

1.1 INTRODUCTION :

An urban centre by virtue of its multifunctional characteristics serves as a service centre. City serves its surrounding area which constitutes its sphere of influence. The spatial impact of cities on the surrounding area and its demarcation is an important aspect of Urban Geography. A city does not exist in isolation, it depends for its maintenance and life on many things outside its limits. Similarly it also provides certain services to its surrounding area. Every city whether big or small, has its own sphere of influence. The sphere of influence of a city refers to a region closely related with the city for various functions and services. The region which comes under the influence of city, is called the zone of influence of the city. The sphere of influence of a city, is popularly also called 'Umland' or 'Hinterland.' Many other expressions of sphere of influence are in vogue, such as 'catchment area', 'urban field', 'urban hinterland,' 'city region,' 'Umland,' 'Tributary area', 'complimentary area', 'zone of influence', etc. have appeared in the literature of urban geography. These terms are interchangeably used with a common notion expressing the relationship that exists between city and its surrounding. Geographers have adopted one or the other of the above terms. Dickinson (1947) and Harries (1941) have preferred the term 'city region.' Green (1950) has used various terms such as

'urban hinterland,' 'sphere of influence' and 'catchment area' in spite of umland. Smilies (1953) has used the term 'urban field.' Vanclaff (1941), Taylor (1951) and S. Donge (1932) have used the term 'umland' to describe the area surrounding the town and which is served by it.

1.2 REVIEW OF LITERATURE :

While expressing interrelationship between city and its region, Mark Jefferson (1931) had made the statement that - " Cities do not grow of themselves, but it is the countrysides set them up to do tasks that must be performed by them." It was this statement that for the first time arosed the consciousness of analytical approaches to the study of city and its surrounding region. Since then, a vast literature on the subject has been appearing. The underlying idea is that the city is not selfsufficient unit within municipal limit, however, it is a focal point of surrounding region and the place of a variety of central functions and specialized services.

Smilies (1953) described that 'Towns' do not exist in vacuumes cut of from the continuous area along clearcut municipal boundary. On the contrary they are always intimately related to areas larger than the mere sites they occupy.

According to Taylor (1951) - There exist a socio-economic relationship between the city and its continuous

area because the growth of cities directly and indirectly depends, to a great extent, upon its relationships with its environs.

1.3 METHODOLOGY FOR DELIMITATION OF SPHERE OF INFLUENCE :

Besides Engineers and Planners, Geographers are also confronted with the problem of defining and delimiting the boundaries of sphere of influence. The earliest work of Dickinson, a British Geographer, is looked upon as the pioneering work in this field. Dickinson (1936) has used wholesaling, retailing, insurance, newspaper circulation, accessibility and other criteria to delimit the metropolitan regions of the U.S.A. Many British geographers have followed the work of Dickinson. Smilies (1968) has suggested several single feature parameters, such as newspaper circulation, social organization, educational institutions and catchment area, employment, collection of milk, wholesale distribution etc. Bracey (1953) and Green (1950) have demonstrated a statistical application of bus service - the single objective method to determine the boundaries of the urban sphere of influence. Park and Newcomb (1933) mapped the areas of the morning newspaper circulation for the delimiting the metropolitan regions. The work of Brush (1953) on Wisconsin and that of Green (1955) on New York and Boston cities are noteworthy.

In Germany, Schultze (1951) has summarized the functions and sphere of influence of fourty urban centres. In Finland, Oiva, Tuominen has delimited the umland of Turku using the traffic flow of school children; shopping flow and patient flow. Parallel studies were also made by Whitelaw (1962), and Scott (1964) in Southern Island.

Apart from empirical studies, several scholars have adopted quantitative approach to demarcate the areas of dominant cities. Reilly (1931) advocated the 'Law of a retail gravitation', Stewart and others laid emphasis on the gravity of potential model of human interaction.

1.4 INDIAN GEOGRAPHERS AND THEIR CONTRIBUTION :

Many Indian geographers have studied the zone of influence of various Indian cities using suitable parameters for demarcating the boundaries. Municipal authorities, town planners, regional planners and geographers have studied many cities and their regions. Among Indian geographers, Singh R.L. (1955) has calculated the zone of influence of Banaras city considering the services like -

- (i) Foodgrain supply area,
- (ii) Milk supply area,
- (iii) Vegetable supply area,
- (iv) Highschool service area
- (v) Higher education service area.

Further Singh has also studied Bangalore city and its umland with certain additional parameters in 1964.

On similar basis with greater care Shah Manzoor Alam (1965) has delimited the hinterland of twin-cities of Hyderabad-Secunderabad, considering the various parameters like firewood supply, milk supply, wholesale business, newspaper circulation and university catchment area.

Largely following the method of Singh a number of geographers have delimited the umlands of various towns and cities in India. Singh, in 1956, delimited the umland of Agra; Mukerjee (1962) of Modinagar; Janki and Ghia (1962) of Baroda; Dutta (1963) of Jamshedpur; Chatterjee (1965) of Howara and Krishnan (1970) of Chandigarh.

Dixit and Sawant (1968) while delimiting the hinterland of Poona, have given due importance to -

- (i) Commuting area by local trains
- (ii) Commuting area by S.T.Buses
- (iii) Commuting area by local buses
- (iv) L.I.C. area
- (v) Post and Telegraph division
- (vi) zone of supply of perishable goods
- (vii) Distribution area of essential non-agricultural goods.

Both have jointly examined the concept of hinterland as a region and observed its spatial characteristics. Further they have suggested the indices for delimiting the boundary.

Apart from these empirical methods, very few geographers in India have used mathematical models for delimiting the sphere of influence. Mahadeo P.D. and Jayshankar (1969) have applied the mathematical model for demarking the potential umland of Mysore city. In that exercise they have modified the gravity potential model and calculated the amount of interaction between the two major cities of Karnataka.

V.L.S. Prakash Rao (1958) with the help of simple mathematical model has demarcated the zone of influence of towns of Mysore, where he has calculated the radius of zone of influence of each town by considering the population size of the town of Mysore State.

Thus, various empirical methods when applied for calculating the zone of influence need intensive field work where the energy, time and money are consumed at a higher degree. When a large number of towns are to be studied, it becomes very difficult to collect the information through field work. Under these circumstances theoretical and mathematical models have been used.

1.5 CHOICE OF METHODS IN THE PRESENT STUDY :

In the present study, the sphere of influence of Kolhapur city has been demarcated by empirical as well as quantitative method. The parameters used for calculating the sphere of influence are selected, city services, serving surrounding area, and a few services of countryside supporting city population. The city services includes -

- (i) Kolhapur Municipal Transport - Bus service
- (ii) Medical service zone
- (iii) Petrol and diesel distribution zone
- (iv) State transport, bus service zone
- (v) Kolhapur district Co-operative Bank - service zone
- (vi) Shivaji University catchment area
- (vii) Newspaper circulation

The countryside services

- (i) Milk supply zone
- (ii) Vegetable supply zone

The data regarding above mentioned parameters have been collected from K.M.T. office, Govt. Hospital, Petrol and Diesel stockists and distributors, S.T. Bus office, K.D.C. Bank Office, Vegetable markets, Wholesalers, Newspaper Press Offices etc. The data includes both the, official statistics and non-official (first hand statistical information) information.

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