CHAPTER 1

INTRODUCTION

Visualization of the interaction between the human being and the natural environment is the heart of geographical investigations. The mode of human interaction has been undergone a rapid twist along with the urbanization from the deterministic and sustainable way of life to somewhat possibilistic urban way of life. As a result the urbanization and associated phenomenon became one of the burning topics of interest among many disciplines like Geography, Sociology, Economics and Demography, finally an interesting multidisciplinary subject i.e. urban social geography is evolved.

Urbanization preceded by industrialization led to rapid demographic growth rather than of the urban attraction of the urban way of life, the inhabitants of rural districts are flooded in to towns and cities. The immigrant populations create wide belts of miserable slums while the host town or city lacks the resources to provide the newcomers with jobs, decent housing, minimum public services, with even the rudimentary protection for health and hygiene (Reissman 1964, p.161). A strong interest in the measurement of social well being has developed over the last few decades. There has been an increasing awareness on the part of the public and policy-makers of the wide-ranging effects of problems such as pollution, crime, lack of housing and sanitation etc. as they affect the total spectrum of the society. It is realized that material and economic development alone cannot eradicate the above problems (Lislie et al. 1978, p. 457)

Enhancement of quality of life is always amongst the principal objectives in the course of social development. The indicators have been widely employed as measures of people's well-being, its achieved level, and changes over time. Researchers are not satisfied with works that assess the quality of human life and
monitor the evolution of the societal environment in monetary terms alone, and they do not intend to surrender conventional quantitative computation methods. Neither universally accepted definition of 'quality of life', nor methods of its measurements have yet been established. So the research on quality of life in most cases comes across two long-standing issues.

First, there is no standard way of establishing the conceptualization of 'quality of life' which tends to the level of achieved satisfaction in both the basic materialistic needs and emotional needs. Quality of life research, there for, is concerned with an extensive range of topics, such as individual physical and mental health, well-being, satisfaction, family, work, housing, social relations, political and cultural lives, social ethics. Consequently, researchers have never arrived at any compromise in the selection and weighting of indices in empirical quality of life studies. Second, views on how 'quality' should assessed. Quality implies value judgments and ranking; so quality of life might be ranked from high to low, and from positive to getting worse. Hence, comparisons between communities or periods often show difficult (Chan et al. 2005, pp. 260-261)

Urban geography has moved a considerable way in the last five decades. In the beginning it was predominantly based upon morphological views of urban structure with some expanding interest in economic functions of towns but very little awareness of the social qualities of urban life and organization. The spatial analysis paradigm has at all time created problem for human geographers. It was the mere complexity of technical procedure for some, and was danger of an increasing vagueness of reality and apparent stereotyped even much quantitative analysis for others (Herbert and Smith 1979, pp. 2-3)

Social problems are clearly both culturally and historically specific and they reflect the prevailing values, ideology, structure of the existing social formation, and the nature of the urban environment and the way in which the people perceive conditions of life within them. Social problems also will relate to the level of development of the economy, its capacity to support social services, the degree of
cohesion or conflict within the population, the occurrences of forces that threat the existing social order, the strength of social control, and so on. Until late 1970s the collection of data on social problems conditions kept on a highly unsystematic method. Statistics on the incidence of crime, delinquency, illness, various forms of ‘social deviance’ etc. were generated largely as by-products of the administrative procedures (Herbert and Smith 1979, pp.13-14)

The geographical variations in social conditions are vital to the social state of the nation. Aggregate national statistics are a summation of the conditions of people distinguished by location of residence as well as in other respects, there for, they fail to show the local situation, and hide the extreme. There is shortage of adequate information on areal variation in social conditions. It is due to the failure to recognize the importance of the geographical component of national social problems, which fallen between the two academic schools of geography and sociology. Geographers have usually ignored contemporary social problems, and sociologists, generally given little care to areal variations in the incidence of social condition (Smith 1973, pp. 4-7)

The various national level indicators of well-being like Gross national product (GNP) or crime rate make difficult to argue convincingly that these indicators alone provide an adequate measure of the well-being of the population. This type of dilemma led to the broadly applicable series of social welfare using social indicators for the assessment of the social well-being in community level, using the functional areas of public safety, health, education, community service etc. (Zenher 1977, pp. 2-3)

Factor analysis and principal component analysis have used prominently in geographical research from 1970s. These statistical techniques are generally used to extract the underlying dimensions of variance within large matrices of numerical data, by deriving a relatively small number of composite variables - factors- accounting for a relatively large share of the original information. This is possible because many individual variables are quite highly inter-correlated, thus
differentiating between areas in a similar manner. The territorial units of observation can be given scores on these composite variables (Smith 1973, pp. 11-12).

