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To Study The Growth In Public Infrastructure Of Road Development In Maharashtra

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Abstract:

Many nations want to boost economic growth and road infrastructure development in economically underdeveloped areas. This is due to the fact that road infrastructure is essential for enabling the effective flow of people and goods as well as providing access to a variety of commercial and social activities. However, long-term economic growth cannot be achieved by concentrating just on the construction of transportation infrastructure. Therefore, this study looks at how road infrastructure improvement and other socioeconomic factors contribute to economic growth. In order to promote economic growth and, consequently, lessen economic inequality, poverty, and deprivation within a nation, infrastructure is essential. The impoverished must have better access to road infrastructure, electricity, water and sanitation, health care, and education in order to attain equitable development and social empowerment. Long-term social and economic development requires it. The study is descriptive in nature. The secondary data needed for the study is gathered from government and other agency papers, books, journals, and other periodicals. The road infrastructure development in Maharashtra is the focus of this essay.

Keywords: Infrastructure, Growth and Development, Infrastructural Investments, Poverty Reduction.

Introduction:

Economic growth and infrastructural development are positively correlated. This means that, as many developed countries have shown, especially in the years after the industrial revolution, economic growth increases in tandem with the number and quality of financial and physical infrastructure. In the technologically advanced and competitive world of today, infrastructure is crucial to economic growth. In actuality, one of the most important measures of a nation's economic success is its infrastructure development. Well-developed roads, airports, railroads, power, access to drinking water, and social infrastructure like health and education—rather than GDP or per capita income—determine a nation's true success. A well-developed infrastructure promotes trade and commerce, as well as the growth of the industrial, agricultural, and service sectors, leading to concurrent increases in employment and income. In summary, socioeconomic development and infrastructure development are positively correlated in every geographical area.

Infrastructure development has received substantial funding from the Indian government and state governments. Thanks to the governments' unceasing efforts, the nation set a new record and accomplished significant infrastructure development targets after gaining independence. The second part of this chapter provides a detailed analysis of India's infrastructure development progress. Infrastructure related to roads, electricity, health, drinking water, and education has been its main priority. Regional variations at the state level are

also further explained in this chapter. Additionally, it provided each state with an infrastructure development index. The state of Maharashtra's infrastructure development is covered in the third section, along with regional differences in the state's infrastructure development.

Public infrastructure is now widely recognized as being essential to the nation's socioeconomic development, especially in rural areas. In actuality, one of the main public drivers of India's economy is the infrastructure sector. The sector is essential to India's overall development, and the government prioritizes enacting legislation that guarantees the timely construction of the nation's top-notch infrastructure. Power, bridges, dams, highways, and urban infrastructure development are all included in the infrastructure sector. If the essential infrastructure is built properly, it is possible to provide goods and services in an effective manner. The supply or availability of public infrastructure is positively and immediately correlated with the efficient and successful execution of economic activities like production, consumption, and distribution. In actuality, well-developed public infrastructure facilities are necessary for regional economic development.

Review Of Literature:

Debendranath Sarangi (2008) "Infrastructure development: a public–private partnership in India" Economic growth depends on infrastructure policy, which should be prioritized, especially in developing nations. Lack of funding to carry out infrastructure projects is one of the main problems. High-quality infrastructure, which necessitates large investments, should be provided in order to solve this issue. Numerous investment options, including partnership, coalition, and voluntary investment, have been used in India to solve finance problems. One of the best instances of public-private collaboration in infrastructure development is the Sustainable Cities Programme (SCP), which is supported by the United Nations Development Programme (UNDP). When implemented in Chennai, India, it necessitates the involvement of business, government, and community organizations in order to provide positive outcomes. The conditions in India seem to be perfect for the government to pursue a specific agenda for infrastructure investment. Nilesh A. Patil (2014) "Infrastructure development through PPPs in India: criteria for sustainability assessment" The Indian government can employ private resources through public-private partnerships (PPPs) to address the widening gap between supply and demand for infrastructure services. However, the private sector seeks to restrict its involvement to projects that are financially attractive, leading to patterns of infrastructure development that obstruct the advancement of sustainable development. The PPP procurement process should put long-term infrastructure development incentives for the private sector ahead of merely ensuring financial sustainability in order to guarantee sustainable development. In order to examine PPP projects' progress toward sustainable development, a principles-based methodology tailored to PPPs is presented in this study. A questionnaire poll of important stakeholders in the Indian PPP project was used to validate the framework, which was created utilizing a comprehensive approach to sustainability evaluation. Incorporating sustainable development principles into the public-private partnership procurement process will be made easier with the help of this framework.

