CHAPTER-I
AN OVERVIEW OF LITERATURE
URBAN DEFINITION:

The problem of defining the 'urban' areas has been a controversial one, and consequently a massive literature has grown up on this. In fact, having devoted a whole yearbook to this problem, the United Nations¹, (1955) concluded that, 'there is no point in the continuum from large agglomerations to small clusters or scattered dwellings where urbanity disappears and rurality begins'. However, some kind of a definition must be found in spite of this confusion. Such definitions, it must be remembered, are strictly prepared for working purposes. ² This definitional problem has also crept into the minds of the Census Commissioners of India and in each census year, some discussions on what should be called 'urban' have taken place. Every definition has evolved according to the general tests laid down by the respective Commissioners during each census. The objective in this thesis paper is to trace the evolution and elaboration of such criteria for defining the urban areas form 1872 to 2001, that is, from the first to the latest one.

To a layman, an urban center is basically a greater concentration of population. Urban centers are universally viewed as larger than their rural counterparts. In reality, however, the notion of size is difficult to pinpoint.

Carter³ (1979), points out that different countries use different minimum population in defining an urban center depending upon the

different cultural and economic situations involved. Mitra\(^4\)(1977) gives a comprehensive history of the censuses of India. According to him, the earliest censuses taken by the Portuguese and the British were not very accurate, though these served significant roles as records of the time when the colonial rule was being firmly established in India. These censuses were more in the nature of tools that improved the encyclopedic knowledge about the country. The first ever reliable counting took place in 1872. The term ‘reliable’ is used strictly in a relative sense, since according to Rao\(^5\) (1977), there still are ‘inherent defects in the basic collection of data’ in Indian census.

1872 and 1881 censuses

In the census of 1872,\(^6\) the sole criterion for determining a ‘town’ was such that a settlement should have at least 5,000 inhabitants. In the next census of 1881, the following definition was adopted, ‘A town is a collection of numerous dwellings near each other within a limited area, having shops which provide a continual open market for the supply of goods, especially of manufactured goods’ (Census of India 1881). This was a very elastic definition. Moreover, the authority of selection was left to the individual district officers. The result was massive reduction in the number of towns; from 479 in the previous census (1872) it came down to only 227 in the 1881 census. Of these towns, 64 were municipalities or had civil stations, and all of

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them except 43 had more than 5,000 inhabitants. At the same time, some 300-350 (so called) villages with more than 5000 inhabitants were excluded from the list, as they did not satisfy accepted definition.

1891 census

The general principles of 1891,\(^7\) census for defining the towns were broadly as follows (Census of India 1891): (a) the population should be not less than 5,000, residing in houses more or less contiguous, not in scattered collections as hamlets. (b) The place, if not containing the above population, should be under the operation of some municipal or chaukidari (police) etc., merely a large village, but should have some distinctly urban character, as that of a market town. (d) Where a town is made up of several distinct portions, each should be shown separately as municipal units, civil stations, suburbs and cantonments, etc.

1901 census

The 1901,\(^8\) census adopted an even clearer definition of a town. It identified the settlements as urban if they had the following qualifications (Census of India 1911a): (a) every municipality of whatever size, (b) all civil lines not included within municipal limits, (c) every cantonment, and (d) every other continuous collection of houses, permanently inhabited by not less than 5,000 persons, which the Provincial Census Superintendent may decide

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\(^7\) Census of India (1891), proceedings, Part I (Enumeration) containing orders and general instructions up to the 30 June 1890, No. XCVI, p.34.

\(^8\) Census of India (1911a), Imperial Code of Census Procedure, Part I, Enumeration, p. 5.
to treat as a town for census purposes. In the native states, where there were no municipalities, this definition had to be extensively applied. While dealing with the questions arising under the fourth criterion, the Provincial Census Superintendent had to take into consideration the character of the population, the relative density of the dwellings, the importance of the place as center of trade, and its historic association and to bear in mind that it was undesirable to classify as towns the overgrown villages without any above mentioned urban characteristics. In the same census (1901) it was also mentioned that an urban centre with not less than 100,000 inhabitants was to be treated as a city for census purpose.

1911 census

The 1911 census defined a town on the basis of the following criteria:

(a) every municipality, (b) all civil lines not included within municipal limits, (c) every cantonment, and (d) every other continuous collection, of houses inhabited by not less than 5,000 persons, which the Provincial Superintendent of Census Operations may decide to treat as a town for census purposes. In the native states, where there were no municipalities, this definition was to be extensively applied. The Provincial Superintendent of census Operations as in the former years was to use his discretion regarding any question arising under the fourth criteria.

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However, the problem of using a somewhat quantitative rather than a qualitative approach had already come into the minds of some census administrators. The United Provinces Commissioner of 1911 census, for example, suggested that many places with population of less than 5,000 had the distinctive characteristics of towns, and that measured by this subjective index, where between 12 and 15 per cent of the population may have been in character urban rather than the 9 per cent usually recognized (Census of India 1911b).

1921 census

In the next census year, that is 1921, a town was defined on the same lines as in 1911 and 1901 including: (a) every municipality, (b) all civil lines not included within municipal limits, (c) every cantonment, and (d) every other continuous collection of houses inhabited by not less than 5,000 persons which the Provincial Superintendent of Census Operations may decide to treat as a town for census purpose. In the native states where there were no municipalities, this definition was to be extensively applied. While the first three conditions cover places that are, as a rule, of a more or less urban character, they would not in themselves be entirely comprehensive. Thereby the fourth condition renders possible in the inclusion of other places which, though they have no attained local self-government, still posses urban characteristics differentiating them from the larger class of purely agricultural village (Census of India 1921).

10 Census of India (1921), India, Parts I, Report, Vol. I, pp. 63, 64, Para 41.
It is interesting to note in this context that the additional urban element, which this last clause introduced, was of considerable importance. The number of such towns, i.e. those not falling within clauses (a), (b) and (c) of the definition at this census were 1,040. They all together contained a population of seven million persons or 22 per cent of the total urban population of India. While identifying the difference between a small town and a large village, this census admits that municipalities and other places treated as towns contain a considerable population, which is predominantly rural in character. This is especially so as the boundaries of some municipalities are owing to local sentiments, widely extended and include a good deal of agricultural land. In fact, it is still a common feature in India that the peripheral areas of municipalities are largely rural in land use characteristics.

No rigid definition of a city was prescribed, but towns of 100,000 or more were ipso facto classed as cities. At the same time, also included in this class were such other larger towns as the local government selected as of sufficient importance to justify the more detailed presentation of statistics prescribed for cities.

1931 census

In the census of 1931, the definition of a town was taken somewhat arbitrarily. Towns of not less than 100,000 inhabitants were to be treated as cities, and also any other towns, which the Superintendent of Census

\[11\text{ Census of India (1931), India, Part I, Report, Vol. I, pp. 45-46.}\]
Operations decided to treat as cities subject to the sanction of the local government. But the census code further provided for the treatment as a town of (a) every municipality, (b) all civil lines not included in municipal limits, (c) every cantonment and (d) every other continuous collection of houses, inhabited by not less than 5,000 persons, which the Superintendent of Provincial Census Operations decided to treat as urban. In making this decision, he included density of the dwellings, importance in trade and historic associations, and to avoid treating towns as overgrown villages without urban characteristics. The net effect of this definition was that the total number of towns in India came down to a meager 600 from 1,040 of the previous census year. Consequently, the total number of their inhabitants also came down to some four million persons, indicating the comparatively small size of many of these towns. It is true that considerable variations existed in the attitude observed by census superintendents while exercising their discretionary power of classification. As a result, varying degrees of urbanization of different provinces cannot necessarily be taken at their face value (Census of India 1931).

1941 census

In the census of 1941, a town was defined as a place of not less than 5,000 inhabitants possessing definite urban characteristics. All municipalities and cantonments were included as towns. In particular cases, places with a population, of less than 5000 were also treated as towns, the character of the

population the relative density, the importance as a center of trade and other amenities were considered to be urban characteristics (Census of India 1941).

1951 census

In the census of 1951,\textsuperscript{13} (the first in independent India) a somewhat more rigid definition of a town was incorporated. A town was defined as normally inhabited locality with a total population of not less than 5,000 persons, while places with larger population but not possessing definite urban character may not be treated as towns. At the same time, places with a smaller population and definite urban character (including all municipalities and cantonments and other centers having local administration) were to be treated as full-fledged towns. The authority of the decision rests with the state governments and state census superintendents (census of India 1951). For the first time in the history of census in India, all statistics were presented separately for rural and urban areas.

1961 and later censuses

Before the 1961,\textsuperscript{14} census, major socio-economic changes such as the completion of two Five Year plans, merger of the princely states, and the reorganization of state boundaries had already taken place. Therefore, the 1961, census demanded a more rigid application of the tests for urban settlement. So far, the administrative set-up was mostly responsible for

\textsuperscript{12} Census of India (1951), India, part II A, Demographic Tables, Vol. I, p.2.
\textsuperscript{13} Census of India (1971), General Population Tables, Series 1, Part II A (1), p.3.
giving a place the designation of a town and no rigid statistical test was used. Such a process of definition often led to confusion, as the 1901 census commissioner pointed out, ‘Many of the places which have thus been treated as towns are in reality nothing more than overgrown villages’. Partly for this and partly for other reasons, several significant modifications were made in the 1961 census. This definition was much more rigorous and was followed throughout India in all the constituent states. An urban place, according to this definition, should first be either a municipal area or come under a town committee or a notified area authority or cantonment board. Secondly, to qualify as a town it should have: (a) a density of not less than 1,000 persons per square mile (386 persons per square kilometer), (b) a population of 5,000 and more, (c) three-fourths of the working population engaged in occupations outside agriculture and (d) the place should have a few ‘pronounced urban characteristics, and amenities’, like newly founded industrial areas, large housing settlements, or places of tourist importance (Census of India 1971). This definition is followed during the 2001 census. The last of these criteria is, however, rather vague and leaves some scope for subjective assessment. Nevertheless, such a major change in the methodology of defining a town had a great impact on the absolute number of town in 1961, and the number came down to 2,700 from 3,060 with a variation of 360 town.
URBAN AGGLOMERATIONS:

The census of 1951 introduced the concept of "town group". It is defined as 'a group of towns which adjoined one another so closely as to form a single urban locality'. This was done with a view to distinguishing a group of towns from an isolated town so that areas of conglomerate growth can be identified for the purposes of future development and planning. This practice was continued in the census of 1961. The only difference was that while in the census of 1951 the distinction between town group and town 'was limited only to town groups with an aggregate population of 100,000 and over', the census of 1961 extended the concept of town group to all size-classes and did not limit it only to class I urban areas. In the 1971 census, the definition of town was the same as in 1961 but the term "urban agglomeration" was chosen instead of the concept of "town group". An urban agglomeration was identified as: (a) a city with a continuous outgrowth (the part of outgrowth being outside statutory limits but falling within the boundaries of the adjoining village or villages (b) one town with similar outgrowth or two or more adjoining town with their outgrowth as in (a), and (c) a city and one or more adjoining towns with their outgrowths all of which form a continuous spread (Census of India 1971).