The differences in the structure of economic production and the pattern of population and settlement are usually accompanied by pronounced spatial disparities in well-being because of variations in access to basic goods, services, and amenities (Hall 1984). Quality of life implies a rather personalized concept whereas well-being refers to aggregates of people defined by area of residence more appropriately addresses the welfare of some social groups (Smith 1973, p. 66). Compared with the way in which national economic accounts are kept, the recording of the social state of nations was unsophisticated in the extreme. Mounting concern at this situation, coupled with shifting societal pre-occupations in the direction of more social aspects of life, came to a head in the latter part of the 1960s in the ‘social indicators movement’ (Herbert and Smith 1979, p. 14).

The basic tasks which can define the scope of human geography are descriptions, explanations, evaluation, prescription and the implementation. Description involves the empirical identification of territorial levels of human well-being, or human condition. Explanation covers the how of the description. It involves identifying the cause-and-effect links among the various activities undertaken in society, as they contribute to determine who gets what where. Evaluation involves making judgements on the desirability of alternative geographical states, and the societal structures from which they arise. Prescription requires the specification of alternative geographical states, and alternative societal structures designed to produce them. This is the process of planning the spatial organization of human activity, i.e. spatial reorganization. Prescription involves answering the ethical question of who should get what where. Implementation is the final process of replacing a state deemed undesirable by something superior (Smith 1979, pp. 9-10).
1.1 SELECTION OF STUDY AREA

This study is an endeavour to outline the urban environment and the social well-being of the various residential areas of Calicut city. For this study the units of residential area are the wards. Wards are the administrative divisions of the city or area based on the geographic, historical, social, ethnic and economic realities and so exhibits more or less homogeneous character. So the wards are the meaningful units of the area for analysis of well-being or quality of life in city or micro-level studies. The author has investigated the urban environment and the social well-being of each of the wards with the help of certain selected indicators.

The area of the study is the Calicut city, Kerala as demarcated by the Municipal Corporation and it consist the actual city and the suburbs. It is a medium sized coastal city and is the third largest and one of the main commercial cities of Kerala. The city was founded on a marshy tract along the Arabian coast in 1034 A.D. Calicut has been a multiethnic and multi-religious town since the early medieval period. Hindus form the largest religious group, followed by Muslims and Christians.

Many works already done in the quality of life in city level in India and abroad, but the city level enquiries in terms of well-being, for medium sized cities, using sound methodologies are not as much in the country. This study therefore is an effort in studying the well-being in a medium sized city and the pattern of its distribution. The research problem is very important because it undertake the study of an aspect which affects millions of people who are living in urban areas all over the India especially southern India. The trend of urbanization and the moving of people from rural to urban areas became a matter of increasing importance. So the information about the environment and well-being to be collected and analyzed to sustain and improve the habitat in which large number of people are living. It is this realization that stimulated the author to undertake the study of urban environment and social well-being of Calicut city.
Although the spatial pattern of the urban environment and the social well-being of the Indian cities are highly varying, there are considerable similarities between them especially in the case of south Indian cities. It can say that Calicut city is a representative of South Indian cities. The city of Calicut has been selected because it is a historical, cultural and medium sized city, and moreover is familiar to the author.

