage of the population. But, all the development activities of the state depend heavily on road transport infrastructure, and hence, the most significant.

Basically, in Manipur, roads are the great binding force of the state transport system. The following table made an analysis on development of road and its impact on other developmental indices of Manipur.

**Table : 1**  
Development of Road Length and Five Selected Developmental Indices

Year	Road length (km)	Per capita income (current) (in Rs.)	Persons below poverty line (%)	Literacy rate(%)	Per capita consumption of electricity (in Kwh)	No. of Hospital including PHCs & PHSCs
1956	959	-	-	11.4	0.62	-
1960	1705	154	-	30.4	1.36	-
1965	2400	211	-	30.4	1.83	119
1970	2754	422	50.01	32.9	9.00	124
1975	3313	795	50.01	32.9	9.00	143
1980	3573	1592	54.83	41.4	13.16	234
1985	4324	4393	38.08	41.4	26.00	297
1990	4835	8194	39.93	59.9	82.00	461
1995	6068	13260	33.78	59.9	120.00	536
2000	7172	12970	28.54	70.5	149.00	543
2005	8648	17772	17.30	70.5	262.00	541
2009	10760	21062	17.30	70.5	246.00	541

Source: Statistical Abstract of Manipur & Economic Survey of Manipur of Relevant Years

**Table : 2**  
**Pearson's Correlation Coefficient Between Road Connectivity**  
**and Five Selected Developmental Indices**

Indices	Value of Correlation	Level of Significance
Per capita income	.971	.01
Literacy rate	.950	.01
Persons below poverty line	-.923	.01
Per capita consumption of electricity	.954	.01
No. of Hospitals, PHCs & PHSCs	.865	.01

An examination of the above tables clearly revealed that road connectivity is linked to a significant level and had a very high positive correlation with the developmental indices such as Per Capita Income (.971), Literacy Rate (.950), Per Capita Consumption of Electricity (.954) and establishment of Hospital including PHCs & PHSCs (.865). Among the developmental indices per capita income has highest positive correlation. However, the negative correlation between road length and persons Below Poverty Line (-.923) indicates that the enhancement of connectivity leads to the betterment of the economic condition of the people thereby reducing the population below the poverty line in the state. Expansion of road transport in the state contributes in a bigger way to employment potential, reduction of poverty, increasing literacy, health, education and other socio-economic activities of the state. Furthermore, it has also been manifested that the growth in the production as well as the per capita income shows irregular fluctuation. But, it registered an annual average growth rate of 6% in NSDP, while, the average annual growth rate per capita income was 5% in Manipur.

**Table : 3**  
**Per Capita Road Length and Other Four Selected Developmental Indices**

Year	Road length in '000' population (in km)	No. of Educational Institutions	No. of SSI Units	No. of commercial establishment	No. of tourists
1956	2.8	1095	-	-	-
1960	2.8	2346	-	-	-
1965	2.8	2870	-	-	-
1970	2.7	3394	-	-	-
1975	2.7	3773	3564	-	-
1980	2.7	4152	4673	76	50123
1985	2.7	5507	5870	94	59870
1990	2.8	6862	6723	1322	67890
1995	3.1	3789	7832	1458	78901
2000	3.1	4121	8910	1720	89958
2005	3.2	4222	9744	1947	93726
2009	3.2	4222	10264	2050*	101460

Source: Statistical Abstract of Manipur & Economic Survey of Manipur of Relevant Years

**Table : 4**  
**Pearson's Correlation Coefficient Between per Capita Road Length**  
**and Four Developmental Indices**

<b>Indices</b>	<b>Value of Correlation</b>	<b>Level of Significance</b>
No. of Edu. Institutions	.063	Not significant
No. of SSI units	.941	.01
No. of commercial establishment	.923	.01
No. of tourists	.956	.01

From the above tables, it can be ascertained that except for the educational institutions, other developmental indices such as number of SSI units (.941), commercial establishments (.923) and tourists (.956) had a very high positive correlation with road length. Hence, it can be concluded that road connectivity had a desirable positive impact on these developmental indices in the state during the period. However, the reason for finding insignificant correlation value for educational institutions is because of the fact that after 1990 thousands of non-formal (vocational) educational institutions were abolished by the Government. If this factor is taken into consideration, then, it can be interpreted that road connectivity had a positive correlation with the number of educational institutions established. Thus, transport development have been considered as vital path for growth and development of a region or state by helping directly productive activities such as agriculture, industry and trade by connecting market with the production centre.