The census of 1971 also introduced the concept of the "standard urban area". It was defined as the projected growth area of a city or town as it
would be after 20 years, that is, in 1991. This concept takes into account not only the towns and villages, which will, in future, merge into it but also the intervening areas, which are potentially urban. The subsequent censuses of 1981, 1991 and 2001 have more or less retained the criteria as they were.

A review of the changes in the working definition of the urban areas in pre and post - Independence period shows that the census administrators have gradually shifted towards greater quantification and objectivity. In the earlier definitions, there was much scope for subjective assessment. In fact, a census enumerator had the power to designate a settlement as either urban or rural, according to sheer personal whim. This element of subjectivity has now largely been eliminated, thanks to major changes in the definitional criteria. However, arguments may be raised regarding these criteria themselves. Are these as accurate as it seems? Take for example, the 5,000 cutoff points in population size. It is true that we do need some such break-point, but the time has now come to re-assess its value on the basis of the existing socio-economic Para-meters. Such criteria should be set in some context, that is, taking into consideration the simple demographic features such as the population density and the rate of natural increase of population; cultural features such as the tradition of communal living in large village often having even more than 10,000 inhabitants; economic features such as the organization of land-holding in present societies and so on. In the present Indian situation one cannot but suspect that a revision of this population size
criterion is urgently necessary. Particularly, in the census of 1981, the large numbers of the so-called towns that have sprung up during the last decade have rather large doses of rural ingredients making them quite a poor mixture of ‘rurban’.

It will be argued, however, that these settlements also fulfill other criteria for being designated as urban. For example, these have more than three-fourths of their working population engaged in non-agricultural activities. But a closer study would adequately reveal that there are mostly tertiary activities with a great emphasis on the service and trade sector. Even in those towns where the secondary sector does engage some of the working population, a detailed inspection would show the true nature of this sector. Economists have repeatedly pointed out that a large proportion of the secondary sector in India consists of tiny, informal, processing units. The amount of the value added by these units is so meager that these can, in no way, be compared to the organized industries. Naturally, occupational structure figures based on such wide spectrum classifications are bound to give distorted, or even in cases inflated pictures of the secondary sector of the urban economy. What is needed today is a review and consequent revision of the definition by our administrative authorities.” The historic consideration of the subject, as well as the survey of its current features, has led to the conclusion that a definition of urban places cannot be devised which has unvarying relevance throughout the changes in time and diversity in local
conditions. It is recognized that the urban phenomenon is associated with numerous aspects. Furthermore, these aspects can coincide or overlap to a varied extent, and not all are necessarily present at the same time. Urbanization consequently will not be confined to any single definition for the present purpose. Instead of a definition, the 'statement of recognition' will have to be accepted as a more adequate expression to reflect the manifestations of a greatly varied and complex process.\textsuperscript{15}

**DEFINITION OF URBAN AREA OF FOREIGN COUNTRIES:**

When it comes to defining an urban settlement, various countries have tried to combine different sets of criteria mentioned here. In the following paragraphs, an attempt would be made to refer to the definitions of urban settlements being used by a few select countries, with a view to understanding the various combinations that have been adopted. It may reflect the socio-economic background of these countries. How far, the differences in the definition of an urban center, adopted by various countries are the true expression of their difference in a culture; settlement patterns, system of administration etc., or how far they are simply a matter of historical tradition is difficult to determine.\textsuperscript{16} Most of the countries defined their settlements as urban on the basis of minimum qualifying size of population. However, the size may vary from country to country, the criteria


of minimum size in Canada, cities towns and villages whether incorporated or unincorporated including urbanized fringes of cities classed as metropolitan areas and other major areas, having a population of more than 1,000 persons are classified as urban settlements. The urbanized fringes of certain smaller cities are also considered urban places if the population of the city and its urban fringe exceeds 10,000.

It may be worth mentioning here that in some countries like Venezuela and Spain, it is customary to divide the settlements in three types, i.e., urban, rural and intermediate. For instance, in Venezuela, a settlement having a population of less than 1000 is considered as rural, a settlement having a population of 2,500 is considered as intermediate settlement. Similarly, at one time in Spain the municipals having a population size between 2,000 and 10,000 were treated as intermediate settlements. However, the practice of having intermediate category of settlements is not very common. In the Netherlands, urban is defined as: all municipalities with at least one population cluster of 5,000 or more inhabitants and other municipalities in which not more than 20 per cent of the economically active male population is engaged in agriculture. In Japan, urban municipalities (Shi and Ku) usually having a population of 30,000 or more, which may include some rural areas as well as the urban cluster are treated as urban place. In Ghana, all settlements having 5,000 and more inhabitants are considered as urban. In Greece, urban include municipalities and communes with 10,000 or more
inhabitants in the largest population center and 12 multi-communal urban agglomerations. Semi-urban: municipalities and communes with 2000 to 9999 inhabitants in largest population center, excluding urban agglomerations. In Israel, all those settlements, which have the population of 2,000 having more than two-thirds of the workers in non-agricultural sector, are considered as urban settlements. In the United Kingdom, a settlement is designated as urban on the basis of local government such as boroughs, municipal boroughs and urban districts. In United States, places having 2,500 and more inhabitants including the urbanized zones around cities of 50,000 and above inhabitants the densely settled urban fringe of urbanized areas whether incorporated or unincorporated; places of 2,500 inhabitants or more are classified as urban places. In Australia, urban: cities and towns of 1,000 or more inhabitants and contiguous urban developments. In south Africa, all areas of 500 or more inhabitants, and adjoining suburban areas, but excluding predominantly rural agricultural settlements, temporary settlements, temporary villages diggings; well established towns of fewer than 500 inhabitants but at least approximately 100 white inhabitants and with specified urban characteristics; and rural of certain districts in which large metropolitan areas fall and here the percentage of rural population is small compared with the urban and a considerable proportion of the workers follow urban type occupations.

In Pakistan, all areas having town committees are treated as urban. In additions, following characteristics are treated as urban, those where the
community sense is well developed and the community maintains public utilities such as roads, street lighting, water supply, sanitary arrangements etc; Centres of trade and commerce with a population substantially engaged in non-agricultural activities, those possessing a markedly high literacy rates or which are civil stations. In Srilanka, areas statutorily declared as coming within the preview of municipal, urban or town council, three types of local administration are considered as urban. In all these definitions the criterion size of population either alone or in combination of with the criteria of administrative status and/or functions forms the basis of definition of an urban settlement.

SOURCE:


WHAT IS URBANIZATION:

According to Griffith Taylor\textsuperscript{17}(1945) "Urbanization is a shift of people from village to city. "Kingsley Davis\textsuperscript{18}(1955) Says, urbanization as a revolutionary change in the whole pattern of social life. The Indian urban system consists of a large number of urban centers, accounting for about one-fifth of the urban population. Their geographic spread, their tradition close relationship with the need, their intermediary social, economic, cultural and political role and their newly assigned role as vehicle of change has caught the imagination and abiding interest is urban geography.

The Study of urbanization is of great significance not only from urban-geographic point of view but also as it reflects the present structures not only through their physical attributes and role of various factors and processes that played their role in their population growth to designate them as static, active and dynamic or explosive.

Several studies have focused on urbanization at the national level with a particular emphasis on population distribution, distribution of urban centres rates of urban growth, relationship between urban population growth and employment opportunities and need for controlling the over-grown cities and balancing the geographic distribution of urban places, stages of

\textsuperscript{17} Taylor, G (1945) The Seven Ages of Towns, Economic Geography, Vol-21.
urbanization in the region, spatial analysis of urban growth, degree of urbanization, trends of ranking of urban centres, fluctuation of urban centres and growth characteristics of towns.

Hauser\textsuperscript{19} (1965) in the UNESCO Handbook states: “Urbanization is a process of population concentration which occurs by increase in the number of points of concentration or agglomeration and by increase in the size of individual population concentration or agglomerations. Assessment of the extent of urbanization implies the study of the number of urban places and their respective sizes, the absolute number of persons living in urban places and the proportion of the total population in urban places. Lampard\textsuperscript{20} (1955) says that “there are three concepts of urbanization which have currency in social science: the behavioral, the structural and the demographic”.

Gibbs\textsuperscript{21}(1961) states that “Urbanization as a process involves the multiplication of points of population concentration as well as increase in size of individual urban concentration.” Stamp\textsuperscript{22}(1961) defines the term “Urbanization as characterized by movement of people from small communities concerned chiefly or solely with agriculture to other communities, generally large, where activities are primarily centered in

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\textsuperscript{22} Stamp, L. D. (1961) “Urbanization in Developing Countries, (Ed Alam and others).
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management, manufacturing, trade and allied interest." According to social
scientist like J. P. Gibbs (1961)\textsuperscript{23}, Vidal De La. Blache (1956)\textsuperscript{24} and N.
Anderson\textsuperscript{25} (1964) "Urbanization is a new phenomenon which is started after
the industrial Revolution."

Lynch (1963)\textsuperscript{26} while commenting on some aspect of rural-urban
continuum in India has defined 'Urban', 'Urbanism' and 'Urbanization' in the
following words: 'Urban' is defined as "that complex which makes up the
characteristic mode of life in cities", and 'Urbanism' is "the process of
urbanism or the adoption of man to urban or city setting itself ",
'Urbanization' on the other hand, is "the development and extension of these
(urban) factors". Urbanization and urban centres are the process and fact
respectively. They are not confined to the city alone, though they tend to find
their origin in the city.

According to Kiuchi and Ishimizu\textsuperscript{27}(1963) "a big concentration in a
specific place brings about an accelerated urbanization and
metropolitanization." As R. B. Mandal \textsuperscript{28}(1982) defines "Urbanization deals
with the land as well as the machine production and is closely linked with
concentration of people at one place through migration from the fringe and

\textsuperscript{25} Anderson N. (1964) Our industrial Urban Civilaztion (Ed. Ishwaran, K), Asia Publishing House, New Delhi.
\textsuperscript{26} Lynch, O.M. (1936); “Some Aspects of Rural Urban Continuum in India”, Cited from Anthropology on
the march ed: by Balaratnarn, Madras, Vide An Approach to Urban Studies in India”, pp. 239.
\textsuperscript{27} Kiuchi, S. and Ishimizu, T., (1963), “Some Aspects of Urbanization and Metropoliticization in Japan”
\textsuperscript{28} Mandal,R. B. and Peters, G. L.(Ed) (1982), Urbanization and Regional Development, Concept
surrounding areas with an ambitious hope for future materialistic self development". According to N.B.K, Reddy\textsuperscript{29}(1970) \textit{"Often the term 'Urbanization' itself is used to describe the urban phenomenon as well as the urban processes and changes. The dynamics of urbanism is reflected in its various facets which show spatial and temporal variations"}. Alam and Pokshishevsky\textsuperscript{30}(1974) have considered 'Urbanization as a changes in the nature of people's activities in the ratio between the population engaged in agricultural activities and rest of the population. Urbanization can be represented as a process leading to a spatial connection of activities in a relatively few areas where urban efficiency is the highest.'

Ramegowda\textsuperscript{31} (1972) points out that "Urbanization has become a universal phenomenon as a consequence of rapid industrialization. The scholars like K. V. Sundaram\textsuperscript{32} (1977) have clearly pointed out that the "Urbanization has been treated as a passive factor in economic development". Curie\textsuperscript{33} (1966) support the thesis that "urbanization is crucial for accelerating the nation's economic development".