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The living condition and extends of urban problems exclusively for developing countries are portrayed by Mc Gee: the rapid growth of the third world cities is evident everywhere in their physical appearance… housing and city population are forced in to squatter settlement of flimsy miserable huts constructed of makeshift materials which occupy any vacant land in the interstices or fringes of the city… The attempt to build up community and civic pride breaks down under the impact of population growth and “shared poverty” in to a condition of urban anarchy. The end product is that the cities of the third world become wastelands, conglomerations of millions of individuals… (McGee 1977, pp.18-19)

The distinction of residential areas over city space in Indian cities goes hand in hand with community or ethnic differentiation of the city space. Access to resources and power in these areas has been largely determined by the ethnic status of people, that is the position of population groups in the hierarchy of caste, or race or religion determines their socioeconomic status and political power. In the specific example of India, access of a community to power and therefore level of its influence on the geographical allocation of scarce public resources depends
on its position with regards to dominance and caste hierarchy (Fakhruddin 1991, p.4).

The analysis of the social well-being which depends on the quality of urban environment in the context of residential areas falls in the domain of ‘urban ecology’. This approach still recently had been employed to inquire the socioeconomic structure of urban populations and its residential distribution within the urban areas. These analyses are based on the matrices which contain information regarding the socioeconomic characteristics of a population, housing conditions, amenities, and facilities, security feeling and such relevant variables of urban life in small areas within the city (Fakhruddin 1991, pp.5-6).

1.2 OBJECTIVES OF THE STUDY

The present study has some important objectives

- To study the physical environment, the cultural entity and the demographic features that moulded the evolution, history and recent expansion of Calicut city
- To conceptualize the urban environment, social well-being and the relation between them through review of previous work in the concerned field.
- To assess the factors which governs the urban environment and social well-being measured in terms of housing condition, amenities and facilities, education and income, housing and security and migration, of the sample households in different wards of the city.
- To assess the social environmental problems among different socio-economic groups of the sampled household and the respondents view towards its improvement.
- Assess the spatial pattern and areal variations in the well-being of the residents of Calicut city, taking electoral wards as units.
1.3 HYPOTHESES

- Overall socio-economic conditions of society in terms of housing, amenities, education, ethnicity, security feeling and migration are partially related with the urban environment and the social well-being.
- Lower the socio-economic and psychological conditions higher the well-being and higher the socio-economic and psychological conditions lower the well-being.
- The locations of the houses, neighbourhood quality and the congestion have a little effect on well-being of the residents.
- In the city municipal environmental condition like housing space, open space, greenery and cleanliness have less influence on the social well-being and the quality of life.

1.4 DATA AND SAMPLING

The selection of data is basically influenced by the concept of social well-being developed by the school of social geography since 1960s. A large number of variables containing information with regards to population characteristics and condition of life are used in this analysis, since there is no single comprehensive source of required information. Even the census of India can’t give population statistics on the city sub-areal level of wards. The information available in the census table relates to population size, sex composition, scheduled caste and scheduled tribes, literate population, number of households, work participation rate and number of occupied residential houses. The shortage of required data from census table compelled to explore other sources like government and quasi-government offices and agencies which collect and maintain statistics on population and other aspects of city life.

Secondary data available in different places in different forms are not sufficient to draw out the social well-being and the urban environment, therefore a
one and half (1.5) per cent sample survey of total household in the city is conducted. The unit of survey was households as the purpose of study was to analyse household characteristics as well as the condition housing and immediate environments in which they live. The sampling procedure adopted can be described as stratified random, the stratum selected as the wards. The care is taken in the survey to represent the households of different categories, communities and localities present in the wards. For this purpose the author interviewed the old shop keepers, political representatives and NGO field workers etc. and collected the information and location of particular phenomenon on the respective ward.

The city of Calicut is divided in to fifty-one wards and 80528 households according to 2001 census. From each wards one and half percent of sample is selected randomly which have a range of between twenty and thirty households according to the total number of households in respective wards. The households of selected houses were asked questions related the well-being through a prepared schedule, their responses and some observation of the surveyor were recorded. The information collected was arranged at ward level for analysis.

The variables were chosen as indicators of the urban environment and social well-being and they related to housing structure, amenities and facilities, demography and ethnicity, education and income and the security and migration. The absolute values are not so fit to comparison in ward level, so they are transferred to percentages and ratios. The present study is based on both primary and secondary data. The secondary sources include Census of India, Census Report, District gazetteer, District census hand book, economic and statistics report and Corporation office.