Sapatnekar Sanhita and Kamal Kishore (2018) "Regulating infrastructure development in India" India's urbanization has been accelerating.

A large portion of this was inadvertent, as rules caught up to earlier legislation. This makes it possible to enhance the legislative framework with regard to the participation of all governmental levels and the procedure for setting standards for various infrastructure kinds. Implementation issues arise from the absence of regulation of the experts involved, such as municipal planners and engineers. Additionally, India is still developing this regulatory structure. Determining the proper prescription level for a standard, identifying critical infrastructure, and deciding whether to modify existing infrastructure are examples of systemic challenges. In order to identify areas of concern, this paper looks at India's infrastructure development framework and standards. This essay looks at the ecosystem for standard setting in India's infrastructure development from a risk perspective rather than going into great detail about any one standard.

Objectives Of the Study:

The major objectives of the present research study are as follows:

1. To assess the development of road transportation in India.
2. To study the development of road network in Maharashtra state.

Research Methodology:

Every research is necessary a specific methodology so for the present research has used specific methodology. For the collection of data, the researcher has used the secondary source. The study is descriptive in nature. Secondary data required for the study are collected from books, journals and other Government websites, periodicals, and reports etc.

Limitation Of The Study:

The major limitation of this research is that the present research is related to onlypublic infrastructure of road transportation. Researcher is not covered all dimensions of road transportation. The conclusion of this research may not be applicable to other.

Development Of Road Transportation In India:

- **Length of Roads**

India has made tremendous progress in road transportation under the PPP model since 1991, particularly since the implementation of the NHDP in 1997. In India nowadays, road transportation makes up 85% of all traveler traffic and more than 60% of all commercial activities. The Government of India's relentless efforts and the significant contributions of private entities made it possible.

Table No.1: Progress of Road Length in India During 1950-51 to 2017-18 *Length in (Km.)*

Year	National Highway	State Highway	District Roads	Rural Roads	Urban Roads	Project Roads	Total Roads
1950-51	19811	NA	173723	206408	NA	NA	399942
1960-61	23798	NA	257125	197194	46361	NA	524478
1970-71	23838	56765	276833	354530	72120	130893	914979
1980-81	31671	94359	421895	628865	123120	185511	1485421
1990-91	33650	127311	509435	1260430	186799	209737	2327362
2000-01	57737	132100	736001	1972016	252001	223665	3373520
2010-11	70934	160177	998895	2749804	411679	285349	4676838

2013-14	79116	169227	1082267	3304328	457467	310081	5402486
2014-15	92287	170818	1101178	3337255	467106	303470	5472114
2015-16	97991	167109	561940	3935337	509730	331186	5603293
2016-17	101011	176166	5,61,940	39,35,337	5,09,730	3,19,109	56,03,293
2017-18	1,14,158	1,75,036	5,86,181	41,66,576	5,26,483	3,28,897	58,97,671
2018-19	126,350	186,908	611,268	4,409,582	534,142	347,547	62,15,797
2019-20	1,32,500	1,86,528	6,32,154	45,35,511	5,44,683	3,54,921	63,86,297
CAGR	**2.7**	**2.5**	**1.8**	**4.6**	**4.2**	**2.0**	**4.1**
SGR	**5.9**	**4.1**	**3.4**	**27.4**	**17.5**	**3.4**	**19.7**

Source: Ministry of Road Transport and Highways, Annual Report 2020-21.

National Highways (NH), State Highways (SH), Other Public Works Department (OPWD) Roads, Rural Roads, Urban Roads, and Project Roads make up India's road transportation network. We can draw the following significant conclusions from the road's detailed progress, which is displayed in Table No. 1.

1. National Highway:

In 1950–51, the national highway was just 19811 km long; by 2017–18, it had grown to 101011 km. This shows that an additional 81200 kilometers of national roadway were completed between 1950–51 and 2017–18. It grew at a compound annual growth rate of 2.7 percent and a simple annual growth rate of 5.9 percent over the reporting period. It shows how far India has come in building national roadways since gaining its freedom.

2. State Highway:

In 1970–71, the state highway was just 56765 km long; by 2016–17, it had grown to 176166 km. This shows that an extra 119401 kilometers of state roads were constructed between 1970–1971 and 2016–2017. It grew at a simple growth rate of 4.1 percent and a compound annual growth rate of 2.5 percent over the reporting period. It means that since gaining independence, India has also made significant strides toward building a state highway.

