



Compatibility between growth in road capacity and vehicles in Himachal Pradesh

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Abstract

This research paper on road infrastructure development in Himachal Pradesh provides an analysis of the growth and development of road infrastructure in the state over the past decade. The paper also examines the change in the number of registered vehicles in the state in the same decade and tries to draw a comparison between the sufficiency of road infrastructure development with respect to the rise in the number of registered vehicles in the state. The development of road construction in Himachal Pradesh can-not be widened due to a series of factors to the extent of increase in the number of vehicles in the State as the sources of income are abundant and people of the State are investing money for different purposes including purchase of vehicles due to which, traffic pressure of the limited capacity of roads is expected to increase. The research related to examine the compatibility between growth in road construction and increase in the number of vehicles to understand the research problem in perspective of compatibility of these two important factors.

Keywords: road capacity, compatibility of growth in road capacity and vehicles

Introduction

Urban congestion is one of the major problems faced by Indian cities and towns. In India there is a continuous migration of people from rural areas towards urban centers in search of better opportunities of jobs and respectable livelihoods. India being number two country in the world in terms of population faces lot of congestion on the roads due to heavy load of traffic and movement of people. The congestion in the urban regions is worst and in the rural and semi urban regions also it is noticeably high. Congestion on roads, although, is not a phenomenon which is prevalent in India but is a worldwide concern. In Indian context the problem becomes unique due to its high population density and developing state of the economy.

The framework of roads and highways works like a network of interconnected links, where strength of the links determines strength of the bigger network. The length and spread of roads and highways in India is inadequate given the large size of population and the magnitude of economic growth as compared to other countries of the world. This mismatch of traffic demand is due to difference in the economic tasks performed by people of the urban areas and the rural areas. It highlights the point that traffic demand, to a greater extent, is dependent on the occupational structure of a particular area. Industrial and commercial centres where workforce is primarily involved in manufacturing and selling professions have a different traffic demand throughout the year in comparison to the agricultural belts where workforce is mainly involved in agricultural work.

Himachal Pradesh is a state located in the northern region of India and is known for its uneven topography, hilly terrain and formidable mountainous region. The state has undergone significant transformation in recent years, and road infrastructure development has been a critical factor in promoting economic growth, tourism, and improving the quality of life of the citizens. Given the hilly terrain of the

state it is always a challenge for the governments and policy makers to match the road infrastructure of plain areas in other states, however, the need for the road infrastructure in the hilly state cannot be undermined. Himachal Pradesh is the best instance of such a situation. The development of road construction can-not be widened due to a series of factors to the extent of increase in the number of vehicles in the State as the sources of income are abundant and people of the State are investing money for different purposes including purchase of vehicles due to which, traffic pressure of the limited capacity of roads is expected to increase. The research related to examine the compatibility between growth in road construction and increase in the number of vehicles to understand the research problem in perspective of compatibility of these two important factors.

Objectives of the Study

The research has been carried out to achieve the following objectives with the purpose to scan out the compatibility between growth in the number of vehicles and growth in road infrastructure of Himachal Pradesh.

- To study the growth of vehicles in Himachal Pradesh
- To identify the growth in road capacity in Himachal Pradesh

Scope and methodology

The scope of the study spans to the analysis of growth in road infrastructure in Himachal Pradesh and it also analyses the change in the road length in comparison to change in the number of vehicles in the state during the years 2010 to 2020. Secondary data was taken for the purpose of this study from the publishing agencies of the state government. The data was then analyzed using required statistical methods to assess the level of road infrastructure in the state in comparison to the rise in the number of registered vehicles in the state.

Table 1: Growth in Total Road Length and Number of Registered Vehicles in Himachal Pradesh: The Correlates

Year (1)	Total Road Length* (2)	Growth (%) (3)	Registered Vehicles**(4)	Growth (%) (5)	Ratio- Road Length: Vehicles (6) {2/4}
2010-11	33722	-	76376	-	0.441526
2011-12	34169	1.33	79883	4.59	0.427738
2012-13	34647	1.40	91801	14.92	0.377414
2013-14	35142	1.43	96702	5.34	0.363405
2014-15	35583	1.25	103010	6.52	0.345432
2015-16	36049	1.31	114995	11.63	0.313483
2016-17	36623	1.59	129666	12.76	0.282441
2017-18	37586	2.63	136581	5.33	0.275192
2018-19	38454	2.31	130762	-4.26	0.294076
2019-20	39475	2.66	121865	-6.80	0.323924
C.G.		1.77		5.56	

r = 0.87 (coefficient of correlation)

Source: Statistical Outline of Himachal Pradesh (various issues), Statistical Year Book of Himachal Pradesh (various years), Statistical Abstract of Himachal Pradesh (various issues).

*In kilometers.