1.5 TECHNIQUES OF ANALYSIS

The survey and observation constitute a large number of important variables which explain the urban environment and the social well-being of Calicut city.
The representation and analysis of this much of data was a great task to the author. Several simple methods not allow the multivariate structure without which the study cannot be complete. Appropriate operational techniques for this task are found in two research traditions in geography: multivariate regionalisation and factorial ecology. The method of multivariate regionalisation has developed and spread rapidly after the publication of Ginsburg’s atlas of economic development. Many of the earlier attempts have employed simple additive techniques involving ranking and classification of indicators according to some theoretically determinate criteria. Later this methodology was modified under the ‘social indicators’ approach that reacted sharply to the over emphasis on economic criteria as the measure of human well-being. As a result, more and more social indicators have been incorporated in the regional analysis of the development. Since the relationship among these varied indicators of development have become uncertain, procedures of standardisation have been adopted so that the transformation of indicators may entail there addition into various categories of the development.

Methodology of factorial ecology developed in the early 1960s has grown out of an older tradition of social area analysis in urban geography. Social Area Analysis is the technique for identifying segments within a city, or it is the process of identifying the “urban sub-communities”. The basic unit for social area analysis is the census tract, which is a group of contiguous blocks in a city, contains a definite number of people and intended to be a socially homogeneous as possible (Reissman 1964, p. 86). Factorial ecology employs a variety of mathematically rigorous methods of factor analysis to reduce a large number of socio economic and environmental indicators into a few underlying dimensions. Unlike the methodology of multivariate regionalisation and social area analysis with structure variables according to some theoretical constructs, it allows the construct to emerge from the interrelations of the original variables from which a similar set of smaller number of variables is derived that reproduce the original relationships except for the restriction that derived variables are independent of each other. By combining standardised original variables and their loadings on computed
variables (factors), original variables may be aggregated to exhibit regional
distribution of new variables.

The methods of classification of variables in to major dimensions in the two
traditions have their relative advantages. The additive method involved simple
calculation and there is little ambiguity involved as all the subjective elements are
usually known and made explicit. Moreover since they imply no assumptions of
orthogonality of categories or dimensions, relationship among them may be
evaluated and analysed. Such methods of classification are quite valid, if
theoretical constructs are acceptable and the addition of the variables is also
legitimate. However the assignment of equal rank-difference to varying
magnitudes of a variable results in considerable loss of information.
Standardisation procedure, usually that of normalisation of distribution overcomes
much of the loss of information, nevertheless simple addition without giving
consideration to the significance of the constituent indicators of a category can’t
represent a major part of reality.

The aforesaid problem is largely solved by the factor analysis method
because the loading of variables on a factor (category) is their weight which is
derived from their factual interrelationships. But the factor analysis procedure
starts with a solution which is not mathematically unique. Therefore, there is no
assurance that factors obtained would conform to the theoretically relevant or most
important aspects of the reality. Generally apart from the first factor that is
understood as an overall index, all other factors remain un-interpretable. Hence
factors are subjected to relation to some theoretical criteria to make the factor
structure more interpretable. But at this stage the problem become more complex.
Though factor loadings remain orthogonal, factor scores do not. Thus at the final
stage of this analysis ambiguity is involved in the interpretation of regional
patterns of various dimensions.

The data from different sources is processed and complied on the ward level
which is taken as the unit of analysis. The processing has involved conversion of
raw data into derived values as percentages, ratios, densities etc. In some cases weighted indices are also calculated which are explained at appropriate places. Appropriate operational techniques for this task found are chi square test, f-test, and t-test. The author has adopted factor analysis to explore the way in which household differentiated over the city space because of the availability of data. However some simple and some complex techniques are also used to classify wards and indicators into groups like Standard deviation method and Principal components analysis to reduce large number of variables in to smaller number.

Computation for this analysis has been carried on the computer present in the university computer centre of Aligarh Muslim University Aligarh using SPSS 11.0 version and indigenously developed SSP programme in FORTRAN. Besides these methods, advanced cartographic techniques and GIS-Arc View 3.1 programmes have been adopted.

1.6 FACTOR ANALYSIS

Factor analysis is a statistical method used to describe variability among observed, correlated variables in terms of a potentially lower number of unobserved, uncorrelated variables called factors or it is a statistical technique, the aim of which is to simplify a complex data set by representing the set of variables in terms of a smaller number of underlying variables, known as factors. The technique is a branch of multivariate analysis and may also be described as unsupervised learning and an exercise in modelling. Steps for performing factor analysis are given below.