The urbanization in the country is getting large urban population with rapidly increasing in number of urban centres but the quality of urban life is observed to be adversely affected. Major urban centres are still in a


\textsuperscript{30} Alam, S.M. and Pokhishersky, V.V(Ed) (1976) Urbanization in Developing Countries, Osmania University, Hyderabad.

\textsuperscript{31} Ramegowda, K. S. (1972), Urban and Regional Planning, Prasaranga, University of Mysore, Mysore.


\textsuperscript{33} Curie, L. (1966) Accelerating Development, New Yor; Mcgraw Hill.
dominating position and they are not allowing small urban centres to grow and influence the regional development in a proper way. The problems are accelerating in major urban centres making the life miserable due to lack of adequate service facilities and lack of basic needs of the people living in most of the urban centres of the nation.

PROCESS OF URBANIZATION:

Urbanization is a change in the pattern of population distribution. It involves an increase in the relative size of the urban population, a growth in number and size of urban settlements or places and increasing concentration of the population in such places. Eldridge 34(1956) maintains that urbanization is a process of population concentration. It means, so long as urban places grow in size or multiply in number urbanization is taking place.

As soon as population concentration stops, urbanization stops. How far urbanization can go, we do not know what limits of concentration, a society may be able to tolerate. However, this definition does not take into account the economic aspects of the process. Urbanization involves more than increase in the number of people and growth in these concentrations. In fact, it means an increasing shift from agricultural to industrial to service and distributive occupations. In brief urbanization involves the following:

(i) Urbanization involves an increase in the number of centres of population concentrations
(ii) A growth in the size of these centres

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(iii) Transfer of people from agricultural to non-agricultural occupations.

Thus urbanization takes places mainly in three ways;

(a) Natural increase in population

(b) Reclassification of rural and urban places, so that some rural areas may be treated as urban

(c) When net rural-urban migration occurs.

Out of the above three net migration is, by far the major component of urbanization and is the chief mechanism by which all of the world's great urbanization trends have been accomplished and, therefore, a discussion on urbanization is on rural urban migration. In this context, it is worth while to quote here the statement of R.B. Mandal\textsuperscript{35}(1982) "The Process of urbanization includes the change of economy which may be from forest to agriculture, agriculture to manufacturing-oriented production centers and centers of exchange of goods." Process of urbanization is expressed by increase of the proportion of urban population to the total population for the specific period of time. Migration, rural to urban area as well as the fresh admission into the urban class of settlement because push and full factors are greatly affected by industrialization, good quality life of urban area and, it fulfills the human needs.

The process of urbanization takes places when the proportion of urban population is increasing. When the rate of growth of urban population increases, it brings the reproductive change in urban population.

Urbanization also increase due to reclassification of rural settlements into urban settlements, but the real change in urban growth character is due to the net in-migration of rural population. The rural to urban migration is the chief component of the urbanization and the essential mechanism by which the urbanization trends are accomplished.

According to Trewartha,36(1972) There is a direct positive correlation between the degree of industrialization and urbanization. Urbanization is a cyclical process. The process of urbanization, for example, a planning for beautifying a town and making all the necessary provisions for urban infrastructure for a target group of urban population is eventually negated by the larger than estimated influx of rural people. It is therefore highly plausible to see urban centre as well crafted embroidery on a rural fabric. Meanwhile (demographic point of view) city growth rates closely with national population growth rates implying that municipal authorities and planners are virtually powerless in controlling the future size of there cities.

BENEFITIES AND EVILS OF URBANIZATION:

Industrial activity orderly heralded major challenges in Karnataka. Urban areas have set up a tremendous magnetic pull to the rural population, when the urban centers hold an eternal attraction. This has resulted in continuous migration of rural population into cities in search employment

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opportunities and better living conditions. Urbanization is a significant facet of economic development. Urbanization brings in its wake perennial exodus of village into towns. People generally face issues such as safe drinking water, solid waste disposal, drainage sanitation, problem arising out of road and railways. The simple cause of rural-urban migrations is the disparity in the economic growth in the regional space. The higher the disparity the higher is the migration from rural to urban.

A predominantly forest land converted into agricultural land, agricultural land converted into settlements, as result settlements converted into towns and urban centres, this process causes environmental degradation. The process of rapid urbanization is a result of visions of developmental activities that take up under the programmes of industrial. This had created multiple problems especially in relation to shelter and environment in the towns and cities. The slums have started to grow at a rapid pace and they have become one of the toughest and most important problems faced by administrators and planners in urban areas. This phenomenal increase in the population both in terms of size and extent resulted in the series of problems like shortage of housing, traffic and transportation, health, sanitation, medical and other social facilities required for optimum standard of living. This housing shortage coupled with high rate of land and building material is a major factor for the growth of slums in urban areas.

India has, no doubt, considerably increased during the last hundred years. But there has been sharp deterioration in the quality of life. Emergence
of slums has been a bad characteristic of city structure. Urban centers have been experiencing a number of socio-economic problems like crime, social tension, crowding, traffic system, burning unemployment, in sanitary conditions, poor conditions of road, lanes and bye-lanes, lack of hospital beds, lack of better educational institutions etc. As such there is an emergent need for proper and scientific urban planning and urban renewal in order to make a city life peaceful and worth living. Effort should be made to prevent excessive rural-urban migration by creating employment opportunities and other civic amenities in villages.

STATEMENT OF THE PROBLEM:

Despite a long history of urbanization going back to nearly five million ea, India entered the twentieth century with a low degree of urbanization. Its 25.8 million urban populations in 1901 made only 10.8 per cent of the total population. By comparison, more than two thirds of the population of the United Kingdom, nearly one-half of that of Germany and more than one-third of that of the United States were urban at that time.37

India, like other developing countries, went through a process of rapid urbanization during the present century.38 Its urban population grew to 159.7 million in 1981. This number was double the total population of the United Kingdom, equal to that of Japan and about a half of that of country in the

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world. Still India occupied a low position in terms of degree of urbanization; the 159.7 million constituted only 23.3 per cent of the country's total population. The corresponding figures for the United Kingdom, Japan and the United States were 78.9, 68.1 and 68.9 per cent respectively.

The process of urbanization in India, as in many other developing countries was strongly stamped by its colonial history for the last about two centuries.\textsuperscript{39} A polarized urban system, in which a few primate cities took away a large proportion of urban population, evolved. In 1981, more than a half of India's urban population was living in its 216 cities\textsuperscript{40} and nearly one-fourth in the twelve 'million' cities. The apex of India's urbanization remained dominated by the port cities of Calcutta and Bombay, both of which were the product of colonial era. On the other hand, hardly one-seventh of India's urban population in 1981 lived in small towns.\textsuperscript{41} These towns, numerically two-thirds of the total, were little more than large market villages, with some very local administrative functions added.\textsuperscript{42} The contrast between explosion of cities and stagnation of small towns was sharp, and India presented a peculiar situation of over urbanization at low level of economic development.\textsuperscript{43}

\textsuperscript{40} Urban places with a population of at least one hundred thousand each.
\textsuperscript{41} Urban places with a population of less than twenty thousand each.
Urbanization and Industrial development, so stably married in the western world, were often divorced in India.\textsuperscript{44} The former moved at a faster pace than the latter resulting in a direct shift from agriculture to service, as in other developing countries too.\textsuperscript{45} Tertiary sector expanded more than the secondary, a factor contributing to the prevailing unemployment in urban India. As per 1971 census, 54.9 per cent of urban workers in the country were in the tertiary, 31.3 per cent in the secondary, and 13.8 per cent in the primary activities.

Another salient feature of the recent urbanization in India was the enhanced role of the accelerating natural increase rate in growth of urban population. The 1971 census data revealed that 60.8 per cent of the urban population was born at the place of enumeration as compared with 55.2 per cent in 1961. Among migration, 32.8 per cent in urban-urban migration and most of the remaining had migrated from the erstwhile Pakistan at the time of Independence.\textsuperscript{46}

The above statements present only a bird's eye view of Indian urbanization. The picture through time and space is much more varied. A detailed spatial analysis of Karnataka urbanization in temporal dimension


\textsuperscript{45} McGee T.G., (1971) : \textit{Urbanisation Process in the Third World}. 0. Bell and Sons Ltd., London., p. 16.

\textsuperscript{46} Calculated from Census of India, 1971, \textit{Birth Place Migration in India}. Special Monograph No. 1, Section III, Appendix B, pp. 5-9.
is called for. The present work purports to do that. Its main objectives are to:

(i) Describe and interpret the regional variations in urbanization process during the various decades spanning over the 1901-2001 period;

(ii) Examine in a spatial and temporal perspective the relationship between the size and growth rate of towns;

(iii) Regionalize Karnataka on the basis of the levels of urbanization as per 2001 data and trends in urbanization during 1901-2001;

(iv) To analyze the spatial pattern of distribution of urban centres with help of nearest neighbour method.

(v) To find out the correlationship between the levels of urbanization — visa-via-six indicators of levels of urbanization.

PREVIOUS INVESTIGATION:

Urbanization has been a popular field of research among Indian scholars. According to Bose47 Economists' interest in urban studies was a post-war development. The Gokhale Institute at Poona was the pioneer. Its scholars conducted exhaustive surveys of towns and cities, such as Poona, Sholapur and Kolhapur. According to Gadgil48 the Indian Economic Association adopted urbanization as a special theme of its discussion in 1956 and later published a number of papers dealing with the patterns and process of urbanization.

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Urban sociologists and demographers also made a notable contribution to the study of Indian urbanization where contributions to urban studies were rich in both theory and practice. Doctoral dissertation and other publications were also outstanding and which presented a sociological analysis of Indian cities. Such studies of rural-urban migration were as a special aspect of internal migration in India. Most of these studies made liberal use of census data. Research works based on primary data were in a small number.

The few studies from the pen of historians may also be noted. Piggot gave a detailed description of cities in ancient India. A similar contribution was made by Puri and Naqvi conducted an inquiry into urban centres and industries in Upper India during the Mughal period of Indian history.

Diagnosis of urban problems was basic to any town planning. Town planners rightly made their attention to an understanding of the problems

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population potential of cities, and Datta65 determined the urban zones of India by taking the criteria of density of urban population and accessibility to urban places with population of at least 50,000.

In addition to the above mentioned studies at national level, some attempts were made at meso and micro levels. Study of urbanization by individual states was quite popular.66 Gosal67 discussed the process of urbanization in Punjab during 1881-1961. In a series of three articles Jauhari68 traced the trends in urbanization in the Ganga-Yamuna divide from the earliest times to the post-partition period. Dikshit69 presented a detailed account of urbanization in Maharashtra through history. A comprehensive study of towns in Mysore state came from pen of Rao.70

Among the studies at micro-level, the one by Alam71 on Hyderabad metropolitan region deserves the first mention. He established the relevance

of such studies of planning. Mukerji and others\textsuperscript{72} highlighted the positive impact of Delhi on urbanization in its peripheral region. Reddy\textsuperscript{73} made a study of urbanization trends in the Godavari-Krishna delta.