#### **Development National Highways and Growth of NSDP**

As mentioned above, the National Highways 39&53 are the only proper conduits roads linking Manipur with mainland India. They are the lifelines for the supply of essential commodities and movement of millions of its people. Analyzing the increasing trends of Net State Domestic Product (NSDP) vis-à-vis the growth of National Highways in the economic development of Manipur will be worthwhile in better understanding of its growth pattern. NSDP indicates the value of all goods and services produced in the state during a specified period, after making adjustments for the consumption of fixed capital. It depicts the growth in net domestic production of the states.

**Table : 5**  
**Growth of National Highways and Growth of NSDP at Current Prices**

<b>Year</b>	<b>Length of NHs (Km)</b>	<b>Primary sector (Rs. in lakh)</b>	<b>Secondary sector (Rs. in lakh)</b>	<b>Tertiary Sector</b>	<b>Total NSDP (Rs. in lakh)</b>
1960	-	661.2	122.5	403.7	1187.4
1965	212	933.3	192.3	723.3	1848.9
1970	212.3	2174.5	3596	1667.8	4191.8
1975	212.3	6166.9	566.9	2430.9	8211.9
1980	434.3	10098	2270	9474	21842
1985	434.3	17836	6353	17572	41761
1990	957.0	30119	11929	40011	82059
1995	957.0	57817	22684	81340	161841
2000	967.0	86850	76013	149450	308808
2005	967.0	124090	157425	172547	454062
2009	967.0	134962	196595	226343	562344

*Source: Statistical Abstract of Manipur and Economic Survey of Manipur of Relevant years*

**Table : 6**  
**Pearson's Coefficient of Correlation between growth of National Highways**  
**(NHs) and different sector of NSDP**

<b>Sector</b>	<b>Growth of NHs</b>	<b>Significance level</b>
Primary	.817	.01
Secondary	.651	.05
Tertiary	.802	.01
Total NSDP	.760	.01

The above table-1.5 has revealed that the NSDP of Manipur (at current price) stood at Rs. 1187.4 lakhs only in 1960 but it was increased at Rs. 4191.8 lakhs in 1970. In the year 1980, 1990, 2000 and 2009, the NSDP of the state were Rs. 21,842 lakhs, Rs. 82,059 lakhs, Rs. 3, 08,808 lakhs and Rs. 5, 62,344 lakhs respectively while the total length of National Highways in Manipur was increased from 212 km in 1960 to 967 km in 2009. When, looked into the correlation between Growth of National Highways and the contribution of different Sectors of the economy to the NSDP, it has been observed that Primary Sector (.817) and Tertiary Sector (.802) have a high positive correlation. But, the Secondary Sector (.651) has medium correlation with the growth of National Highways. Therefore, it can be said that development of National Highways contributes to a significant level to the growth of different sectors of the economy leading to subsequent enhancement in total NSDP of the state and thereby increases the standard of living index in the state by providing better accessibility and connectivity.

### Conclusion

The role of transport in an economy is comparable with that of energy so that the transport development becomes an integral part of the over-all economic, social and industrial development of country. The state of Manipur is characterized by heavy precipitation, extremely rich bio-diversity, and fragile hills. The cultivable area is limited and the regional economies are simple, heavily deficit and dependent on the rest of the country for many basic needs. There is no large and medium industry in the state. The only industries existing in the state are in the form of small and village industries of which handlooms and handicrafts are worth mentioning. This region is endowed with hydro-potential, forest wealth as well as good potential for trekking and tourism.

In terms of per capita state domestic product or other development indices, such as, power, road length, hospital beds, the state ranks well below the national average. However, it has been established that the development road transport has very high positive correlation with the developmental activities of the state. Therefore, road transport is an important index of social, cultural and economic development of the state. But, the existing road network in the state is quite deficient due to inadequate capacity, weak pavement, poor geometrics, submersible stretches, poor riding quality, lack of wayside amenities, weak and distressed bridge and presence of a number of semi- permanent, pre-war, timber and bailey-based suspension type bridge along the National Highway 53 which limited the load carriage capacity. The backlog of road network in the state would need to be eliminated with a sustained step up of allocation of road and improvement in the institutional capacity of the state and promotion of road construction industry for efficient implementation of the programs to lead the state to the path of growth and development.

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