1. Collection of required data.

2. Arrangement of a variance-covariance matrix of the observed variables.

3. Selection of suitable number of factors for the particular problem.

4. Extraction of the initial set of factors.
5. Perform the factor rotation to a terminal solution.

6. Interpretation of the factor structure.

7. Construction of factor scores to use in further analyses

The factor analysis include Forty-nine variable relating to the urban environment and the social well-being as described by housing structure, amenities and facilities, demography and ethnicity, education and income, and the security feeling and migration of the inhabitants of the fifty-one wards of Calicut city. Computations for this analysis were carried on the system available in the computer centre of Aligarh Muslim University. The programme of the factor analysis available in the stored Standard Subroutine Package gives a principal components solution. The steps of computation are summarized below:

- Computation started with the transformation of original data matrix D for \( n \) observations on \( m \) variables in to a standard score matrix \( Z \) of \( n \times m \) order
- From the \( Z \) matrix an \( m \times m \) order correlation matrix \( R \) is calculated which contain the product moment correlation coefficients.
- This correlation matrix was resolved in to a factor matrix \( A \) of \( m \times r \) where \( r \) was the number of factor extracted. The programme employed can extract as many principal components as the number of variables, therefore, in the first instance all the factors were extracted. A histogram of the cumulative percentages of the variance explained by the successive factors and cumulative number of factors was constructed. By inspecting the rate of change in the explanation of variation by factors, the number of factors to be retained was determined.
- Since the original variables retained were not readily interpretable, the factor loading matrix \( A \) was rotated according to the normal varimax criterion to reproduce a new factor loading matrix. The criterion employed rotated the factor matrix to such a position where a minimum possible
number of variables loaded high on each factor. The factor structure thus became simpler and more easily interpretable.

- From the matrix multiplication of the standard score matrix of \( n \times m \) order and rotated factor matrix \( A \) of \( m \times r \) order, a factor score matrix \( F \) of \( n \times r \) order was obtained. The factor scores were then normalized to zero mean and unit variance. These factor scores provided a measure of position of each ward on the new factor.

Here it should be pointed out that a factor analysis including variables of urban environment and social well-being might have a better exercise. This might have helped in the analysis of the intricate relationship between the two sets of variables. But the limitation imposed upon by the programme used, which is the number of variable should not exceed the number of observation, has not only restricted the analysis but also imposed a limited number of variables in the analysis. So many other important variables had to be omitted. But the relationship between the urban environment and the social well-being were qualitatively evaluated.

1.7 RESEARCH DESIGN

The work has been divided in to six chapters excluding conclusion. Chapter one is a general introduction to the entire study which includes the importance of topic and its relevance, reason of the selection of the particular topic and specific study area, the objectives and the hypothesis. The methodology used for the survey and analysis is also incorporated with this introductory part.

The Second chapter reviews the literature to outline the extent of previous works on the field and are arranged in chronological order to get a picture of the development and the paradigm shift of the area of interest. 63 literatures comprising books, edited books, articles, research papers and reviews are
incorporated which the author thinks are more relevant and to the topic with special preference to the different aspects.

Third chapter deals with the conceptual frame work of the urban environment and the social well-being in details. The conceptualization is very important to conduct relevant and better quality research in the field. Several aspects of the subject are discussed with the reference from the works of experts in the subject and analysis.

The fourth and fifth chapters covers the general and geographical information about the study area selected, including the geographical condition, demographic features, historic background and socio-cultural state of affairs. Chapter four includes the general environmental conditions of the Calicut city explained on the basis of data obtained from the field survey conducted by the author for this research work. And fifth chapter depicts the general environmental characteristics of the city based on the primary data obtained by the field survey.

The sixth chapter observes the spatial pattern of the urban environment and the social well-being derived by the factor analysis in five factors namely material and housing status, family status, education status, security status and migration status and the brief explanation and the graphical representation of the all. And finally some conclusion and suggestions are drawn based on the entire study, analysis and observation followed by bibliography and appendices.