3. District Roads:

Interestingly, district roads were just 173723 km long in 1950–51, but by 2015–16, they had grown to 561940 km. This indicates that 388217 kilometers of new district roads were constructed between 1950–51 and 2015–16. It grew at a simple annual growth rate of 3.4 percent and a compound annual growth rate of 1.8 percent over the reporting period.

4. Rural Roads:

The length of rural roads increased from 206408 kilometers in 1950–51 to 3935337 kilometers in 2015–16. This indicates that between 1950–51 and 2015–16, an additional 3728929 kilometers of rural roads were built. During the reporting period, it grew at a simple growth rate of 27.4 percent annually and a compound annual growth rate of 4.6 percent. It indicates that India was successful in building a strong network of rural roads after gaining independence.

5. Urban and Project Roads:

In 1960–1961, urban roads were just 46361 km long; by 2015–16, they had grown to 509730 km. The project road's length increased from 130893 km in 1970–71 to 331186 km in 2015–16. This shows that there has been an absolute increase of 200293 kilometers for project roads and 463369 kilometers for urban roads. Urban and project roads had CGRs of 4.2 percent and 2 percent, respectively, throughout the reporting period. Urban and project roads had

SGRs of 17.5% and 3.4%, respectively, throughout the reporting period.

6. Total Roads:

In 1950–51, the total length of roads was only 399942 km, but by 2015–16, it had increased significantly to 5603293 km. This indicates that an extra 5203351 kilometers of road were built between 1950–51 and 2015–16. During the reporting year, it grew at a simple growth rate of 19.7 percent annually and a compound annual growth rate of 4.1 percent. It shows that after gaining independence, India was successful in building a robust road network.

Development Of Road Network In Maharashtra State:

Table No.2: Development of Road Network in Maharashtra State Length (in Km.)

Years	Village Roads	Other District Roads	Major District Roads	State Highways	Major State Highways	National Highways	Total Road Length
2008-09	103604	46143	49621	33933	0	4367	237668
2009-10	104844	46817	49901	34102	0	4376	240040
2010-11	106400	46897	49936	34103	0	4376	241712
2011-12	106601	47529	50256	34157	0	4376	242919
2012-13	106745	47573	50256	27528	6694	4376	243172
2013-14	114556	52761	50232	33963	6338	5858	263708
2014-15	145879	58115	50585	33860	6163	4766	299368
2015-16	145879	58116	50585	33859	6163	4844	299446
2016-17	145881	58116	50844	33330	5180	7438	300789
2017-18	145881	58116	52637	30589	3861	12275	303359
2018-19	1,57,128	49,206	60,531	28,466	2,967	10,300	3,08,598
2019-20	1,48335	47,397	63,886	29,030	2,967	17,726	3,09341
2020-21	1,57,862	46,407	66,200	29,076	2,900	18,089	3,20,535
Mean	**122627**	**52018.3**	**50485.3**	**32942.4**	**3439.9**	**5705.2**	**267218.1**
SD	**19179.27**	**5262.91**	**796.10**	**2070.66**	**2904.40**	**2380.54**	**28193.659**
CV	**15.64**	**10.12**	**1.58**	**6.29**	**84.43**	**41.73**	**10.55**
CGR	**3.9**	**2.6**	**0.7**	**-1.1**	**-10.4**	**12.2**	**2.7**

Source: Directorate of Economics and Statistics, Economic Survey of Maharashtra 2021-22

1. Village Roads:

Village roads made up 43.59 percent of Maharashtra's total road length in 2008–09, with a total length of 103604 kilometers. In Maharashtra, the number of village roads is continuously rising. The total length of village roads measured in 2017–18 was 145881 kilometers. Village roads were found to be growing at a compound annual growth rate of 3.9 percent annually, with a coefficient of variation of 15.64 percent. The Maharashtra village road has a mean of 122627 km and a standard deviation of 19179.27 km.

2. Other District Roads:

In 2008-09, the total length of other district roads was 46143 kilometers, accounting for 19.41 percent of Maharashtra's total road length. Maharashtra's other district highways are likewise steadily growing. Other district

roadways were found to be 58116 kilometers long overall in 2017–18. This ratio has essentially not changed over the specified period. With a coefficient of variance of 10.12%, the compound annual growth rate of other district roads was found to be 2.6% annually, suggesting a relatively low rate of volatility. Other district roads in Maharashtra have a mean of 52018.3 km and a standard deviation of 5262.91 km.

