

ABSTRACT

Existing studies on the nature and variations of livability in different residential areas within a metropolis are based on an understanding of a wide spectrum of causal factors and their inter-relationships, which lead to a variety of livability conditions. This variety of livability conditions may be referred to as different patterns of livability. The patterns are many and they depend on several factors ranging from their regional histories, climatic variations, physical-environmental characteristics, and socio-economic and socio-cultural backgrounds within the metropolis.

The study of livability variations within a metropolis is positioned within an understanding of an enormous scope of causal factors and their inter-relationships. Thus any study on the variations of livability within a metropolis can procedurally become an extremely difficult task. The two most important hindrances arise while developing a logical system of analysis considering the wide spectrum of factors on the one hand and sequencing the discrete steps of analysis based on a few chosen parameters or components representing the patterns on the other hand. In this study, an attempt has been made to evolve a simple approach for an assessment of livability variations within a metropolitan context whose scope is otherwise vast and complex.

Three major **'sub-systems' of patterns** broadly governs the livability variations. They are first, the **physical-environmental characteristics** of the settlement. Secondly, these include the **socio-economic dimensions** like income distribution, occupational structure or labor characteristics, nature of production surplus and trade movements between settlements. Finally, third, this representing the **socio-cultural ones**, which may be related to older folk and vernacular traditions and also may be of the adopted contemporary nature. The three 'sub-systems' collectively co-exist.

In this study **observation on the patterns** of the three sub-systems has been made **from different levels within a metropolitan region**. These levels are the macro – i.e. parts of the metropolitan region or the sub-regional level; the meso – i.e. parts of a sub-region or the urban center level; and the micro – i.e. residential parts of an urban center or the neighborhood level. The conclusions based on these observations from the three levels have been compared to inferences drawn from the analysis of data, which represents the nature of dwellers satisfaction and preferences at the local house cluster level. Overall conclusions and recommendations have been finally drawn based on the extent of consistencies between the three sub-systems of patterns as observed from the macro, meso and micro level and finally with that of the local level.

It is expected that observations on these patterns from the different levels of metropolitan inner hierarchy will largely vary from developed countries in the West to those of developing ones in the East. Also within a country, these patterns will vary from one metropolitan region to the other.

depending on their comparative levels of economic development, socio-cultural background, physiographic and climatic conditions and also their historic backdrops, which are represented by the variations of the patterns.

With globalization, now especially in developing situations of Indian metropolitan cities, there is a tendency to achieve uniformity in the metropolitan pattern of development, which unconsciously is negating the variations of the local socio-economic and socio-cultural settings and producing replications of 'proto-type' physical patterns irrespective of local aspirations and needs. Such replications also in general do not represent housing preferences and living satisfaction levels of different concerned groups (different housing communities and dwellers) within the metropolis. This leads to undesirable livability patterns causing ranges of dissatisfaction amongst the concerned. Thus the present study has aimed to understand the variations in livability by identifying **first**, the nature of these variations and **secondly**, their underlying causes.

To understand the patterns of the three sub-systems based on observations from different levels within a metropolitan region, clues have been drawn from areas of research and concepts that are centrally relevant. The objective is to develop and consolidate a logical framework for the study of the variations of livability within a metropolitan region. Such clues have been drawn from three important concepts – 1) the concept of livability itself, 2) the concept of pattern language by Christopher Alexander, and 3) an ancient concept of order expressed by different degrees of harmony of patterns first at a particular level and then between various levels and this is called the *Mandala*.

At the macro level, there has been an initial study of the historic evolution of the metropolitan region of Kolkata, which has led to the consequential understanding of livability variations within the metropolis and the identification of various sub-regions based on the observations of the variations in the three sub-systems of patterns and their cumulative effect on livability in these sub-regions. The understanding of broad livability variations between several sub-regions of the metropolis has necessitated further detailed assessment of livability variations observable from levels below the macro level.

The components used for the macro level study are broad keeping in view the observations from the overall metropolitan sub-regional level. For further observations from the meso or the urban center level, the analysis of the selected parts or urban centers from each sub-region in Kolkata Metropolitan Area has (KMA) been conducted based on more detailed and quantified parameters. To facilitate observations from the micro or the neighborhood level, further detailed components have been utilized compared to those at the higher levels.

Finally at the local level, dwellers' priority and preference levels with regard to different housing situations have been studied based on data on discrete variables representing physical-environmental

characteristics and socio-cultural characteristics of housing areas. Ten housing clusters have been surveyed and they are selected from the ten neighborhood areas within KMA.

Overall it has been found that the neighborhoods within the urban areas of the sub-regions in the inner metropolitan periphery have excelled compared to the highly developed neighborhoods in core urban areas and obviously than the relatively under-developed areas of the sub-regions in the outer metropolitan periphery. Compared to others, a moderate level of physical-environmental factors and a fair mixture of traditional and modern socio-cultural attributes have created an atmosphere of the 'optimal' in these areas of the inner periphery. On the contrary, the socio-economic and socio-cultural patterns alone have guided livability standards in the areas of the core and outer periphery, respectively.

Two major consistencies are evident. One, the nature of conclusions from the local level is found to conform to the understanding observed from the three upper levels namely the macro, meso and micro. Two, as observed from the different levels, the house clusters of neighborhoods in the inner periphery and mainly on the west bank have shown consistently higher preferences.

The study has clearly revealed that there are definite linkages of the patterns of each of the three sub-systems with its higher level and lower level patterns. Livability of an area depends on the inter-relationship and intra-relationship between the patterns.

The study has also revealed that for improving livability of a particular area within a metropolis, actions have to be taken at all levels in respect of the parameters that govern the patterns at that level. Only then better linkages between the three sub-systems of patterns at that level and with those at levels higher and lower to it can be established. Such linkages will assure stronger harmony between patterns at a particular level and between various levels representing the *Mandala*. In the case of Kolkata Metropolitan Area (KMA), the linkages are found to be weaker.

Policy decisions on housing at various levels within a metropolis are taken frequently. In the context of any metropolis, these policy decisions are rarely backed by understanding and analysis of the patterns that exist in different levels of the metropolis. In this study, an attempt has been made to develop such an understanding to facilitate able urban management and planning of settlements.

The methodology suggest that policymaking will tend to become complete covering the whole hierarchy – i.e. from the global to the local, **where equity between priorities emphasized from different levels shall be closely realized**. With such harmony the very dynamics of future metropolitan settlement systems in India and of similar situations in other countries may be well accommodated within the scope of holistic research, which is otherwise vast and complex.

Key words: Livability variations; sub-systems of patterns; the inner hierarchy of metropolis; observations from levels; linkages and conformities within and between levels; degrees of order and *Mandala*; planning and management of settlement systems in a metropolis.