Chapter VIII

Conclusion
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Introduction:

Before giving the final concluding remarks it is necessary to state the various conclusions arrived at in the different chapters (from Chapter I to Chapter VII).

The important chapter-wise conclusions are as follows:

CHAPTER I: This chapter analyses how the process of industrialisation and urbanisation created the problem of social mobilisation. It mentions the specific advantages of cycle-riding and states the basic hypothesis to be proved. The hypothesis is that in modern city life the bicycle, as the most convenient and cheapest means of local transport, has a very important role to play in solving the problem of mobility of population in the modern city life.

CHAPTER II: The chapter points out the important characteristics of socio-economic and demographic changes in the life of the historic Poona city. It indicates how the historical dependence of Poona people on a bicycle will continue to increase in future and thus would go a long way in meeting the mobility needs of Poona population at a reasonable cost.
CHAPTER III: The chapter traces the historical development of the cycle industry in India. It analyses the typical role of a bicycle and bicycle industry in the context of the Oil Crisis and points out how the bicycle boom is created not only in advanced nations but also in developing countries like India. It has made a reference to the present problems of the bicycle industry and points out how the industry would be capable of meeting the ever increasing demand for bicycles provided the problems faced by the industry are solved when suitable government policies are adopted.

CHAPTER IV: The chapter describes through pictures, the peculiarities of different models of bicycles. It indicates how the structural and technical changes introduced in a bicycle from time to time increased the conveniences offered to a cyclist and how it became multipurpose. This study of changes in the physical characteristics of a bicycle are relevant from the point of the increasing impact of bicycle on population mobility.

CHAPTER V: This chapter is devoted to the comparative cost analysis. The analysis made indicates that bicycle as the most convenient and cheapest means
of local transport enjoys a significant cost advantage over other alternative means of transport like scooter, moped (Luna) two-seater and three-seater rickshaws, car and the P.M.T. Bus. Apart from this comparative cost advantage enjoyed by a bicycle - it is the most convenient vehicle for the common man. It's role in the city life in general and in the Poona City life in particular is significant. A bicycle would go a long way in solving the various problems in the city life (e.g. pollution, parking, movement of working population) and future city planning of the Poona City will have to be done by bearing in mind the important role played by a bicycle and to be played by it in future. Particularly the most significant alternative to a bicycle - viz. the P.M.T. Bus, is not likely to be available at a reasonable cost and in the most convenient manner in view of the unsatisfactory performance of the P.M.T. undertaking. In view of this and in view of the fact that the Oil Crisis is going to increase the comparative cost of machine driven vehicles in future the comparative cost advantage (in real and monetary terms) is going to increase in case of a bicycle. Thus bicycle shall continue to have a considerable impact on mobility of population in general and in Poona city in particular.
CHAPTER VI: This chapter is devoted to the demand supply analysis in case of the bicycle industry. As the analysis in this chapter reveals - (a) Demand for bicycles in future years to come is bound to increase in general and in Poona city in particular. (b) The supply position in respect of bicycles is so far satisfactory. However there are certain problems facing the cycle industry. For example - the problem of adequate supplies of raw materials, rising costs, wage bills, import substitution and under utilisation of capacity are the major problems facing the cycle industry. If suitable monetary and fiscal policies are adopted and if these problems are solved then the supply position can be improved in such a manner that equilibrium position in supply and demand could be attained in future years to come.

CHAPTER VII: This chapter is devoted to the preparation of mobility indexes for different areas in the Poona city. The chapter points out how mobility needs of population (as indicated by movements of population in different directions) are increasing in the different areas. Movements of population in different directions and in different areas would be more necessitated by the various demographic, ecological, sociological,
occupational changes and by the total process of economic development around the Poona city in particular. These mobility indexes point out how demand for bicycle is going to increase significantly and future city-planning in the Pune city will have to be done in the context of the vital role so far played by and to be played by a bicycle in future years till 2001.