3. District Roads:

It is important to notice that the length of district roads was only 49621 km in 2008-09, but climbed to 52637 km in 2017-18. It shows that between 2008–09 and 2017–18, 3016 kilometers of new district roads were built. District roads have an average length of 50485.3 km and a standard deviation of 796.10 km. Similarly, a comparatively little degree of variation was indicated by the coefficient of variance, which was determined to be 1.58 percent.

4. State Highway:

The length of the state highway was only 33933 kilometers in 2008-09, but it was reduced to 30589 kilometers in 2017-2018. Compared to 2008–09, it had a simple growth rate of -9.85 percent in 2017–18 and a compound annual growth rate of -1.1 percent. The state highway is 32942.4 km long on average, with a standard deviation of 2070.66 km. In a similar vein, the coefficient of variance was discovered to be 6.29 percent, suggesting exceptional stability or very little variation. It is important to note that, although Maharashtra's total road length increased significantly in 2017–18 compared to 2008–09, state highways saw a large decline.

5. Major State Highway:

The length of the primary state highway was only 6694 kilometers in 2012-13, but it was decreased to 3861 kilometers in 2017-18. Compared to 2012–13, it had a simple growth rate of -42.32 percent in 2017–18 and a compound annual growth rate of -10.4 percent. Major state highways have an average length of 3439.9 km and a standard deviation of 2904.40 km. Similarly, a significant degree of unpredictability or instability is indicated by the coefficient of variance, which is determined to be 84.43 percent. As a result, Maharashtra's main state roadways are now much shorter.

6. National Highway:

The national highway's length was just 4367 kilometers in 2008-09, but it will increase to 12275 kilometers in 2017-18. It shows that between 2008–09 and 2017–18, an extra 7908 kilometers of national roads were constructed. This shows that Maharashtra has made significant strides toward building national roadways. The average length of national highways for the specified time was 267218.1 kilometers, with a coefficient of variation of 41.73 percent and a standard deviation of 28193.659 kilometers.

7. Total Roads:

The overall length of roads was just 237668 km in 2008-09, but it increased dramatically to 303359 km in 2017-2018. This shows that between 2008–09 and 2017–18, an additional 65691 kilometers of roads were built. Over the course of the study, the average total road length was 267218.1 kilometers, with a standard deviation of 28193.659 kilometers. In a similar vein, the whole road length's coefficient of variance is 10.55 percent. To put it briefly, Maharashtra has been successful in building a robust road network, and the state is still working toward a well-developed road network.

Conclusions:

A key element in the creation of road infrastructure safety management is the enhancement of road safety. An excellent illustration of how to lessen the associated difficulties in investigative techniques, including data, the legal framework, funds, expertise, and tools, is the road framework safety management.

Improving road infrastructure safety protocols depends on the availability and dependability of high-quality data. Therefore, a range of road safety facts and information should be gathered, tabulated, computed, and analyzed in order to improve road infrastructure safety management procedures and enable the application of each road infrastructure safety management method. For road infrastructure safety management procedures to be implemented over the long term, the legislative framework is essential. Establishing and carrying out road safety audits, impact assessments, road network safety, and safety inspections are all excellent examples of improving road infrastructure.

References:

1. World Bank (1994). World Development Report 1994- Infrastructure for Development, Oxford University Press, New York.
2. Mody, Ashoka (ed.) (1997).Infrastructure Strategies in East Asia- The Untold Story, The World Bank, Washington, D.C.
3. Government of India (2018). Ministry of Road Transport and Highways, Annual Report 2018-19.
4. Reserve Bank of India (2018). RBI Handbook of Statistics on States, India Energy Portal, NITI Aayog
5. Government of India (2018). Ministry of Power, Central Electricity Authority, Load Generation Balance Report (LGBR) 2018-19
6. Government of India (2018). Progress of GrameenVidyutikaran (GARV)
7. Government of India (2018). DeenDayalUpadhyaya Gram JoytiYojana (DDUGJY)
8. Government of India (2018). District Information System for Education (DISE), Flash Statistics.
9. Government of India (2018). Health & Family Welfare Statistics in India, MoH&FW, 2018
10. Government of India (2011). Office of the Registrar General and Census Commissioner, India Census 2011
11. Government of India (2015). Planning Commission and Center for Monitoring Indian Economy CMIE
12. Government of Maharashtra (2018). Directorate of Economics and Statistic, Economic Survey of Maharashtra 2017-18
13. Government of India (2011). Office of the Registrar General of India (ORGI), Population Census 2011