** in number

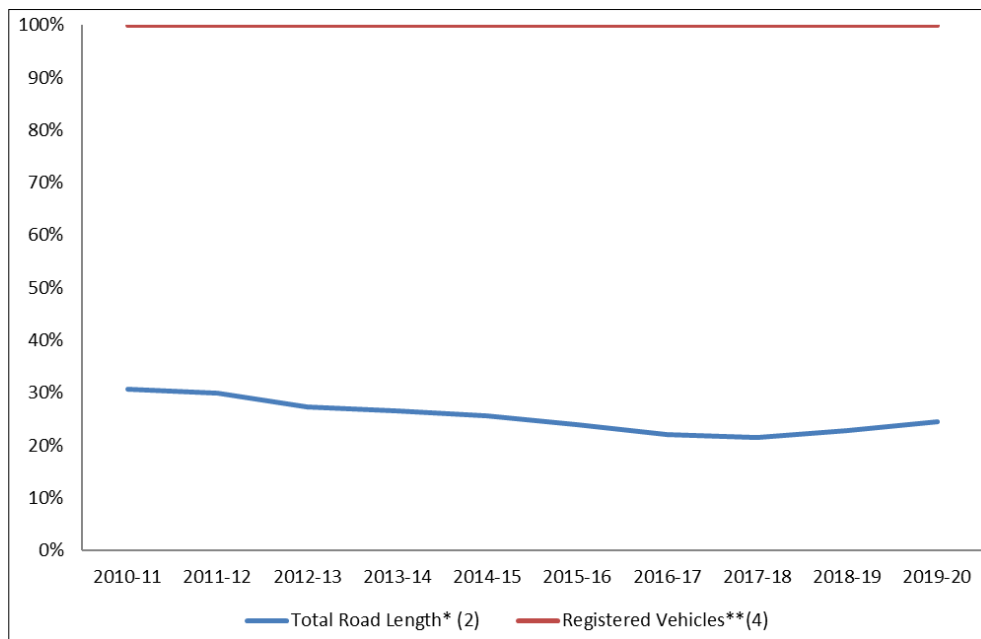


Fig 1

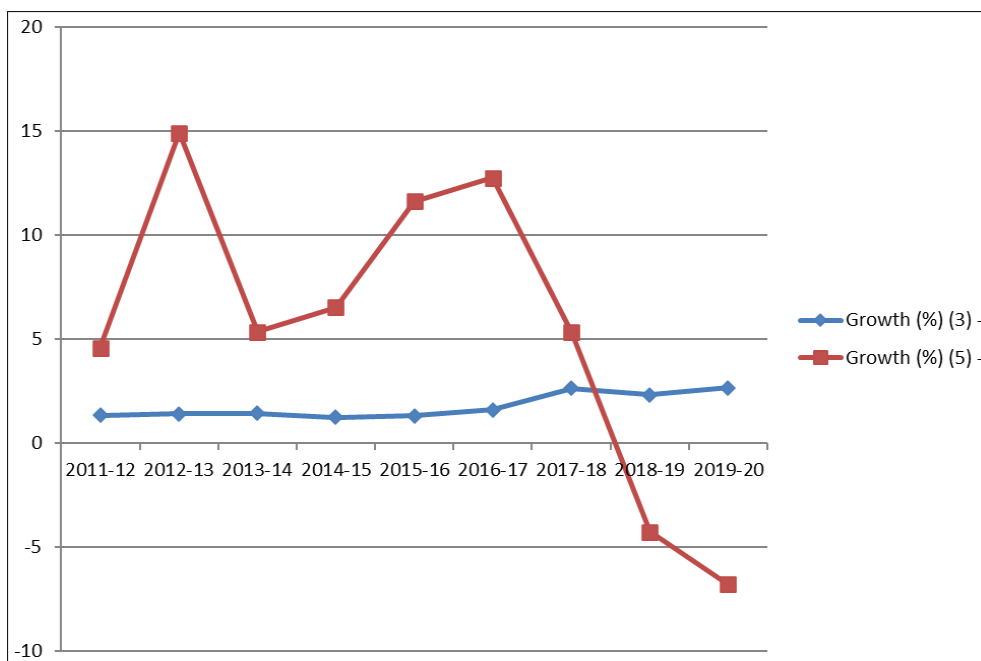


Fig 2

Total road length in the state of Himachal Pradesh grew by 1.77 times during the ten year period from 33722 kms in 2010-11 to 39475 kms in 2019-20. The growth of total road length annually remained below 2 percent from 2011-12 to 2016-17 and was above 2 percent between 2017-18 and 2019-20. The compound annual growth of the total roads of Himachal Pradesh was 1.77 percent during the period of given ten years.

The total registered vehicles in Himachal Pradesh in 2010-11 were 76376 which have grown to 121865 by the year 2019-20 which means that the total registered vehicles grew by 1.6 times over the ten year period. The growth of total registered vehicles had been positive since the beginning of the decade, however, the last two years registered a negative growth of -4.26 percent and -6.80 percent. Maximum growth of 14.92 percent was recorded in the year 2012-13. Overall, the total registered vehicles in Himachal Pradesh have recorded a noticeable compound annual growth of 5.56 percent over the given ten year period.

In the above table, correlation is calculated between the total road length and the total registered vehicles in the state. The value of coefficient of correlation comes out to be 0.87 depicting a very high positive correlation between the two variables.

Conclusion, findings and suggestions

Therefore, it can be concluded from the above study that the total road length in the State, for a ten year period from 2010-11 to 2019-20, has grown with compound annual growth of 1.77 percent, whereas, the total number of vehicles registered in the state have grown by a compound annual growth of 5.56 percent. Both the variables show a positive correlation and the value of correlation is 0.87 which implies that with the increase in total road length, registered vehicles have accordingly increased.

Based upon the study it is suggested that the government needs to increase the road length to accommodate new vehicles. It should also encourage usage of public transport amongst general public and simultaneously should work towards making the public transport convenient and affordable for the common people.

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