These conclusions in the different chapters will now enable us to state the final conclusions of the Thesis.
Before laying down the important conclusions of the thesis, it is necessary, to point out initially that such a study is important for an undeveloped economy like India. Economic development in India has brought about several changes in the economy and importance of such changes in the economy from the point of view of the common commuter must be studied. A study of impact of a bicycle on the mobility of population in the cities and villages in under-development countries, is important in the sense that economic development must be distributed equally amongst all the common citizens. Such a study is not important for its own sake. It is more important to analyse what economic development has done to a common man. The analysis of distribution of wealth amongst common citizens indicates that very little has been done for the common-man and distribution of the fruits of economic standard of living of the common citizen of India has remained low historically and proverbially. A bicycle of a common-man does play a crucial role in his life, in our country. Its role in improving his standard of living is unique. For improvement of standard of living and increase in the common-man's mobility in life (whether geographical or occupational) are most important and it is interesting to know how cycle influences mobility of the life of common-man in cities and villages.
Advancement in economic development has brought about many important changes in the life in cities and in villages. These changes are demographic, sociological and economic. In the wake of economic development many problems have been created. To cite few important ones are, organisational developments of metropolitan cities and industrial developments around these cities, change in the social values, pattern of education, economic priorities, distribution of employment opportunity and the various administrative problems which are created for Government, by these developments in urbanisation. Mobility of population is the most important factor in the process of economic development. It is an important aspect of modernization and in absence of mobility, inertia and stagnation are undesirable consequences which retard future growth. Advanced technology is responsible for bringing into existence highly sophisticated machine-driven vehicles and one is prone to think that importance of most of the traditional vehicles like bullock-carts, tongas etc., is going to be reduced in future years to come. However, what has been happening in under-developed countries, is contrary to the above conclusion. In other words, in almost all the cities in the world and cities in the under-developed countries like India the importance of bicycle and bicycle industry (whose birth centenary was celebrated in 1981) has increased tremendously.
The present study confirms this conclusion. The other most important conclusions are: (1) The new pattern of organisation and modernization of cities have increased the need for mobility and the need for bicycle as an important vehicle for the local passenger transport, in spite of the fact that the various types of alternative means of vehicles are available to the commuters.

(2) The present domestic demand for bicycles in India and in the foreign countries has been on the increase. Accordingly, important changes have been introduced, in the models of the bicycles, to suit the convenience of a cycle rider. Owing to industrialization and the consequent occupational changes, many people from different strata of the society have come to realize the importance of vehicle whether machine-driven or man power driven. But the importance of machine-driven vehicle for a commuter is being relegated to the background and the commuter whether a rich or a poor, whether a government servant, or an employee in a private business enterprise, whether executive or a worker, whether a woman or a man and also school children and college students have come to demand bicycle as an important asset in their family - a more than a perfect substitute for a machine driven two wheeled vehicle.
Cycle industry in India is of recent origin and it is interesting to know that suitable quantitative and qualitative developments are taking place in the industry. Such developments are required as a result of the rising domestic and foreign demand. The industry was granted protection as an infant industry by the Government and many problems faced by the industry are on the point of being solved so that the industry shall be in the position to maintain equilibrium position in demand and supply in years to come. Industry has a large export potential and if capacity utilization improves it can be hoped that the bicycle industry in India would be in a position to meet the demand created by the ever increasing mobility needs of population in villages and cities, in India. It would also be in a position to maintain equilibrium in Demand & Supply.

The study is confined to mobility needs of population in the Poona City. During the last 20 years, from the time of Panshet disaster in 1961, several demographic, sociological ecological and economic changes have taken place in the life of Poona City. The city has grown to such an extent that it is the most important industrial city next only to Bombay and by the year 2001, there would not be any difference between the pattern of life in Poona and in Bombay. As has been pointed out in the historical study of the development of Poona city the core or the central part of the Poona city and the area around have
grown to such an extent that the frontiers of the development of the Poona city can be measured by the area covered by a circle with a radius of 20 KM.

Such development has necessitated an increase in the mobility needs of the people of the Poona city and in meeting these needs a bicycle is going to play the most important role. Moreover a bicycle could be assigned an increasingly important role in the life of Poona city because of the following reasons:

1. **Population Growth and high density of population** have created problems of housing, congestion, pollution and city hazards. This necessitated movement of population from the core to the outskirts.

2. **Industrial development in the surrounding areas** necessitated movement of population from the frontiers to the central part.

3. **Occupational changes** increased the percentage of working population and resulted into inclusion of people like Agriculturists, Milk-men, workers, small entrepreneurs, government employees, employees in the private industrial units, college students, school children and
ultimately women population into the new occupational structure.

(4) Historically about 49% of the commuter traffic in the Poona city is covered by bicycles. Bicycle had been and will continue to be an important asset of local passenger transport because of the several advantages conferred on the commuters by a bicycle. As it has been proved by the comparative cost analysis it is the cheapest mode of transport, whose comparative cost is almost nil. The oil crisis has added to the comparative cost benefits enjoyed by the bicycle rider. Tensions and diseases created by the city life can be reduced by bicycle riding and bicycle riding has become a health resort. Thus bicycle is an important vehicle for local movement for all the persons irrespective of age, sex and occupation and his/her status in the society.