The above review was a testimony to inadequacy of geographic research on urbanization in India as a whole. The works accomplished so far confined their scope either to urbanization for a given period in an individual state or to a select aspect of urbanization. Seldom were an effort made to study temporal-spatial trends in urbanization and to regionalize India on the basis of levels of and trends in urbanization. There was hardly any attempt to test statistically the various hypothesis stated in the context of Indian urbanization. Therefore Raj Bala\textsuperscript{74} in her book "Trends in urbanization in India" has made a very systematic study of Spatio-temporal analysis of urbanization in India.

Cities in Karnataka are heading towards a high level of urbanization. The amount and variety of central services is increasing in them and becoming more complex. The processing and manufacturing activities are being added where they did not exist before and are expanding where they already existed. Urban forms of government and administration are appearing. In the social and cultural fields also noticeable changes are taking place. The process of urbanization was largely due to rural to urban

\textsuperscript{74} Raj Bala (1986) "Trends in Urbanization on in India" Rawat Publication, Jaipur.
migration and lower class urban centres to higher class urban centres. Broadly speaking bigger urban centres accounted for large population of the urban population of the region. The higher degree of urbanization and time to time the faster rate of process of urbanization in bigger urban centres may be attributed to their relatively superior location and better developed transport and communication system than those in smaller urban centres. Consequently severe over crowding, air, noise and water pollution deteriorating human health and disease proneness, exposure of hazardous chemicals, traffic congestion, automobile exhausts, dearth of civic amenities like water supply, sewage and sanitation etc, have become prevalent in the urban centres of India and Karnataka.

Tripathi, R.S.75 (1987), in his paper entitled “Trends of Urbanization in Bundelkhand, Uttar Pradesh”, states that the region started quite late to experience modern urban growth. Although the numbers of towns do not vary significantly during 1901-71, the number increased enormously in 1981 due to socio-economic development started recently. Nevertheless, the proportion of urban population to the total population is extremely low in Bundelkhand. The distribution of urban population in size classes of town reveals that the rate of population concentration has been greater in the towns of higher categories.

M. Vijayalakshmi (1989), analysed the "Urbanization and Developmental Processes in North Arcot District (Tamil Nadu)" where urban growth and the economic base are identified by using index of economic base technique. The hierarchies of settlements for these towns are identified by using several indicators such as economic and social factors.

Sinha, R.D. (1988), in his paper entitled "Urban Growth and Urbanization: A Study with Special Reference to Uttar Pradesh", described the inter-district and inter-town analysis over 1971-81. He says that the pattern of urban population growth is re-distributive in character, making the distribution of urban population less skewed. Secondly while studying the phenomenon of urban growth he points out the relative strength of the forces 'internal' as well as 'external' to urban territories. It would appear that urbanization proceeds on the basis of both internal and external factors, while overstocking of labour in backward urban economies occurs due to external factors at the cost of productivity and economic development.

Ashis Sarkar (1988), in his paper entitled "Growth of Size-class Distribution of urban settlement in West Bengal", analysed that since the beginning of this century the urban domin of West Bengal was rapidly expanding. A major fact of its urban growth is often attributed to the

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'selective' migration to the larger towns, mainly the capital city, having the greatest attractive force. This really brings in inequalities and structural imbalances within different classes of urban settlements. Obviously, the pattern of decadal variation of the size class distribution reflects not only the direction of urban growth, but also a kind of qualitative functions and hierarchical adjustment within the evolving system of urban settlements.

H.D. Singh79 (1974), in his paper entitled "Growth and Distribution of Towns in Eastern Uttar Pradesh", analysed that the region under study is relatively less urbanized pact of Uttar Pradesh. The process of urbanization has already set in and the development of urban centres is taking place in a hotch-patch manner, so that no district pattern has emerged. The hopes that in due course of time, urbanization will reach to some standard pattern.

An empirical Study by V.L.S. Prakasa Rao80 (1975) also reveals that the Indian city structure is changing today under the impact of city development plans like master plans, Housing Boards, layouts, slum clearances etc. A number of city studies undertaken the by author revealed that the evolving Indian city structure is "pluralistic" where that acceptance of the western models is justified.

According to A. E. Smailes81 (1971) "Indian cities are like irregular and amorphous, royal place or holy place or have emerged from a village. F.

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Brien Mcloughlin\textsuperscript{82} (1969) attempts to provide framework to application of general principle of systems analysis and control to the planning task, showing by example how ‘traditional’ and new methods may be used within a system framework. Kulkarni K. M.\textsuperscript{83} (1984) in his study highlights the process of agglomeration of people and their activities under the impact of the technological revolution which has greatly changed the urban size of major Indian cities. This has resulted in intra-city differences in the levels of well-being in terms of social amenities, social security and social health conditions. There is a striking contrast between the walled city and the outer areas in terms of urban aspects. The study emphasis on keeping the city size small compact and core oriented as it promotes social harmony conservation of energy and economy in municipal expenditures.

Mulik, D. A.\textsuperscript{84} (1989) focused on Urbanization trends in south Maharastra Plateau. He reveals Urbanization process as clearly reflecting the development stage of any region. The urban growth measured through the time series analysis is an important indicator for development planning. The study incorporates the evolution and growth of urban centres, their spatial distribution, changes in functional characteristics, functional association the hierarchical structure of urban centres and their sphere of influence. Catanese\textsuperscript{85} (1972) in his study covers scientific methods of urban analysis techniques from mathematics, operations research, systems analysis,

\begin{itemize}
\item\textsuperscript{82} Brian M. J (1969) Urban and Regional Planning a Systems Approach, Faber and Faber London..
\item\textsuperscript{83} Kulkarni K. M. (1984) Geography of Crowding and Human Response, Concept Publishing Co. New Delhi..
\end{itemize}
information science and planning and develops a framework for their application to urban problems.

**STUDIES RELATED TO LEVELS OF URBANIZATION AND REGIONAL DISPARITIES IN KARNATAKA:**


Hanumappa, H.G.86(1982) undertook the study of the social and economic structure of Hospet town. The study contains some tentative suggestion for the better development of Hospet town in future. Hemlata Rao87(1984) in her study on “regional disparities and development in India” explain through process of multi-level planning that is identification of regions according to their differential levels of development and backwardness. Her study examines the regional disparities in Karnataka and identifies differences in region and delineates homogenous regions in terms of both levels of development and typology of development and suggested that different groups of regions require different plan strategies at the micro level.”

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Rao, V. D\textsuperscript{88} (1986) in his article on “Issues and problems of urban Growth: A case study of Karnataka State”, points out that Cities of Karnataka have problems related to housing, drinking water, employment and education. Further he has made an attempt to explain the problems of urban growth in Karnataka. He finds that an increasing in the percentage of workers to total population in cities of Karnataka and further he observes an increase of number of towns in all the classes.

Rame Gowda\textsuperscript{89}(1972) in his book ‘Urban and Regional Planning’ reviews the problem and prospects of urbanization, public participation in the urban planning and city building activities, and discusses the general concepts of urban and regional planning legislation and administration and suggested that master plan for case studies pertaining to the metropolitan city of Bangalore and other medium towns of Mysore state (present Karnataka State)

Learmonth et al (1961) in cooperation with the Indian statistical Institute\textsuperscript{90} (1961) provide a basis for preparing development plans appropriate to different regions of Karnataka. This survey was largely an exploratory effort in regional analysis and dealt with cartographical techniques for analyzing distributional aspects / data.

\textsuperscript{89} Rame Gowda, K. S. (1972) Urban and Regional Planning, Prasaranga, University of Mysore, Mysore.
\textsuperscript{90} Learmonth et al, (1961), Mysore State, Vols I and II, Indian Statistical Institute.
Achut Rao T.N. (1984) in his book "Balanced Regional Development of Karnataka" has studied on evaluation of the progress in regional planning. He has applied a factorial analysis to identify the lagging regions and the lagging sectors in regional development of Karnataka. He has suggested for a more balanced regional development of Karnataka.

**REGIONAL DEVELOPMENTAL PLANNING IN INDIA:**

Under the first two five years plans (first: 1951-56, second: 1956-61) the main thrust of the India planning was on increasing the rate of economic growth and was restricted to the national level. Plans were formulated in terms of a set of directives and goals for the orientation of the economy as a whole. The planning process has been predominantly sectoral and spatial. The third (1961-66) five years plan stressed upon the balanced regional development. During this period, the 'Federal Fiscal Transfer Scheme' of finance commission and the planning commission repeatedly proclaimed the objective of balanced regional development, but the strategy of regional planning, however, was in its infancy. A concrete full fledged regional planning is still a far cry. The community development efforts whose focal point was the 'Development Blocks'. Similarly, N. E. S. programme and panchayat Raj were exercised. After these programmes, there came the programme of intensive agriculture programme were supposed to be area specific. But, all these steps were haphazard and urorganised.

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91 Achuta Rao, T. N. (1984) "Balanced Regional Development the Levels of Development of Karnataka"
However, the growing regional inequalities forced the planners, economists and politicians for paradigm shift under the fourth and fifth Five-year plans and some steps were taken in the direction of regional development. During Fourth-Five year plan (1969-74) problem of regional disparity was attempted to eradicate at three angles. (i) reduction of inter-regional difference through fiscal policies, (ii) development of resource frontier region, and (iii) local planning, performance of these policies as not every encouraging. In pursuance of the decision of the National Development Council two working group viz., Pandey Committee and Wanchoo Committee were set up. The first recommended the criteria for identification of back-ward areas and the second recommend the fiscal and financial incentive for starting industries in backward region.

Fifth five year plan (1974-79) attempted different approaches to area development, viz.,

(1) The resource based or problem based approach which includes Drought Prone Area Programme (D.P.A.P.), command Area Development Programme (C.A.D.P.), Hill Area Development Programme (H.A.D.P.)

(2) Target Group Approach which includes Small Former and Development Agency (S.F.D.A.), Marginal Farmers and Agricultural Labour Programme (M.F.A.L.P.) and Tribal Development Agency (T.D.A.).

(3) Incentive Approach which includes Concession Finance Programme (C.F.P.), Investment Subsidy and Transport Subsidy Scheme (I.S.T.S.S.), and Rural Industrial Development Scheme (R.I.D.S.).

(4) Comprehensive Area Development Approach in which sub plans for the Hill and Tribal Areas were taken up.
During sixth Five year plant (1980-85) some concrete steps were taken. The principle objectives of this plan have been defined in this draft which are as follows;

1. The removal of unemployment and under employment.

2. An Appreciable rise in the standard of living of poorest sections of the society.

3. Provision by the state for some of the basic needs of people of poor income groups, like clean drinking water, adults literacy, elementary education, health care, rural road, rural housing for the landless and minimum services for the urban slums.

In Seventh Five Year Plan (1985-90) attempts for area development were;

1. Action to sustain and enhance the momentum of economic expansion and technological development.

2. Adoption of effective promotional measures to raise the productivity and income of the poorer sections of the populations, poorer regions and poorer states.

3. Expansion and qualitative improvement in facilities for health, education and other basis civic amenities.

4. Measures for bringing about a sharp reduction in the rate of population growth.
During the Eighth Five Year Plan (1992-97) period attempts are being made for:

1. Generating adequate employment to achieve near full employment level by the turn of the century.

2. Containing population growth through active people co-operation and an effective scheme of incentives and disincentives.

3. Universalisation of elementary education and complete eradication of illiteracy among the people in the age group of 15 to 35 years.

