CHAPTER - II

CONCEPTS AND PROBLEM
2.1.0 Introduction

In the previous Chapter 1 Sections (1.1.0 and 1.1.1) the problem of the present study and methodology resolutions for regional transport planning and development were presented.

This Chapter, therefore, attempts to highlight the theoretical concepts of region and role of transport planning in regional development.

2.2.0 Concept of Region

Concept of region has been considered differently by different researchers Herbertson [42], Joerg [52], Prakash [80] belonging to various disciplines. These researchers conceived 'region' in the context of the concepts pertaining to their own disciplines.

Brown [5] suggested that "a region may be composed of areas or locational entities interns of resource endowment which in some respect are homogeneous. He further stated that such areas or location entities need to be contignous to each other and the variables upon which the region is defined are attributes of the areas being grouped. Such regions are formed as uniformed regions".

Richardson [89] categorically used four different approaches in defining a region, (i) Homogeneous region (ii) Nodal region (iii) Functional Region and (iv) Planning region. We define these approaches as follows:

(i) Homogeneous Region

This concept was considered on the basis of broad geographical areas of specialisation [1] [6] [77]. The homogeneity of region is primarily conceived in terms of agriculture and its marketable surplus. It was observed that unifying cohesive force behind a region is dominance of its economy by an export base, however, the changes in the level of activity of the export base may convey impulses to income level throughout the region so that there is uniform direction of movement in incomes over the region as a whole to other regions also. However, complete homogeneity is unworkable, theoretically undesirable and fact unobtainable except
with reference to large homogeneous regions.

In the present research therefore, we have considered eleven (11) homogeneous transport zones in Bharuch regional areas as shown in chapter V with respect to a set of present traffic generation activities and expected future potentials in each zone. The homogeneous zones adopted in this study has been calibrated on crop zones as shown in Chapter V section 5.2.4.

(ii) Nodal Region

It emphasizes the interdependence of different components within the region and explicitly accounts for distance factors and time scale parameters. Gajda [34] observed that, functional linkages are clearly visible as flow phenomena of population, goods, services, communication and traffic, the heaviest flows tend to polarise towards and from one, two or more dominant centres.

In Bharuch region eleven (11) internal and six (6) external nodal centres/points have been considered for easy inter and intra-regional capture of traffic in terms of activity development patterns for enabling transport planning, modelling and development.

(iii) Functional Region

These regions are associated with its economic base. Functional regions can be sub-divided into sub-functional regional areas such as industrial centres, commercial and service areas as one desires in regional transport planning. Coat and Hunt [20] presented the approach to delineate functional regions. They mapped all journey to work interaction using arrows to indicate the strength and directions of flows, then subjectively set functional regional boundaries. Rusett [88] recommended factor analysis matrix containing standardised measures of the flow on association between places, functional grouping being indicated by the resulting factor loading pattern. A functional region, may be identified by assigning a priori, the characteristic features, such as commercial, industrial and service classes of workers. In
Bharuch regional area we formed a origin-destination (O-D) functional zonewise matrix for future activity development and transport planning in this research as described in the chapter V section 5.2.9.

**iv) Planning Regions**

This concept includes economically backward and tribal areas in case of regions in India. Therefore, one may think of certain areas to declare as no industry zone and the government programmes can be enforced for the development of entire region. Friedmann and W. Alonso [29] view the region to encompass the decision making and planning process systems, therefore, regional planning is made synonymous with regional development policy at the national level (balanced integration) with a process of decision making and design in the elaboration of investment projects at the regional level and with economic development programmes for sub-national planning has something to do with regional development resource management, agricultural, community and transportation improvement.

Prakash Rao [81] explained system of a region as planning region, the different regional factors interact and operate to functional actions and reactions, any change in one normally leads to changes in others thus setting up a chain of reaction. In fact there is a two way chain reaction, one internal within the region and the other external, outside the region.

Prakash Rao [82] opined that, planning should be seen as a means to so organised human society that it can adjust itself to the changing socio-technical environment and use this environment to maximise the welfare of its members.

