Introduction
INTRODUCTION

Urban areas grow in term of area and population everyday, calling for more resources, better living spaces, and improved administration. In 1950, only 28 percent of the world population was urban. Today, more than half of the world stays in urban areas. A recent NASA satellite study makes an exaggerated estimate that 80 per cent of world's population will live in cities by 2025. India's population by the 2001 census stands at 1,028 million with total urban population of 285 million. Out of total urban population, 108 million or nearly 40 per cent live in the 35 million plus cities. Urban areas change in its structure and morphology in varied manner, owing to natural growth as well as the socio-economic aspiration of the cities. With the rise of global networks of capital, the race between cities to compete has coupled with actions to cope with its own growth.¹

Urbanization is a world wide phenomenon. Increasing urban population and the transforming urban economy lead to changes in the internal structure of the cities. Layout and building, character and intensity of land use and movements of people and goods between these functional areas begin to change. Of these the location, intensity and extent of land under various uses exhibit the greatest amount of variation. For proper growth, an urban place requires certain controls on its changing use of land so that the people may continue to enjoy the maximum benefits of urbanization. City land use pattern is the outcome of the infrastructure facilities and the growth rates of population therein. The nature of land use and
layout is also an expression of the functional gravity of the city and the migration trends.

The continually changing face of the city all over the world is the focus of study in urban geography. The urban geographer’s approach is to study the urban places from two points of view. The first approach undertakes to study the size, function, growth rate and tributary area etc. of cities in the general fabric of settlements. The second approach deals with the internal structure of cities where the focus of study is on the factors like layout and building, and the movement of persons and goods between various functional areas.

Migration to cities is considered to be a serious problem and most of the political parties as well as the municipal bodies are generally interested in reversing this trend of rapid urbanization. But migration is not the only reason for growth of cities and inclusion of the periphery areas are two other reasons for growth of the urban areas. Millions of urban families in the so-called Third World live in homes that lack adequate sanitation and security, have an irregular electricity supply and are built of flimsy materials. Millions of others live in more solid and serviced accommodation but in overcrowded conditions.

The topic has been selected because of the relevance of the topic in the life of urban people. The well-being of people as related to their habitat is one of the major issues of today world. A good city, well designed to the human scale and planned to enhance human happiness and values can promote not only economic but also social goods. One of the major problems is how to create a physical structure that meets the demands of all its inhabitants, including individuals.
groups, enterprises and others to carry out effective city planning. It is necessary to specify the needs of each group as well as the sources of satisfaction, stress and maladaptation and then finding ways of translating these requirements into the living environment. A study based on well-being of people is very important as it helps us to spot out the areas of deprivation and need to suggest certain remedial measures. The topic has also been selected because there have not been many studies on human well-being in small Indian cities and the factors that contribute to increasing well-being in small cities. A survey of the different cities in India would be very revealing.

The rapid urbanization that is taking place in India is not a consequence of social-economic development, but independent of it. Hence it is an urbanization which is not supported by socio-economic infrastructure. As a result of this, there is inadequate economic opportunities, amenities and host of other problems with the result that urban environment becomes largely unfit for human living. The study of the well-being of its inhabitants in relation to social environment becomes a new and promising field of geography. Different areas of Indian cities offer pronounced contrasts of its well-being and degradation of purity and pollution and of fulfillment and deprivation. The variation of well-being over city space is underlying dynamics and fruitful field of study both as an academic exercise and as an exercise having applied value.

The city of Barabanki as demarcated by Barabanki Municipal Board was selected for the study. The selection of the area for research has been guided by the familiarity of the researcher.
Objectives:

In the present work an attempt has been made to study the “Urban Structure and Human Well-being in Barabanki city”. The city has been selected as the study area because earlier work on various aspects of well-being or quality of life has been conducted in large cities only and little attention has been given to smaller cities. In India more than 50 per cent of urban populations reside in small cities. These small cities are no longer small by international standards they would qualify to be big cities. The present study has certain research objectives:

1) To study the physical setting—such as relief features, drainage, climate, and soils and how these factors have helped in making the particular environment and also study the historical background of the area.

2) To assess the demographic and economic structure of the study area like population growth, population density, literacy rate, age composition and occupational structure.

3) How land use functions of study area correlated with the geographical facts.

4) To assess the factors which govern the well-being or social environment measured in terms of different dimensions of the sample households in the different wards of the city.

5) To find out the relationship between spatial structure of land use and well-being in the city.
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**Hypothesis:** The following hypotheses have to be tested:

1) Socio-economic status partly relates to well-being or social environments of the study area.

2) Lower the socio-economic status higher the well being measured in terms of different dimensions. Higher the socio-economic status poor will be the well being or quality of life measured in terms of different dimensions.

**Data Base and Methodology:**

The study is based on primary and secondary sources of data. The data to study the household characteristics as well as conditions of dwelling which form the immediate environment in which population lives were drawn with the help of a questionnaire from a comprehensive household survey of the twenty five wards of Barabanki city. A household has been defined here as consisting of all the persons who occupy the housing unit collectively and join together in making arrangements for providing all the basic necessities.