4. Provision of safe drinking water and primary health facilities including immunization so as to be accessible to all villages and entire population, and complete elimination of scavenging.

5. Growth and diversification of agriculture to achieve self sufficiency in food and generate surpluses for exports.

6. Strengthening the infrastructure (energy, transport, communication, irrigation) in order to support the growth process on a sustainable basis.

It has laid stress on area planning for Drought prone Area Programme. The main objective is to promote the dryland agriculture by better soil and moisture conservation, more scientific use of water resources, afforestation and live-stock development through development of fodder and pasture resources, and in the long run resort the ecological balance. The Drought Prone Areas Programme (D.P.A.P.) covers 615 blocks of 91 district in 13 states. And it has also laid stress on area planning for integrated rural development. Out of 5,004 blocks in the country 2,000 were selected for
Integrated Rural Development (I.R.D.) and it is proposed to cover 300 blocks every year as to introduce the plan in all blocks to be covered up within a period of 10 years.


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Such studies reveal that the regional imbalance and regional disparities in economic and social development of the country call for the reduction and removal of the spatio-functional gaps in inter-regional or inter-regional perspective. Thus, regional development at achieving most rational and optimum utilization and development at achieving most rational and optimum utilization and development of natural and human resources. Its stresses upon the economic equality and social justice in resource allocations.
so that the under developed and backward regions are given a chance to move forward and line-up with the developed regions.\textsuperscript{112} To achieve the objective of balanced regional development, the region needs to be studied in both extensively and intensively. The geo-economic conditions and structure and existing level of development are need to be studied in absolute and relative terms. It would be appropriate to apply the scientific techniques of regional planning which is essentially an exercise in co-ordination aimed at improving the economic foundations of region and at meeting its physical and social needs within the frame work of national needs, priorities and resources potentials.\textsuperscript{113}

**URBANISATION AND REGIONAL DEVELOPMENT:**

The debate on whether urbanization is a positive or negative factor in national development or whether there exists a relationship at all, has its modern origin in the social reform movements of the 1950's and their nationalistic counter movement\textsuperscript{114} Divergence of opinion, as to the effectiveness of the urbanization process in the over all development is mounting and has swelled the literatures with debates in for the against of the urbanization for regional development.

The level of urbanization in a region is classically regarded as a meaningful indicator of economic development. Urban way of life is assumed to be synonyms of the desired quality of life as it enhances the per capita

\textsuperscript{112} Ibid.


productivity and employment opportunity as well as ensures the basic amenities of life. Curie supports the thesis that urbanization is crucial for accelerating the nation's economic development. Doston and Teune (1974), have suggested that urbanization yields administrative capacity which in turn facilitating national development. This reiterated by others who regard the thesis that urbanisation tends to be highly correlated with overall economic growth as axiomatic.

On the other hand, many scholars and statesman express grave concern over the fast and accelerating pace of urbanization in the developing countries. Currently many literatures swelled over with full alarm over the consequences of continuous and high pace of urbanization. There is growing support for the argument that high urbanization rates will retard national development or even plunge certain nation into chaos, at social costs, directly attributes to urbanization claiming a major part of the score investment of the funds of many countries. Instead of stand in as symptom of development growth as it was in the west, “urbanization in the third world tended to both cause and effect of continued under development and increasing poverty.”

McGee (1968) holds the urbanization in the developing countries as "Pseudo" because "the process has not been similar to the one that occurred in

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the advanced countries at comparable stage of industrialization and economic growth. Western growing cities are able to absorb the increasing population because the industrial revolution introduced technical improvements which made possible to increase agricultural productivity and to allow a segment of rural population to shift to cities. But, the cities of developing countries grew despite adequate industrialization which tended them not to play an important role in development process. According to Dwyer,\textsuperscript{120} (1975) "the urbanization process in the third world has neither the economic strength of the advanced capitalist nations nor the systematic playing of socialism. It has the worst of the other two worlds atleast with respect to urban development". He further adds that the cities of developing countries are unable to offer either jobs of shelter. The rapid expansion of these cities put enormous strains on urban services such as housing, transportation, water supply, drainage, sanitation, public and personal health and educational services which ultimately caused the ever growing pressure on land resources and situation is so alarming that it is taxing best brains of politicians, decision makers, environmentalists, ecologists, social-scientists, town planners and administrators to provide decent, healthy and enthusiastic environment with proper employment opportunity for urban dwellers.

But, at present, a number of scholars of this school, who have an opinion as to effectiveness of urbanization in over all development, is in

\textsuperscript{120} Dwyer, D. J. (1975): "People and Housing in the third World Cities", Longman, London.
minority. Some of them have view, as Laqian often points out, that slum dwellers and squatters in large Asian cities make a positive net contribution to development instead of burdening the urban economy and threatening the existing urban order. With regard to the role of urbanization in regional development, we would like to make it clear that the process of urbanization is not only desirable, but essential for generating economic growth and social change in developing countries like India. The growth of urban centres has a generating impact on nation and, by extension, on regional development. The reason for this inter-relationship are quite obvious.

Urban centres imply scale and scale is the key to specialization in production, efficiency and industrial growth. Urbanization also creates external economies, both spatial and non-spatial, which have cumulative and reinforcing effect on subsequent growth. The impact of urbanization on regional development can be more obviously seen due to fact that urbanization process is closely associated with socio-economic and cultural change the transform attitudes to economic process, capital accumulation and technical process.

The impact of urbanization is being felt frequently even a great distance from the cities. V.L.S. Prakash Rao\(^\text{122}\) (1983) has identified four different situations in which urbanization exerts an influence upon rural


society. The most obvious instance of urban impact occurs in the case of rural areas in the path of an expanding city. As the city grows, the villages often absorbed and villagers turn their occupation from cultivation to urban employment. The continuous surrounded rural area where urban encroachment is not so rapid, land may be utilized for market, gardening, poultry and dairy forming. The town creates an extensive market for rural products. Thus, the traditional self-sufficiency basis of the village can be changed by the market oriented economy and a larger number of people can get employment in the cities in secondary and tertiary sectors which ultimately raise the income level and living conditions. On the other hand, a specialized urban impact can be experienced.

So far the study of the impact of urbanization on the regional development in our country is concerned, several studies have been conducted, correlating the urbanization and economic development. In this regard, T. N. Dutta and R. N. Chattopadhyaya\textsuperscript{123}(1983) computed the levels of urbanization taking percentage of urban population to total population and urban density as the indicators and a vector of five indicators of socio-economic development have adopted to measure the level of development of Indian states. They concluded that the states, which have metropolitan cities like West Bengal, Gujarat, Tamil Nadu, Kerala, Maharashtra and Punjab have the higher degree of urbanization as compared to others. These states have

exhibited higher composite value in terms of development. Thus, we defined a direct correlation between urbanization and regional development in India. The same hypothesis is established in a study of degree of urbanization and level of economic development in Chota Nagpur region by Sharma.\textsuperscript{124} (1972)

Though, the urbanization and regional development are concomitant, yet it is difficult to understand the inter-relationship between the size and spatial structure of region, urban hierarchy and regional development because the city of higher order rank in a region tends to be more outward looking than its region. Urban hierarchy have more effect on regional development and the distribution of the industries among the centres of different size according to their relative economies of scale may cause the strategic significance for regional development. It is true that the size and efficiency of regions leading to metropolis is probably, the major line in between urban structure and the rate of regional growth. There is a consensus that a city having a minimum critical size of two and half a lakh population may be necessary to exercise a generative function on regional growth performances.

According to the policy of the government in the coming years, the major thrust is to slow down the growth of big urban centres in order to increase the growth rate of the small and medium sized towns. It is possible with the provision of infrastructure facilities to small towns in

order to equip them to act as growth centres for the hinterland around each and every town. For this purpose increased investment is proposed for housing, water supply transportation and communication facilities besides education, medical care and recreation. In larger urban centres emphasis will also have to be given in improving the conditions of urban poor, slum dwellers and raising the civic services up to acceptable level. In large urban centres the highest priority will be given to restrict the growth of population through the variety of measures, e.g., granting of incentives to start industries in new urban centres and a ban on the setting up of new industries within certain limits of large cities is already allowed in the industrial policy statement. The villages and towns up to a population at 25 thousands will be chosen for increasing a household and cottage industries, through rural industrialization programme. The same facility is given in terms of opening banks, etc. In the past, the policy was to help in improving the condition of congested metropolitan centres so that they would continue to grow at their current pace indefinitely. Based on this policy, support was given to the development of cities like, Calcutta, Bombay, New Delhi, Madras, Hyderabad, Kanpur, Ahmedabad and Bangalore. This policy is meant for improving the transport needs of congested areas and the development of satellite towns including housing conditions, water supply, uncertainty in the disposal of surplus land and improving the conditions of slum dwellers.

Regional development, on the other hand, is also assumed as a new dimension in Indian Planning. Districts, towns, Blocks and villages are
conceived as spatial units for micro-level planning on various levels. The hierarchy of spatial units relates mainly to the development of rural and urban area. Recently, the Planning Commission has appointed a Committee on block level planning with a view to prepare guidelines for planning from below in conformity with national goals. The basic objectives are: (a) optimum utilization of potential resources to increase income and employment (b) ensuring the benefits accrued from the development programme to the weaker sections of populations in particular, (c) re-orientation of the institutional set up and building of appropriate organizational frame to protect the rights and privileges of the poor with progressive promotion of an egalitarian structure of ownership of national assets and utilization of the basic resources at area level.

Hence, planner’s task is to formulate production programme for the largest groups in an area in the light of the resource potential to develop local skill and entrepreneurship for managing the production programme and to design a programme for the provision of basic minimum needs and institutions support to such programme. Further, in order to achieve the above mentioned goals, it is required to start developmental work at lowest level everywhere simultaneously so that ultimately each area and community will be involved in the test of regional development and upliftment of the rural and urban economy.
PHILOSOPHY OF URBANIZATION:

It is also necessary to have a philosophy of Urbanization. It is high
time we realized that the (co-called)'Western path of industrialization,
urbanization, modernization is not the best path for us. At the same time we
must clearly recognize the essential role of urbanization in the process of
economic growth and social change in India. The United Nations Conference
on Human Settlement (Habitat) highlighted the need for human settlement
policies to consider the whole gamut of settlements from tiny hamlets to huge
urban complexes and regions, in an integrated manner. The issue is not rural
versus urban but what type of rural and what type of urban. It has become
fashion of every international conferences to emphasize the quest not for
higher and higher per capita income but improving the quality of life.

Quality of life issues are difficult to define and even mere difficult to
quantify but this does not mean that people have not perception of such
issues. Let us take an example from housing. Have our architects especially
the PWD and DDA architects paid enough attention to what the people want
and what their life-styles are? Is our urban architecture not heavily western-
oriented? The British when they built New Delhi, for example, were clear
about what they wanted- they wanted an imperial city. They were also clear
in their mind when they developed Calcutta, Bombay and Madras- they
wanted colonial cities. But what sort of cities do we want in free, democratic,
socialist, secular India? We want in free, democratic, socialist, secular India?
We want fully to erase the past settlement pattern but the hangover of colonial urban development cannot be lost for ever. The Government's housing policy continues to be colonial, the urban land policy continues to be capitalistic, the town planning and municipal rules and regulations continue to be based on absolute nineteenth-century and early twentieth-century British legislation and the system of city Government breeding efficiency, corruption and nepotism is certainly not geared to meet the challenges of urbanization in the closing decades of the twentieth century. In the absence of any structural change in the urban situation, the only futuristic projection one encounters were the doomsday projections of exploding population and worsening environment, rising unemployment, increasing housing, growing bankruptcy and collapse of urban infrastructure, in short increasing per capita misery.