(5) The public local transport system (PMT) can prove to be an important alternative to a bicycle because public transport system enjoys economies of scale and these economies of scales should be passed on to the commuters in the form of low
fares. However, cost of commuter transport can be minimised only when the existing public transport system (P.M.T. in case of Poona city) operates to the full satisfaction of the commuters. However, as a matter of tragedy, for the last 15 years, P.M.T., undertaking has not been found operating satisfactorily. Paradoxically, the public transport undertaking as a business unit should earn profit when demand for local transport is continuously rising. However, due to wastages of resources resulting from m'smanagement and due to the external factors beyond their control, P.M.T.'s performance in terms of efficiency, has been less than satisfactory. The implication of such an un-healthy development for the common commuter is that P.M.T., which used to be a cheap mode of transport previously is not going to be same in future. 60% of the population in Poona belongs to the lower income group. From the point of view of such people only alternative to the P.M.T. buses is to own one's cycle as a substitute for P.M.T. bus travel. One cannot be hopeful that in the future years to come the problems of P.M.T. would get solved. The study of the budgets presented by P.M.T. recently
point out that in the 10 or 20 years to come, the situation is not going to improve, problems of local passenger transport will still get aggravated because of the oil crisis. A common man, whose monthly income is less than Rs.500/- (per month) will not be in a position to afford any machine-driven two wheeler which should be obtained at a reasonable cost.

The comparative cost analysis indicates that such alternative vehicles as car, rickshaw, mopeds, scooters are but less than a perfect substitutes for a cycle. The cost implications in the case of a bicycle are such that people in the villages, in the cities are bound to show preference to the cycle over other means of transport.

Thus the only way of increasing mobility of population in cities and villages is to resort to a bicycle. Fortunately, cycle industry in the country can keep pace with ever rising demand for bicycles. The mobility indexes calculated point out that mobility of population is going to increase in all directions. Town planning in Poona city in future will be done in such a manner that cycle riders will be allotted different lanes and roads and thus cycle traffic will be greatly facilitated. Central part
of the city will remain congested as ever and future planning of the city will have to be done in such a manner that dispersal of population in different directions from the areas of higher density to areas of lower density will be a desirable phenomenon to be achieved. Industrialization has brought in its wake different patterns of city life and emergence of slums is a major problem, which will have to be tackled by the city planners. Future planning of the city of Poona will have to be done in such a way that slum-dwellers, workers, and the new immigrants to the city will have to be provided settlement in new areas which are less congested, but have potentialities for development movements of population are possible only when the cheapest mode of transport like a bicycle are available to a common man. So long as economic development does not permit the common man to possess a high level of income to purchase a high priced vehicle, bicycle will continue to enjoy comparative advantages which it has been enjoying for a long time. This fact has been accepted by government also.

The mobility study and the comparative cost study which in themselves are supply and demand studies of the cycle industry point out that:

1. Because of lower comparative cost, demand for bicycle will continue to increase.
(2) Because of increasing mobility needs of population in the cities and villages, demand would continue to increase in future also.

(3) So far as P.M.T., is unable to provide cheap and reliable means of local transport to commuters, cycle will continue to have increased demand. The demand projection done in the thesis confirms this conclusion.

(4) On the supply side, industry is in a position to meet the demand created for cycles and can capture foreign markets in future.

(5) The original demand for bicycle i.e. demand from those people who should possess cycle as a means of transport, suited to their living and derived demand for the cycle from the new classes are going to increase because of the problems created by urbanisation. In case of Poona city for the total population of 19 lacs the projected demand would increase and as the recent reports of the P.M.T. undertaking point out the number of commuters taking advantage of bus travel is going to be reduced in future and this would add to the demand for bicycles in future.
Generally speaking in an area covered by a circle with a radius of 5 to 6 KM, every day 20 to 25 thousand bicycles run in the area. This dependence on bicycle is going to increase in future. The replacement demand for bicycles will also be high because of the lack of basic knowledge of upkeep and maintenance, lack of facilities for servicing and upkeep of cycles and thirdly, because of weather conditions in Pune city the problem of rusting of cycles reduces its life to four and five years and thereafter replacement of old cycles is a must. Increase in demand may thus be to the extent of 10% addition made by replacement needs. Therefore, bicycle as cheapest means of local transport will have a considerable impact on the mobility of population in the cities and in villages. In fact it is the only cheapest means of conveyance available to a common man in India. Government has also, therefore, adopted a policy of encouraging indigenous production of bicycles. In the future years to come, if some problems of the industry are solved by the Government policy, industry would certainly cope with the ever increasing demand for bicycles and will make a major contribution to increasing mobility of population in Indian cities. At the end,
it must be pointed out that whatever the efforts in the form of city (Town) Planning and Development, Strategies for Pune, planners can never get rid of the small lanes where road-widening is impossible and there the kingdom of bicycles is unconquerable by any of the vehicles. Traffic Planners have been resorting to 'no entry' strategy at several places causing great inconvenience and placing obstacles in the flow of people. A bicycle alone can overcome the hurdle and will continue to be the permanent feature of local conveyance for years to come.

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