However, no matter which concept of region is considered for the present discussion in general, one has to understand and define a definite existing and future regional distribution of economic activities that influences the demand for both goods and passenger traffic in each case. In practice the whole problem of transportation and regional development paves way to the determination of transport development plan in a given study region. This task of determination of transport development plan in a given region is called regional transport
planning, modelling and development. In this context, regional transport planning models relating to this problem have been discussed in chapter III and hence empirically tested in chapter VI and VII.

2.3.0 Role of Transport Investment in Regional Development

In the earlier section 2.2.0 of this chapter we have generally discussed and understood the concept of region. But no matter which concept of region is considered for regional transport modelling, planning and development, one has to know transportation with respect of regional economic development.

In other words, if one has to be convinced that regional transport planning provides a balanced and sustainable economic development then, the task in front of planners or policy makers seeks to understand and research the problems that arise in devising regional transport facilities so as to enable the whole economy to achieve a wider socio-economic development goals, as well as to prepare a systematic basis for planning the same facilities in other developing economies also.

Planning Commission, Government of India [83] observed that in developing economies, particularly in economies with a vast spatial geographical expanse as in the case of India, different parts of the economy are at different levels of development. While some regions would have achieved phenomenal growth in socio-economic terms, others would be lagging far behind even at national average levels. Conversely, it has been fully recognized that vast areas of developing countries have remained backward over the years which is both a challenge and opportunity to be developed and upgraded with a view to achieving over all growth in the national economy. In actual practice, the diffusion of skills, technology and upgrading of development process in these areas will bring manifold benefits to the society and economy as a whole. Thereof, one of the most important objectives in Indian five year development plans as pointed out in the earlier chapter - I is to bring about a progressive reduction of regional inequalities in the pace of development. In this context, the mechanisms
of area planning have been adopted to provide an integrated approach to the problems of regional imbalances and the sub-plan approach has been promoted so that the area plans are fully integrated with the national development plan incorporated with various programmes already described in the earlier chapter - 1 (1.1.0).

In the earlier discussion, we have understood that the main objective of transport planners is to provide transport modes and also workout a regional transport network in a manner such that caters to the total traffic demand generated, at a minimum cost to the society as a whole. In other words, the transport network proposed should satisfy the social efficiency criteria. This criteria could, however, in actual situation conflict with the needs of balanced regional development. As generally happens, all regions of the country are not equally endowed with natural resources. In view of this, if planned corrective action is not taken by directing investments to areas lacking natural resources then the disparities would still perpetuate.

However, a point which one needs to know and emphasize is that location of regional economic activities are a major determinant of transport demand and therefore these choices must be made on the basis of a well formulated national location policy. At the same time, investments made in developing transport facilities can also influence regional location and land use development patterns and this could serve as a useful instrument in correcting existing regional disparities and in promoting balanced regional development in the years to come.

It is also observed that regional distribution of economic activities influence the demand for both goods and passenger traffic zonewise. The commodity flow pattern and the volume of inter-regional movement of goods is determined by the location of production centres in relation to consumption centres of the study region. Conversely, the demand for regional passenger traffic is affected by the dispersal or location of economic activities which in turn determine the rate of growth, size and structure of urban centres and towns that generate intra-regional and inter-regional passenger movement.
2.4.0 The Problem Setting—Two Schools of Thought

From the previous Chapter - I section (1.1.0) and above discussion of this chapter, the case for availability of adequate and effective transport services as an essential requirement for regional economic development has already been established. In this context a point which has been a subject of controversy is whether transport services should be developed before the growth of other regional economic activities or after the transport bottlenecks have proved a hindering factor. The school of thought [83] supporting the view that transport facilities should precede growth of other economic activities, argues that once social overheads like transport facilities are created and expanded, they generate a variety of external economies which reduce the cost of inputs used by other economic activities. This serves as a powerful stimulus for exploiting under utilised and unutilised resources which would otherwise have remained unused for want of infra-structural facilities. The other school of thought holds opposite view and argues that transport and other infra-structural facilities should be built only in response to bottlenecks and capacity shortages, but not in anticipation of demand modelling that may not finally materialise [50]. Herewith, an idea of the same thinking can also be had from various researchers as what follows:

Kindleberger [55] established a relationship between transportation and economic development that “--- regional markets grown because of improvements in transportation and communication facilities. The market is originally local and small. Demand is restricted by cost of getting goods out of the village and ignorance of how much they can be bought for outside markets. In these circumstances, markets grow though increase in transport and communication. The expansion becomes cumulative. Increased outlets in turn raise the demand for other products. A new supplies of these come on the market, in turn incomes grow further. The linkage of markets by an improvement in transportation or by the improvement in a product that makes it light and more readily transported, becomes part of the development process”.