To a considerable extent, these problems, are not unique to Indian cities. All over the world, the cities are in a deep crisis and at the root of the crisis is the utter inadequacy of any urban philosophy. More than 50 years ago Tagore and Gandhi had pleaded for abandoning the western path which put a higher value on machine than men, a philosophy which talked of conquering nature rather than living in harmony with nature. The United Nations habitat Conference of 1976 was in fact a vindication of the stand taken by Tagore and Gandhi.
In this chapter here in afterwards, an attempt is made to glance at various research papers and books relevant to urban studies, with a view to understand various dimensions of urbanization and to incorporate such ideas and methodologies that found suitable to the study.

Raj Bala\textsuperscript{125} (1980) in her paper entitled “Spatial Perspective on Urbanization in India from the Ancient to the Early Modern Period”, traces, spatial perspective, the process of urbanization in India from the ancient time to early modern period covering the entire span of the pre-census history of the country. Her description is based largely on mapping of information obtained from the biographies of hundreds of towns included in the twenty-six volumes of the Imperial Gazetteers of India. Regional histories of various parts of the country provided the basic material for interpretation. The urban evolution in the Indian sub-continent goes back to around 2500 B.C. when a number of urban communities were flourishing in the Indus Valley. Urbanization diffused eastward with the movement of the Aryans and other communities in the same direction. The deltaic tracts were the first to experience urbanization in south India but not earlier than 600 B.C. the rise of Buddhism had profound effect on urbanization: places associated with Buddha’s life grew into big religious centres and Buddhist monasteries formed the nucleus of several towns. The focus of urbanization shifted from

north to central India during Gupta period. Considerable urban development took place during the medieval period as both the Muslim and Mughal rulers had an urban bias. Towns appeared as administrative, defense and trade centres. North India was more urbanized than other parts of India, a pattern which underwent considerable change later on. The notable developments during the subsequent British period were the emergence of several hill towns, rapid growth of big administrative and post cities and expansion of many urban places along the newly built railway line. The coastal areas were the first to experience the colonial and modern urbanization which later diffused to the interior parts.

V. L.S. Prakasa Rao and V. K. Tiwari126 (1986) have analysed in their article “Urbanization in India: Spatial Dimension” the urbanization as a process is concentration of non agricultural occupations and landuses around a single nucleus or multiple nuclei. This primarily the result of rural to urban shift of population with urban centres growing either at the expense of the country side or serving the country side through modern transport and communication systems. The role of urbanization in the decade to came, is to lead to socio-economic development. It is the urban system framework which should provide the base for national and spatial development strategy within the resource development framework. Such a framework should be built up from the grass roots and not from the national and state capitals.

R. C. Chandna\textsuperscript{127} (1985) in his report entitled "Population Growth of Indian Cities: 1901-91" analyse at the dawn of the present century, there were only 26 cities in India. None of these had a population exceeding one million and most of them were smaller than a quarter million. Barring a few port industrial centres, all the cities were chiefly administrative headquarters of states or districts. An overwhelming majority of the cities was concentrated in the country's most densely populated belt of the Ganga Plain. The functions, size and number of Indian cities remained unaltered and hence their distributional pattern undisturbed until 1931. After that, the functions of Indian cities started diversifying with the progress of industry and commerce and expansion of means of transport and communication. Not only the old cities grew rapidly but also large number of new cities emerged. The areas surrounding the national capital of Delhi, those lying between the two industrial cities of Bambay and Ahmedabad, and the Malabar coast were the first to experience the emergence of new cities. In subsequent years, the Calcutta region, the states of Maharashtra and Karnataka and the coastal areas of Andhra Pradesh also followed the suit. The 1951-61 decade witnessed growth of cities in the proximity of all big cities implying that the primacy of a few cities which had persisted until 1951 started breaking. The last decade though saw the emergence of a very large number of cities in almost all the parts of the country yet the spread of cities was not typical of

areas of commercial agriculture and of urban-industrial development in Maharashtra, Karnataka and Tamil Nadu.

While the number of cities has multiplied six-fold the city population of India grew by not less than ten times during 1901-71. There were, in fact, three distinct phases in the history of growth of city population with breaks at 1931 and 1951. During the first phase the actual growth rate of cities was only slightly higher than the rate of natural increase implying that migration played a limited role in growth of cities. A few cities like Bombay, Ahmedabad, Delhi, Bangalore, Madras and Calcutta shared a large part of the growth of city population. With an acceleration of urban-industrial development, the next twenty years (1931-51) were characterised by high city growth due to sizeable rural-urban migration. Again the cities like Bombay, Delhi, Madras, Bangalore and Ahmedabad grew very fast. The stagnation of smaller cities was also broken. During the third phase (1951-71), the city growth rate, though much above the rate of natural increase, was not as explosive as is generally believed. This is explained partly by outward movement of population from big cities to nearby smaller urban places and partly by growing magnitude of commuting.

Spatially, the process of city growth has been faster in south than that in North India. The alluvium filled but mineral deficient northern plains constitute the country's predominantly agricultural and most populous belt which has only limited potential for heavy industrialization. No wonder
despite the development of railways for over a century the region has remained economically backward. On the contrary, mining and industrial activity in mineral-rich peninsular India has been stimulating urban development, particularly when agriculture in the south is handicapped due to the problem of developing irrigation.

It is noteworthy that small cities experienced faster rates of growth in comparison to the medium and big cities. Similarly, the rate of growth was higher in newly emerging industrial cities located in economically developing areas than in those located in predominantly agricultural and industrially stagnating areas.

K. M. Kulkarni (1981) in his paper “Patterns of Urban Growth in India: Some Crop Regional Profiles” analyses that India, with its history of land-centred economy developed its centres of commerce and trade into towns that commanded large agricultural hinterland. The growth centres and the emergence of new towns took place subsequently as a result of increasing activities in agricultural production processing, storage, trade and commerce. The yields from certain crops are just enough to support families (subsistence farming), certain others allow economic surplus, leading to increased investment in economic activities. Though his study does not consider income and investment patterns as such, it does take into account the major

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food crops, millets and cash crops which make broadly the said pattern. His study brings out the impact of size class, time factor and crop regions in the process of urbanization.

Udaya Bhaskar Reddy\(^{129}\) (1987) in his paper entitled “Implications of Urbanization on Physical Environment in India” describes that the tremendous influx of population into cities has created several implications such as housing shortages, the growth of slums, overcrowding and congestion a lowering of civic standards, crumbling down infra-structure etc. which had its greatest impact on physical environment of urban areas, especially in metropolitan cities. The provision of various facilities and amenities like water, sanitary measures, housing etc. could not keep pace with growth of urban population, as a result the quality of urban environment in not maintained. In addition, lack of proper development and growth of substandard housing and slums had brought deterioration in the quality of physical environment of urban areas”.

J. Singh\(^{130}\) (1987) in his paper entitled “The state of Urbanization in India and the Problems Thereof”, has analysed that “the lure of variety of avenues and facilities in the cities have attracted millions of people from the countryside into its fold each year which ultimately pave way to overcrowding and challenges. It is evinced from this very fact that the number of


persons living in urban areas had multiplied six-fold during the period 1901-81 from about 26 millions (10.84%) to 160 million (23.31%). During the decade 1971-81, totally 9.9 million persons have been added as migrants. The urban population is expected to grow around 3.6 per cent per annum and to reach 315.4 million by 2000 A.D. Urbanisation, therefore, requires constant monitoring in the years to come. Though urbanization is considered as an important aspect of economic and social development yet in spite of our best efforts still to-day poverty, unemployment, lack of housing sprawling slums with unsanitary conditions, drinking water, educational, medical and similar other problems are on increase with the growth and development of cities an towns. These pressing problems have posed a major challenge before the social policy makers."

Baleshwar Thakur131 (1981) in his paper entitled “Entropy ANlysis of Changing Urban Pattern in North-Eastern India: 1901-71”, made an effort to apply entropy method, developed from information theory and introduced by Medvedkov in settlement geography, to analyse the nature and spatial pattern of urban places in the eastern India. The greater is the entropy leading to greater disorder and a more dis-organised system. The hypothesis tested in this study is that uniformity of urban places tends to increase over time. The entropy parameters obtained for the eight points of time from 1901 to 1971. Thus, the component increase over time. The entropy parameters

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obtained for the eight points of time from 1901 to 1971 indicate a trend from randomness towards uniformity. The percentage of uniform component increase from 60 in 1901 to 84 in 1971. Thus, the distribution of urban places is tending toward a more uniform pattern over a period and the hypothesis is confirmed.

K. D. Sharma132 (1981) in his paper entitled “Endogenous and Exogenous Urbanization: A case study of Uttarkhand (U.P. Himalaya)” analysed that Uttarkhand, a chronically backward region, characterized by high mountain topography and an erstwhile feudal spatial organization but its unique urbanization reflects both endogenous and exogenous factors. The paper analyses the influence of physical constraints on the distribution of towns and the diffusion of urbanization originating in the North Indian Plains; and the comparative response of the colonial and indigenous town to the exogenous and endogenous forces. The transverse valleys, functioning as conveyers of impulses of urbanization, have developed a liner pattern of interlinked towns. The hill top and ridge crest towns and hill foot towns form different interacting pairs. The maximum concentration of towns occurs in the middle elevation zone where the ridge crest sites of the British towns have influenced by healthy climate. The indigenous towns, occurring in all the elevation zones, developed as religious and trade centres and halting places an ancient caravan routes, and capitals of native states, while the

British towns were mainly cantonments, health resorts and administrative centres. Physical constraints are reflected in the time lag in urbanization between the plains and the region. The exogenous factor has operated through British towns, effects of transport linkages, and the administrative functions of the existing towns. The towns which experienced the combined effect of indigenous and exogenous forces grew faster than those affected by one alone. The small towns of the region contributed substantially to its urbanization. The new towns have emerged in an inverted chronological sequence in which the hill foot towns are younger than those of the interior. Urbanization has been sustained by the administrative and not by industrialization.

Singh, H. H. and Mishra, A. K. (1988) in their paper entitled “spatial Characteristics and Typology of Towns in Dun Valley” have critically examined the spatial characteristics of urban centres based on four attributes: mean observed spacing, hypothetical spacing, nearest neighbour statistic and index of deviation. The analysis of urban centres reveals that the physical configuration affects the transportational pattern which plays an important role in the nodality of the urban centres. A close examination of the evolution of these urban centres clearly indicates that the physical, economic and cultural factors have played a definite role in stimulating and the spread of these urban centres.

Sinha, R. C.\textsuperscript{134} (1988) in his paper entitled “Urban Growth and Urbanization: A study with Special Reference to Uttar Pradesh” described the inter-district and inter-town analysis over 1971-81 the pattern of urban population growth is re-distributive in character making the distribution of urban population over regions and towns less skewed. Secondly while studying the phenomenon of urban growth he points out the relative strength of the forces ‘internal’ as well as ‘external’ to urban territories. It would appear that urbanization proceeds on the basis of both internal and external factors, while overstocking of labour in backward urban economies occurs due to external factors at the cost of productivity and economic development.