The survey conducted was a purposeful one. About 23 to 86 households were sample from the different wards. This was because of difference in their size and number of households in the different wards. Stratified random sampling has been done. Keeping in mind that a household selected was a good representation of people belonging to different socio-economic groups. The survey has covered 1200 households. This makes up ten per cent of total households reported in 2001 Census of India. The fieldwork was done during the year 2006-2007.
The sample though is relatively small, but the entire exercise has been executed with utmost caution to eliminate any element of biasness as far as possible. It is expected that the sample is greatly represents the objectives of well being that obtains in the city of Barabanki and can be relied upon for analysis. The variables were chosen as indicators of well-being or social environment. The variables related to describe well being were indicators of material and housing condition, amenities and infrastructure, education, and health. In order to compare wards, the absolute values of variables were not deemed appreciate and therefore were transformed into percentages and ratios.

The present study is empirical in its treatment of the theme of inquiry. A large number of variables containing numerical information on population and its socio-economic status, objective environmental conditions of life and use of city space are analyzed in the present investigation. Thus, considerable data have gone into the analysis. Since there is no single comprehensive source of the required information, various sources both primary and secondary are explored to this effect. The secondary sources include the census of India that has provided information on population and households. This has made it necessary 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. Hence, the basic sources of information have been primary. Therefore, a household sample survey has been conducted to obtain most of the information with regard to the state of well being in Barabanki. Information regarding land use is obtained from draft of master plan for Barabanki from Town and Country planning
organization and updated for supplementing information from the field by the researcher.

The problem of scale:

The problem of scale in geographical analysis by virtue of its generalization in terms of areas relates to the selection of appropriate unit of analysis. The issue involved is not as much of spatial auto correlated as that of level of areal aggregation. Robinson in the context of “ecological fallacy” has pointed out that the extent and sometimes even the direction of relationships among variables may change with the varying size of the unit of analysis. Similar observation is made by McCarty, Hook, and Knox; every change in scale will bring the statement of a new problem, and there is no basis for presuming that associations existing at one scale will also exist at another. Generally, it is suggested that the smaller the unit of analysis, the lesser the distortion of reality. Despite the broad truism of this axiom, scale is subject to restrictions in both upward and downward directions. Observation of characteristics and relationships in the large areas runs the risk of over simplification and fallacious averaging of reality, where as the smaller units of analysis pose the problem of fragmentation as processes and relationships may cross their boundaries.

The soundness of a geographical analysis, therefore, depends on the extent to which a territory is subdivided and the criteria, which are adopted for such a division. But such analyses usually precede the data collected by the administrative apparatus for predetermined administrative units, which show no criteria in their division and aggregation other than physical propinquity.
Therefore, they lack homogeneity in size and composition, and very often- reflected variance in the details of available information at every level of aggregation. This problem was very strongly felt in the present study. Considering the equality of size and homogeneity and contiguity of the socio-economic and physical composition, a mohalla can be considered as an appropriate unit of analysis. But unfortunately, despite the collection of information at the mohalla level through sample survey, most of the relevant information obtained from the various offices was available only at the ward level. The paucity of information at the mohalla level and limitation of time and funds at disposal compelled the researcher to select the ward as a basic organizing unit of most of the political, administrative and cultural activity can be considered as a viable unit of analysis.

Techniques of Analysis:

Scientific inquiry starts with the classification of observation into categories which allow 'the discovery of many more and more important resemblances than those originally recognized'. These categories or constructs can either be theoretically defined or can operationally be constructed. Appropriate operational techniques for this task are found in two research traditions in geography: multivariate regionalization and factorial ecology. The method of multivariate regionalization has developed and spread rapidly after the publication of Ginsburg's *Atlas of Economic Developed*. Many of the earlier attempts have employed simple additive techniques involving ranking and classification of indicators according to some theoretically determined criteria. Later this methodology was modified under the 'social indicators' approach that reacted
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sharply to the overemphasis 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 relationships among these varied indicators of development have become uncertain, procedures of standardization have been adopted so that the transformation of indicators may entail their addition into various categories of the development. Smith provides an excellent example of this procedure. 8

Methodology of factorial ecology developed in the early 1960's has grown out of an older tradition of 'social area analyses in urban geography. Social area analysis defines theoretically the categories by which differences in the population groups can be analyzed over the city space. These constructs as defined by Shevky and Bell are social rank (economic status), urbanization (family status) and segregation (ethnic status). 9 According to them, these constructs reflect societal change from one scale to another. On the other hand 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 regionalization and social area analysis with structure variables according to some theoretical constructs, it allows the constructs to emerge from the interrelations of the variables themselves. It starts with matrix of inter correlations 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 (orthogonal) of each other. By combining standardized
original variables and their loading on computed variables (factors), original variables may be aggregated to exhibit regional distribution of the new variables.