Heymann [43], Storey [100], Gautheir [35] and Micheal [67], argued that, planning transport facilities in developing economies is not only sufficient condition but necessary condition
to regional economic development. They observed that, lack of adequate transport facilities can be one of the greatest obstacles to economic progress — the difficult comes when the choice of transport — what is rarely mentioned within the socio-economic context, which may dictate not so much (or little) investment in transport is needed at all. In some sense, transport may be neutral factor, which needs to be related to what it is going to be used for and to who is going to use it, before development and investment can take place. In the same argument, transportation is rarely desired for itself, but derived as a means to serve other objectives”. Therefore, it is essential to consider transport within a matrix of potential demand. From the same context, Storey [100], Willson [107] and Martin [66] established three causal and temporal possibility matrices as elaborated in following discussion.

(i) A positive effect on regional development process — where in, planning transport facilities directly improves productive activities.

(ii) A neutral effect on development process, where in, planning transport facilities does not independently produce direct productive activities but subsequently increases in the level of economic growth.

(iii) A negative effect where in, over-investment in transport reduce potential growth in directly productive activity and subsequently leads to an absolute decline in the level of per capita income.

In the recent past, therefore, Planning Commission, Government of India [83] “gave a serious thought to the question of whether transport investment is really an essential pre-requisite for regional economic development or it should follow development of other economic activities which generate adequate demand for transport services. In other words, endowing a region with a good road network will not by itself result in an upsurge of new industrial or agricultural activity. Apparently, expansion of transport is permissive, it enables a dynamic developing situation to work its way and reinforce existing motivations. The degree to which transport creates or compels new activity will depend on other equally necessary conditions within the economy. Such as the quality of its administrative structure and social
order, the level and quality of education, the zeal and drive of its entrepreneurial class, and other dimensions of the people's propensity to grow. If these qualities are deficient, transport investment is unlikely to start the process of self-propelling growth”.

At the same time, Planning Commission [83] considered it necessary to emphasize that inadequacy of transportation acts as an inhibiting factor in the actual process of development. As already stated above, planning of new transport facilities in a less developed part of the economy will not automatically bring about an economic transformation of the region. But if planning of such a facility forms an integral part of development plan for the region and selection of the project is based on comparative cost analysis of different modes of transport, its construction prima facie will be an essential pre-condition, without which development of the region will be hampered. Therefore, it is observed that in planned development, where different sectors of the economy are expected to grow in close coordination, transport is only one of the essential elements of an integrated plan for area development.

In the above context, the National Transport Policy Committee of India [83] put forward two considerations to justify transport capacity creation in anticipation of demand. First, transport like power is a non-traded commodity that is, its service cannot be imported and secondly, transport investment is lumpy in character, it is, therefore, necessary to allocate funds for creating transport capacity even if the demand for its service does not justify investment on the basis of its commercial viability. The lumpiness of investment also makes it necessary to create capacities on a scale larger than is justifiable in relation to immediate demand so as to avail advantages of economies of scale associated with a transport plan [25].

2.5.0 In the Case Study

In the background of the above discussion and understanding, Bharuch region has been selected as a case study for the present research to bring out a practical feasibility of planning tools and models. Past experience and studies in Bharuch regional area development potential
generated by agriculture and industries are either under utilised or they have failed to exploit fully the endowed regional unit development. In this case, it is observed in many studies that adequate economic infrastructure and institutional base are pre-requisite for fully utilising agricultural and industrial potentials. Therein, it was argued that the transformation of traditional agricultural system from a non-commodity market to a commodity market system can be achieved only with adequate economic infrastructure-institutional base as such proper planning of these services is essential with a regional framework.

Conversely, it was also argued that the level of road transport linkages and its accessibility to regional settlement and resource endowment form an important economic infrastructure determining the efficiency and level of utilisation of agricultural and industrial development potential and thus a proper integration of road transport network and activity development planning need to be achieved in the years to come.