Ashis Sarkar\textsuperscript{135} (1988) in his paper entitled ‘Growth of size-class Distribution of Urban Settlements in West Bengal’ analysed that since the beginning of this century the urban domain of West Bengal was rapidly expanding. A major part of its urban growth is often attributed to the ‘selective’ migration to the larger towns, mainly the capital city, having the greatest attractive force. This really brings in consequence evergrowing inequalities and structural imbalances within different classes of urban settlements. Obviously, the pattern of decadal variation of the size-class distribution reflects not only the vector of urban growth, but also a kind of


qualitative functions and hierarchical adjustment within the evolving system of urban settlements.

Mohd Sultan Bhat\(^{136}\) (1994) in his paper "Levels of Urbanization in Jammu and Kashmir: A District Level Analysis" opines that "Urbanization does not constitute a cause of concern as it keeps pace with national standards, but it is the wider inter-regional disparity which not healthy sign for regional development. The excessive concentration of urban population which resulted in the urban primacy of Srinagar and Jammu, suggests that a process of concentration, polarization with its key attributes of manufacturing industry, tertiary activities, trade and commerce, transport and other services is in the offing, for a balanced regional urban growth and development. Medium and small towns are growingly in need for their effective planning with emphasis on the provision of urban services and encouraging their growth in all possible ways e.g., through fiscal incentive to industrial establishments, provision of infra-structure, establishment of industrial estate and indeed decentralization of some of the activities may also solve the same problem".

H. D. Singh\(^{137}\) (1974) in his paper entitled "Growth and distribution of Towns in Eastern Uttar Pradesh" analysed that the region under study is relatively less urbanized part of Uttar Pradesh. The process of urbanization


has already set in and the development of urban centres is taking place in a hotch-potch manner, so that no distinct pattern has emerged. The another hopes that in due course of time, urbanization will reach to some standard pattern.

Mulik, A.D\textsuperscript{138} (1978) attempts to explain the trends of urbanization in the state of Maharashtra, emphasizing the growth of urbanization of the decade 1971. Initially it may be stated that the percentage share to states urbanization has been used for determining the development of urbanization at district level. Tripathi, R. S.\textsuperscript{139} (1987) in his paper entitled "Trends of Urbanization in Bundelkhand, Uttar Pradesh", states that the region started quite late to experience modern urban growth. Although the number of towns does not vary significantly during 1901-71, the number increased enormously in 1981 due to socio-economic development started recently. Nevertheless, the proportion of urban population to the total population is extremely low in Bundelkhand. The distribution of urban population in size classes of town reveals that the rate of population concentration has greater in the towns of higher categories.

Sriparn Bose\textsuperscript{140} (1988) in his paper entitled "Growth of Urban Centres and Urban Population of West Bengal (1901-81)" explains the following: the

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urban growth occurs in terms of increase of urban population as well as increase in the number of urban centres. In his paper he has made an attempt to analyses these two components of urban growth in the different district of West Bengal during the present century on analysis, it becomes clear that there were remarkable variations in the pattern of growth of urban population as well as urban centres over the state with most marked growth occurring during the later part of 20th century and most of the growth being confined to certain zones of the state such as the banks of Rive Hugli and North western parts of Barddhaman district. On the basis of temporal as well as spatial variation certain general conclusion have also been drawn regarding the future pattern of urban growth in the state.

Onkar Singh\textsuperscript{141} (1967) in his paper "The Trend of Urbanization in Uttar Pradesh" explained the pressure o modern trends of Urbanization, in U.P. The degree of urbanization increases from east to west in general. The West Plain stands as the most urbanized region of the states whereas the East Plain is the least urbanized one. About two-thirds of the total urban population of the area is concentrated in towns of 50,000 populations and more. M.M.Jana\textsuperscript{142} (1991) in his paper entitled "Urbanisation and Towns in Sikkim" reveals that "the number of urban centres and their distribution over the region are important for a balanced regional development". The main object of his paper is to asses the extent of urbanization and to identify the

characteristics of the towns of Sikkim. He suggests" (i) Communication systems between Gangtok and other towns in the state should be developed by improving roads and increasing frequency of buses. (ii) Amenities for urban dwellers and facilities for rural people in the towns should be increased by establishing more higher order functions and other socio-economic facilities (iii) Development in small scale industries and handicrafts should be done by giving incentives to the artesian and skilled workers in these industries. Fruit processing, blanket manufacturing and wine making are three main industries in the state and there should be a plan for their development and (iv) Administrative work should be decentralized in the district head quarters and taluk headquarters for better service to the people in the area.

K. R. Dikshit\textsuperscript{143} (1970) in his paper entitled “Evolution of Cities in Maharashtra: An Analysis of the Phases of Urbanization” analysed the evolution of towns by bringing into focus the relative importance of different factors, in a historical perspective, as they have influenced the growth of towns in Maharashtra. M. Vijayalakshmi\textsuperscript{144} (1989) analysed the urbanization and developmental processes in North Arcot District, Tamil Nadu. For this, rate urban growth and the economic base are identified by using ‘index of economic base technique’. The hierarchy of settlements for these towns are identified by using several indicators such as physical, economic and social


factors. The level of development of taluks are identified by using ranking technique.

Srikumar Chattopadhyay\textsuperscript{145} (1988) in his paper of “Urbanisation in Kerala” presents some unique features in shape contrast to the all India condition. He enormous growth of class-I towns and lop-sided urbanization trend recorded in the other parts of the country are conspicuously absent in Kerala. The state records tremendous growth of class-III towns, which are well distributed. The three corporation cities of Trivandrum, Cochin and Calicut, being placed equidistant from each other on the coast, offer almost equal functional facilities decentralized urbanization. This paper deals with different aspects of urbanization in Kerala and tries to highlight the possible factors, which have destined the urban landscape of the state.

Bupinder Zutshi\textsuperscript{146} (1988) in his paper on “Settlement Size and Distribution in Kashmir: 1981”, explained the urbanization process as highly localized as urban population is highly concentrated in the Valley Floor. Other regions have negligible urban population. There are marked variation in the pattern of development of urban centres between the valley floor and the other regions. The weak spatial organization of urban centres in the karewa, side valley and surrounding hills is indicated by very few urban centres located in these regions. These urban centres have small population

size and dominate in primary activities. Hence, they do not exercise any influence on the surrounding areas. Srinagar urban centres dominates the urbanization process of the division and occupies primate city position. Urban centres have developed only in the valley floor, especially along the national highway. This has created large scale imbalance in the development process. Thus, there is a need to promote the urban centres by decentralizing growth generative function to those urban centres. This process will ultimately trickle down the benefits to the adjacent hinterlands.

Kuntala, Lahiri147 (1989) attempts to measure the spatio-temporal growth patterns of towns in Lower Damodar valley region (1901-81). The economic and industrial history of the region shapes up the spatial pattern of the growth of towns. The impetus of growth first occurs in one or a few centres and spread outwards in successive decades to the surrounding areas. The territorial expansion of the metropolis and large industrial towns as growth poles attract the rural migrants opportunities and instead of building an even spatial pattern of townscape, they are distorting the urban scene.

Rekha Pant148 (1993) in her paper entitled “Trends of Urbanization in the Central Himalaya with Special Reference to Kumaun” analysed the urban development in kumaun being at snail’s pace. Tarai and Bhabar region of Nainital district gathered momentum due to industrial development, rich

agriculture farming, better infra-structural development and living facilities. Remaining two purely hill districts i.e. pithoragarh and Almora being slower in urban development but the process of urbanization is going on throughout Kumaun.

A.K. Singh\textsuperscript{149} (198) in his paper entitled "Typology and Structural Models of Urban Centres in South Mirzapur" highlights the spatio-functional structure of towns based on some generalized models. The size and functions of the urban centres in the various groups indicate briefly the nature of environmental relations that exists between the urban centres of the area and countries around. A town usually depends for its prosperity on the surrounding rural environment of which it is a local focus in respect of one or more of such functions as commerce, industry, administration, education, medical service, etc.

H. N. Misra\textsuperscript{150} (1986) in his paper entitled "A Model of Economic Base and its Application to the Towns of Uttar Pradesh" identifies three groups of towns based on Basic and Non-Basic ration: the dynamic, static and declining towns. Majority of towns, however, are dynamic in the sense that basic and non-basic ratio has witnessed the positive change. The economic base measurement also helps in measuring the degree of diversification goes on declining with the increasing index of specialization. It is important to

mention that most of the towns under study are small with high degree of diversification and low index specialization and therefore, there is every possibility for further growth is the functional structure of towns of Uttar Pradesh.

R. S. Tripathi\(^{151}\) (1993) in his another paper entitled “Impact of Urbanization on Literacy and Concentration of Non-Agricultural Workers in Rural Area of Bundelkhand (U.P.)” described the urbanization as instrumental in generating the literacy and non-agricultural occupations in rural areas. It is, therefore, very much imperative to accelerate the process of urbanization. He views that the policy of decentralized urbanization must be formulated and implemented in his study region as well as in other region also. There are number of rural service centres having greater prospect of development but rate of their development is very slow due to weak process of rural industrialization and tertiarization. If rural services centres of the region are provided impetus to develop in such a way that they may attain the status of town, the result is expected to be the development of human resource in rural areas.

Joshi, Y. G.\(^{152}\) (1978) in his entitled “Evaluation of the impact of the Growth of Urbanization on Farm-Productivity, Degree of Commercialization and Farm-Population Density in Madhy Pradesh” analyses the impact of the


growth of urbanization in Madhya Pradesh from 1961 to 1971. His hypothesis are that the urbanization is associated with a rise of productivity, increase in the level of commercialization and a decline in farm-population density. However, in actual analysis none of the above mentioned hypothesis could be proved with a required degree of statistical significance. He concludes that either urbanization fails to influence general pattern of agricultural in India or the urban population does not bare true urban characteristics as per the census reports and thus, cannot be considered as an index of urbanization.

Phanibhusan Roy\textsuperscript{153} (1987) in his paper "Migration and urbanization in West Bengal: 1951-71" analysed that "the migration from rural to urban areas still remains, in general, the dominant factor in urban growth. This role of migration in the process of urbanization in West Bengal in the period 1951-71 has been examined. The pace of urbanization is West Bengal has been very slow and its pattern too is irregular. The process of urbanization as defined by an increase in the proportion of urban population to total population has been correlated with the percentage variations in the proportions of migrants from Bangladesh and from other states of India, in the volume of in-migrants and net migrants (inter-district) and in the population of urban migrants to total migrants for both the decades 1951-61 and 1961-71. On analysis, it has been concluded that even though there might be some impact of migration on urbanization during the period 1951-61, it was almost absent in the decade 1961-71.

N.G. Jain\textsuperscript{154} (1964) in his paper entitled “The Emergence of Urban Centres in the Eastern District of Vidarbha (Maharashtra)” analysed the spatio-temporal changes of number of urban centres in the Eastern Vidarbha region. According to him urbanization is mostly developed in Wardha valley as it being most fertile valley associated with cotton cultivation and textile industry; in Nagpur plain because of central location and mineral wealth, various industries and commerce; in upper Wainganga valley because of exploitation of minerals like asbestos, manganese and coal. The eastern southern part of the region has only sub-towns and small towns except Chanda which owes its importance to coal mines and timber trade. Over all trend of urbanization in Eastern district’s of Vidarbha is study upto 1931 and then there is a rapid rate of urbanization. This means the growth of urbanization is keeping pace with the economic and industrial progress of the region.

D.K.Halder\textsuperscript{155} (1978) in his paper “City Size Distribution and Transportation System”, explains the allometric growth in explaining historical development of a system of cities. Though incomparable, both allometric growth and P/D hypothesis (the theoretical formulation of the spatial pattern of migration known as P/D hypothesis postulates the inversely proportional relation between the rate of total migration between


two places and the distance of immigration) require knowledge of the
distribution of migrants from a given place for a given distance by size of city
destination. Imperfect population distance remain as significant indices of a
city's attractive power. Population, distance, functional complimentarity and
economic interdependence contribute differentially to generate a 'pull' in the
society which determines the urban growth rate.

P. Jayamani\textsuperscript{156} (1984) in her paper entitled "Spatial Pattern of Urban
Centres and Imbalance in Regional Development" analysed the spatial
pattern of urban centres as well as the role of local forces at work in
discerning such pattern in Ramanathpuram District in Tamil Nadu. Her
research reveals the existence of a regional imbalance in the distribution. The
western and south-western parts of district have higher concentration of
urban centres and towards eastern and north-eastern parts the distribution is
relatively sparse. The western part of the district seems to posses a higher
level of economic development in contrast to the northern and eastern
sectors. The local factors accounting for deviations from their general
regional trend are well illustrated. The differential values of positive and
negative residuals firmly emphasize the importance of such local factors as (i)
the over shadowing effects of the large order urban centres in their closer
proximity, and (ii) the inadequately endowed pockets of varying proportions
unable to generate sufficient system of feedback in smaller order urban
centres even when located in the typical rural area.

\textsuperscript{156} Jayamani, P, (1984) "Spatial Pattern of Urban Centres and Imbalances in Regional Development",
A. Rajmohan\textsuperscript{157}(1982) in his paper entitled "The Hierarchical Organizational and Structural Pattern of Urban Centres: A Multivariate Approach" has analysed that "the urban centres reflect their growth histories and resource orientations. Distributions of towns of different sizes is uneven over space. Tamil Nadu, the second most highly urbanized state, has 439 urban centres out of the total of 2641 in whole of India. The organization of the urban centres over space also is considered as providing an insight into the regional difference in the development processes. Cluster analysis and factor analysis have been used to establish the hierarchy of urban centres and to understand their structural pattern, on the basis of a set of rigorously scrutinized variables which are demographic, occupational and cultural in character. An understanding of the multiple number of measurements on these variables is made possible through a reduction of dimensions achieved by subjecting the data set to factorial analysis. Factor analysis enables thus, to discover the fundamental dimensions of urban places in Tamil Nadu, while the multivariate taxonomic tool-cluster analysis is used to classify the urban centres into different groups".

Sudhir Wanmali\textsuperscript{158} (1967) in his paper on "Regional Development, Regional Planning and Hierarchy of Towns" analysed that "the province of Vidarbha is experiencing a process of rapid urbanization. The purpose of the


study is to examine the distribution of towns and urban services in Vidarbha and to investigate how an improved organizational form can be evolved for the provision of social facilities in the region.

**MEASUREMENT OF DEVELOPMENT:**

For measuring the relative score of various attributes of Demographic, Agricultural, Infrastructural, Industrial and Regional Development in the Maidan Region as well as Karnataka as a whole, the standard score technique has been applied (Z score) with help of Statistical Programming for Social Scientist (SPSS technique)

\[
Z_i = \frac{X_i - \bar{X}}{S.D.}
\]

where \(Z_i\) = Standard score for the \(i^{th}\) observation

\(X_i\) = Original value of the observation

\(\bar{X}\) = Mean for all values of \(X\)

S.D. = Standard Deviation of \(X\)

Further, the results of the standard scores obtained for different indicators of various developments (Levels of Urbanization,Levels of Demographic Development, Levels of Agricultural Development, Levels of Infrastructural Development, Levels of Industrial Development and Levels of Regional Development) were categorized by Standard Deviation. So that the regional disparities in the level of development of Maidan region of
Karnataka as well as Karnataka as whole of different talukas is obtained on a common scale. The positive values relating to the talukas score show extremely high, very low high, high and medium levels of development and negative values show the low, very low, extremely low levels of development.

The formula for Standard Deviation is as follows;

\[ S.D. = \theta \sqrt{\frac{\sum d^2}{n}} \]

Where \( \theta = \) Standard Deviation

\( d^2 = \) Squared deviation from the mean

\( n = \) Number of talukas

\( \Sigma = \) Summation of \( d^2 \)

The following indicators were selected for measuring the levels of development.

**LEVELS OF URBANIZATION:**

\( X_1 \) - Density of Urban Population of each Taluka

\( X_2 \) - Decadal growth rate of Urban Population

\( X_3 \) - Percentage of urban literate to total population

\( X_4 \) - Percentage of Urban population to total population

\( X_5 \) - Percentage of secondary and tertiary workers in each taluka

\( X_6 \) - Percentage of population of above 10,000 urban centres to total urban population.
LEVELS OF DEMOGRAPHIC DEVELOPMENT

$X_1$ - Density of Total Population per sq. km. area
$X_2$ - Growth of Population in Percentage
$X_3$ - Sex ratio (number of female per 1000 male)
$X_4$ - Percentage of Literates to total population
$X_5$ - Percentage of urban literates to urban populations
$X_6$ - Percentage of female literates to female population
$X_7$ - Percentage of main working population to total population
$X_8$ - Percentage of marginal working population to total population

LEVELS OF AGRICULTURAL DEVELOPMENT

$X_1$ - Percentage of net sown area to total geographical area
$X_2$ - Percentage of net irrigated area to net sown area
$X_3$ - Percentage of area sown more than once to net sown area
$X_4$ - Fertilizer consumption per hectare of net sown area (in kg.)
$X_5$ - Number of agricultural implements per 1000 hectares of net sown area (including I.P. sets and tractors)
$X_6$ - Number of agricultural implements per 1000 cultivators including I.P. sets and tractors
$X_7$ - Percentage of electric pump sets to total agricultural implements
$X_8$ - Percentage of cultivators to total main workers
$X_9$ - Percentage of agricultural labourers to total main workers
$X_{10}$ - Number of agricultural co-operative societies per 1000 cultivators
$X_{11}$ - Agricultural loan advanced by agricultural co-operative societies per cultivators (in Rs.)
$X_{12}$ - Percentage of rural population to total population
LEVELS OF INFRASTRUCTURAL DEVELOPMENT:

\( X_1 \) - Railways route length per 100 sq. km. of area
\( X_2 \) - National Highway road length per 100 sq. km. of area
\( X_3 \) - State Highway road length per 100 sq. km. of area
\( X_4 \) - District road length per 100 sq. km. of area
\( X_5 \) - Number of post office per 100,000 population
\( X_6 \) - Number of telegraphic office per 100,000 population
\( X_7 \) - Number of telephone exchange office per 100,000 population
\( X_8 \) - Number of telephones per 100,000 population
\( X_9 \) - Number of nursery and primary schools per 100,000 population
\( X_{10} \) - Number of secondary schools (high schools) per 100,000 population
\( X_{11} \) - Number of degree colleges per 100,000 population
\( X_{12} \) - Number of professional colleges (Polytechnic, Engineering and Medical Colleges) per 100,000 population
\( X_{13} \) - Number of hospitals (including primary health centres and family planning centres) per 100,000 population

LEVELS OF INDUSTRIAL DEVELOPMENT:

\( X_1 \) - Number of industrial units per 1,000 population
\( X_2 \) - Number of industrial units per 100 sq. km.
\( X_3 \) - Percentage of industrial workers to total main workers
\( X_4 \) - Percentage of workers engaged in household industries to total main workers
\( X_5 \) - Percentage of workers engaged in other than household industries to total main workers
\( X_6 \) - Percentage of industrial workers to total population
\( X_7 \) - Percentage of industrial workers per 100 sq. km. of area
DEGREE OF URBANIZATION:

In the present study degree of urbanization has been calculated by using the following equation;

\[
\text{Degree of Urbanization} = \frac{\text{Urban Population of the areal unit}}{\text{Total Population of the areal unit}} \times 100
\]

Having obtained the index of degree of urbanization for all talukas, they are classified into various classes, considering the standard deviation for the whole region.

DISTRIBUTIONAL PATTERNS OF URBAN SETTLEMENTS:

To analyse the pattern of distributional of urban settlements, the nearest neighbour analysis has been used. The spatial pattern of urban settlements is characterized by their uneven distribution. There are clusters of urban settlements in some parts, while in others they are sparsely distributed. The statistical technique called the 'Nearest Neighbour Analysis' developed by plant ecologists (Clark and Evans, 1954) has been used to analyse the spatial distribution pattern of urban settlements. The technique of nearest neighbour analysis shows the degree to which any observed distribution of points deviate from the random distribution.

The technique of nearest neighbour analysis is very useful in studying the point pattern. It is calculated by the following equation

\[
R = \frac{D_{ohc}}{D_{ran}}
\]

(1)
where

\[ D_{obs} \] is the measured mean distance between the nearest neighbour point observed in a given area

\[ D_{ran} \] is the expected mean distance for a similar number of points distributed in the same area

\[ R \] is the nearest neighbour index

\[
D_{ran} = \frac{1}{2\sqrt{\frac{N}{A}}}
\]  \hspace{1cm} (2)

where

\[ N \] is the number of urban settlements in the study region

\[ A \] is the area of spatial unit

Hence,

\[
R = \frac{D_{obs}}{1 + 2\sqrt{\frac{N}{A}}}
\]  \hspace{1cm} (3)

It can be written in simplified form as:

\[ R = 2D_{obs}\sqrt{\frac{N}{A}} \]

Using the above formula, the nearest neighbour index is calculated for the entire region considering a single unit. Since the study area presents a visible contrast in the density pattern and spacing of urban centres, the entire region is divided into four physical divisions for the purpose of calculating
'R' value. In such a situation different 'R' values will be obtained. 'R' values for entire region have been calculated in order to find out the association of urban concentration in the study area.

The pattern of distribution has been studied by considering the revised 'R' value scale given in below Table

Table No. 1.1
Revised 'R' Value Scale

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>'R' value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0 to 0.15</td>
<td>Absolute clustering</td>
</tr>
<tr>
<td>2.</td>
<td>0.16 to 0.50</td>
<td>Linear clustering</td>
</tr>
<tr>
<td>3.</td>
<td>0.51 to 0.80</td>
<td>Clustered grouping</td>
</tr>
<tr>
<td>4.</td>
<td>0.81 to 1.20</td>
<td>Random distribution</td>
</tr>
<tr>
<td>5.</td>
<td>1.21 to 1.40</td>
<td>Near to uniform or/approaching uniform</td>
</tr>
<tr>
<td>6.</td>
<td>Above 1.40</td>
<td>Uniform</td>
</tr>
</tbody>
</table>