The methods of classification of variables into major dimensions in the two traditions have their relative advantages. The additive methods involve simple calculation and there is little ambiguity involve as all the subjective elements are usually known and made explicit. Moreover, since they imply no assumption of orthogonality of categories or dimension, relationships among them may be evaluated and analyzed. 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. Standardization procedure, usually that of normalization of distribution overcomes much of the loss of information. Nevertheless, simple addition without giving consideration to the significance of the constituent indicators of the category can not represent a major part of the reality. This problem is largely solved by the factor (category) is there 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 factor obtained would confirm with the theoretical relevant or most important aspects of the reality. Generally apart from first factor that is understood as an overall index, all other factor remains uninterpretable. 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 score do not. Thus, at the final stage this analysis ambiguity is involved in the interpretation of the regional pattern of various dimensions.

Social change and its associated ecological processes in the developing city are relatively little understood. Application of any set of theoretical constructs developed in the western world may leads to falls finding and erroneous conclusions. The transformation of a society is the historical and cultural interpretation of the processes of change and it does always follows a familiar course. For instance, the constructs of the social area analyses as developed by Shevky and Bell are based on the historical interpretation of the process of change as it occurred in the western world. Shevky and Bell conceived of social change as a concomitant of increasing societal scale which in itself resulted from changes in the structure of productive activity ‘from agriculture to manufacture. and from manufacture to commerce, communication, transport, and services’. But in the developing countries hypertrophy of urban tertiary sector does not confirm to the urban level of social and economic achievements. In the case of India. Schwartzberg does not fine any strong relationship between the level of development and the size tertiary employment. Moreover, despite and observed trends towards homogenizing personal life in cities, it is noted that transformation of a traditionally caste ridden society in India into a modern class society is rather confused and can not be fully explained with reference to any conventional theoretical model. In the conditions of little understood specificities of urbanization in the developing countries it is, therefore, safe to use such technique of analysis which themselves developed analytical concept and categories. Hence.
the present study has employed the technique of factor analysis to drive ‘meanings’ from virtually ‘unstructured’ variables.

The raw data from different sources is processed and compiled on the ward level which is taken as the unit of analysis. The processing has involved conversion of raw data into derives values as percentages, ratios, densities etc. In some cases weighted indices are also calculated which are explained at appropriate places. However, are also used to classify wards and indicators into groups like standard deviation methods and principal components analysis.

**Principal Components Analysis:**

Geographer are becoming increasingly interested in describing a complex spatial structure of a large number of socio-economic and other variables through some smaller number of underlying dimensions. These underlying dimensions are extracted from the given set of structural variables on the basis of inter-correlations among them. Principal components analysis- a branch of factor analysis – is a technique designed primarily to synthesize a large number of variables into a smaller number general components, which retain the maximum amount of descriptive ability. It permits a more economical description of the given set of structural variables and suggests some underlying dimensions (components), accounting for the statistical relationship among them. Morrison (1967)\textsuperscript{16} has described it as a method to discover those hidden factors which might have generated the dependence or covariance among the variables.

In the present analysis an attempt is made to come out with pertinent and important dimensions of the quality of environment in Barabanki objectively on
the basis of observed inter-relationship among its indicators. To achieve this goal principal components analysis is applied. The principal components analysis provides a method of constructing from a large number of original variables a few new variables which are pair wise uncorrelated (orthogonal). Each principal component is a linear combination of the observed variables and these linear functions are chosen to be orthogonal. Thus, the principal components are composites of orthogonal variables. Since these exits an infinite number of orthogonal bases of a vector space, therefore, in order to provide a unique set of coefficients, the first principal component is defined as the linear combination of various variables which have the maximum variance of all linear functions of the given variables, that are orthogonal to the first principal component loadings. while the measurements of the principal components upon each of the individual unit of observation are called principal component scores. Computation for this analysis has been carried on personal computer using SPSS 11.0 version.

Research Design:

The main interest of this study is in the urban structure and the quality of habitat in which these patterns have developed. Since the evolution of land use and the quality of urban social environment, which is the result of ongoing and over going processes of change and a conditions process of transformation in living conditions, can only be interpreted historically and culturally. The present study is organized into five chapters with the introduction in the beginning and conclusion in the end. The five chapters are intimately interrelated and together interpret the quality of environment in Barabanki.
Chapter one begins with brief description of the location and general geographic features of environment of the city traces its origin and describes its expansion till present times. Chapter two deals with demographic characteristics of the city in the first part while second part of the same chapter discusses about the economic nature of the city. Chapter three traces the work review on the well-being by foreign geographer and Indian as well. Chapter four of this study is divided into three parts- first one mainly concerns with concept and internal layout of the study area and general features of Indian morphology. Second part of this chapter deals with an existing landscape and land use functions of Barabanki city. Chapter five is basically concerned with the ways in which quality of living conditions over city space. The first part of chapter discussed concepts on well-being followed by general characteristics of Barabanki environment and availability of infrastructural facilities and amenities in the city. Second part of this chapter analyses results obtained from principal component analysis as regard the structure and spatial pattern of the livability in the city.
References:


