CHAPTER IV

SPATIAL PATTERN OF QUALITY OF LIFE OF ALIGARH CITY
A great deal of research work has been carried out on the urban relation in the developing world. However most of the earlier works were confined to socioeconomic and technical changes occurring in urban centres. Though a little work has been done on the environmental degradation and quality of life but these investigations were insufficient or rather superficial. These studies failed to explain residential characteristics with regard to environmental quality. This chapter is a humble attempt to analyse spatial pattern of human living conditions in the city of Aligarh. It is a recent field in geography and there had been virtually no studies on quality of life in Indian cities. This work pertains to theoretical and conceptual framework and to identify the main components of quality of life in context to India.

4.1 QUALITY OF LIFE: CONCEPTUAL FRAMEWORK

It has been observed in general that human conditions in urban populace have declined globally and urban environment is becoming hostile to human life with each day passing. The present environmental scenario is posing great hardship to the existing population and the feature of proposed migrants is not very good.¹ The huge urban population with continuous immigrating population to urban centres is causing rigorous strains on the infrastructure facilities and the same to environment
i.e., in terms of environment (geographically). There are two general inputs in quality of urban habitat.

1. Natural
2. Social

In the case of natural degradation the human race has exploited the nature’s gifts without long term thinking and judicious use for instance extensive mining of underground deposits is being carried and the same has brought some of the natural deposits at the brink of extinction. The untoughtful pumping of petroleum is a cause of great concern to the entire world because petroleum deposits are estimated to be available for next hundred years -- then what after hundred years? The same scenario persists in other pockets too.

Now in terms of social, degradation the bulging population is causing tremendous load on the existing social fabrics, i.e., the housing problems, polluted environment, poor medical facilities, inadequate transport facility, poor sanitation, poor law and order condition are few to be listed here.

Qualitative degradation of urban environment has resulted in social malice in developing countries is the result of spontaneous and uncontrolled population that is in no term in harmony with the environment. The unplanned population growth is leading to very complex problems. In the developing urban centres housing
problem is very well complex and of course is subhuman. This problem has given birth to mushroom growth of slum dwellings. The inhabitants of these juggi-jhopri colonies live a very poor quality of life.

The spontaneous population increase compounded with migrating population from rural to urban centres is causing tremendous stress on the existing social infrastructures e.g., housing, sanitation, health, pollution, medical facility, transport, drinking water, electric power etc. Apart from it to accommodate the ever increasing population is putting alarming stress on the environment. The forest covered lands have been cleared to meet human needs which in turn is causing very ill effects on environment. The depleting Ozone layer is one of the ill effects of the said, deforestation.

In context of above sited issues a new research tradition is getting momentum in western world under heading of "quality of life", quality of environment, social indicators, level of livings etc. However the topics and field of researches is different but all the work have singled out a key component - population, related to which development is judged but the picture of urbanisation in developed and the developing countries are entirely different. The urban populace of developed world lead a very distinct qualitative life
and more or less enjoys all the comforts. On the other hand the condition of urban population in developing countries is very bad and the gap between have and have nots is widening.

The well-being of any nation is traditionally assessed in terms of consumption or production of goods and services, average per capita income, unemployment rate and industrial growth. But these days the GNP have become a yard-stick of well-beingness of any nation or country. These can be combined into a consolidated system of accounts. They too have an organising theory expressing basic cause and effect relationships.

The indicators summarise the status of economy by aggregating related data into the GNP revealing whether the economy has grown or declined in balance. The framework is sensitive enough to reveal even a mild contraction or a modest service.5

For all their usefulness, however, the national, regional or local economic criteria are by no means complete measures of the status of the urban environment. They do not include social costs of production. More importantly, national income figures touch only tangentially on most of the essential elements of an adequate urban environment such as decent shelters, suitable community facilities and services, family stability, enriching educational and cultural
opportunities, smooth and safe transportation etc. However, qualitative change in the human conditions and development as accessibility, health, leisure, housing conditions etc. which are not represented by them. Moreover, these measures are also questioned for inherent positive approach which has inculcated the belief that increased technological and industrial development automatically leads to a better life. However, experience of the western countries tells us that despite generating investment and production, industrialisation is also directly responsible for exacerbating problems of health, environmental pollution and recreational opportunity. It is now agreed in human conditions beyond some aggregate measures of levels of consumption and production of goods and services.

In recent years the problem of measuring quality of territories has received much attention, that too in terms of social indicators approach. Knox in his discussion on problem of measurement of improvement in living conditions in context to Britain have given the following operational definitions:

The level of living of persons resident within a given geographical area is constituted by the overall composition of housing, health, education, social status, employment, affluence, leisure, social security and social stability aggregately
exhibited in that area, together with those aspects of demographic structure, general physical environment, and democratic participation which may determine the extent to which needs the desire relating to the foregoing constituents of level of living can be, or are met.8

The expression quality of life or quality of environment to describe the state or change in living condition contain certain objective elements. In authors opinion both are relative terms. A thing for the affluent may be bad but the same may be satisfactory for poor masses, for instance if any local government provides clean public lavatory or develop a public park it may be perceived as development by lower strata of the society while upper crust of the population does not count such things in development. Such things further get complicated in developing countries with special reference to India as its population is formed of various religions, traditions and practices. A mode of life which is considered to be normal among the one section of the population may be untraditional and against the norms for the other group. The deep diversity in beliefs and practices makes the assessment of quality of life to be a daunting job, notwithstanding with this fact the studies of quality of life with few exceptions employee objective variables
which are most accessible and readily available.\textsuperscript{9} The assumption underlying is that correlation between objective and subjective indicators of the quality of life is high enough to validate the result based upon the former.\textsuperscript{10} But there it is scant and emerged imperical evidence to validate this assumption. This reflects its that it is not necessary that as subjective indicators or a detailed work does 100 per cent reflects the real picture of the existing position.\textsuperscript{11} Since none of the arguments regarding relationship between subjective and objective criteria of quality of life is supported by rigorous empirical research, or technique so it is assumed that both types, of criteria should be used in evaluating the quality of life.

It is worthwhile to note that subjective indicators are very effective particularly in western world. There by and large all the people enjoy high quality of life on the otherhand subjective criteria is not so effective in developing countries where poverty is widespread and the gap between have and have no:s is too large. Recently a research work carried out in India on quality of life, its bold results read as 40% of people in rural areas live minimum standard while 50% people in urban areas comes in this category. A very hard fact that was reflected while this research work was done was that one per cent of urban people lead a
unbelievable below standard or rather sub-human life. On the otherhand it does not hold for rural belt. Majority of urban areas are deprived of basic facilities which ought to be provided by all municipal corporation i.e., drinking water, sanitation, power supply, mode of transports, roads and medical facilities are few to be listed but the most remarkable point, is that inspite of getting very little facilities, the population does not at all consider themselves to be deprived of these facilities. The reason behind this harsh fact is that, as they do not hope any improvement of their lots. So, if not in conditions of the deprived world, then positively, in the conditions of the poor countries the concept of quality of life becomes a vague and ethereal entity.

Knox in his discussion on the evaluation of quality of living suggests many objective possibilities. He points out that well-being means 'the satisfaction of needs and wants of populations. It can be measured by evaluating magnitude of needs. The one possibility to evaluate needs is to define minimum quantities and qualities socially sanctioned, culturally desirable and expertly recommended. However, according to him, 'such an approach may be seen by some to be unjustifiable elitist'. In the context of the poor countries as India where scarcity is prevalent such an approach has
an added disadvantage of simplistic interpretation of quality of living by not recognising significant distributive inequalities. The second alternative is to analyse factors which generate needs. But it is not possible in relationships between factors and different categories of needs in terms and needs. Consumer behaviour is another alternative is particularly not applicable in the situation of the developing countries. As such any demand for services and goods reflects the consumer behaviour of an affluent minority rather than that of general population. Knox concludes his discussion by observing that 'The present level of sophistication in social reporting falls considerably short of measuring levels of satisfaction against specific parameters of need, however defined'. Therefore, a study in the quality of life at present 'should be content with the comparative rather than absolute measure's. In the conditions of widespread scarcity and under development in developing countries, any absolute measure of level of satisfaction will show a general unsatisfactory situation and will fall short of recognising horizontal inequalities in the quality of life.

4.2 ALIGARH: GENERAL CHARACTERISTICS OF THE ENVIRONMENT

Aligarh city can not be placed in list of industrial town, yet unemployment is small. In past few
decades there had been appreciable migration of people from adjoining villages to Aligarh and has resulted in rapid growth of population. As the pace of development was not in harmony with the growth in population has resulted indepleted available infrastructure and amenities consequently quality of life has progressively declined in the city. The first and the basic frame of environment in which an individual lives is his house. Housing condition is mirror of ones material status. It also reflects whether improvement or deterioration of general quality of life has taken place.

The studies have depicted that on an average six persons come against one house. This datum shows a poor quality of life because 25% population of Aligarh city lives in houses having more than 3 rooms. This on the otherhand shows that approximately 75% of population is living in 1-2 room houses because of rapid pace of urban growth have further put great stress on existing dwellings. The housing problem is also attributed to the history of Aligarh. In the past, building of houses was solely a private venture. The houses in past were constructed to negotiate one’s own needs or sometimes to lodge, government officers. However after implementation of central rent act that comfers certain powers to government machinery for allotting the accommodation and fixing the rent, discouraged private invertors due to
low rent fixed and lesser incentive available to them. In post 1994 era many new departments and offices were set-up in the city that resulted in the abrupt increase of population.

With the shortage of housing sectors the density has increased. The National growth of population compounded with immigration the open spaces around the houses has literally disappeared. This has resulted in congested housing structures. This scenario is very much prevalent in inner and old part of the city. The number of houses per hectare is maximum in this portion of the city. The migration of rural population to Aligarh city has created a new and peculiar problem as most of the immigrants come from poor economical background so they have very minimum requirements. They prefer to live in group of 3-4 in a single room, thus further crowding. It has been also observed that these poor immigrants construct juggi-jhopri on any public land near to their working place. It is interesting to note that the old city generally has two or three storeyed buildings, but the population concentration is the highest in this area. This area has highly congested localities where the density per hectare is quite high. Aligarh is poor in terms of infrastructural facilities which constitute an important part of the environment. These facilities vary both in
Heavy traffic jam is a common sight in the city.
quality and quantity over the space. The conditions of roads in Aligarh are very bad except the University area where the roads are comparatively good here. In Aligarh the worn-out roads, studded with pot holes which are narrow. The total road length is 475.08 km. pakka (metalled) in the city. But the situation is still more critical in the inner area of the city. In this area due to congestion, building extension or improvement of road system is impossible and the problem of parking is serious. Traffic jam in the city centre particularly in the market areas is common experience. Though the government does not provide means of transportation within the Aligarh city but nevertheless, the private owned rickshaw, Tanga, three wheelers, to carry the masses from one place to another ply on the roads.

As regards the water and electricity supply the situation is not satisfactory. Spatial distribution of these facilities may be put as uneven. The development of these basic amenities is lagging far behind the growing demand. In the inner and outer residential zones poor people continue to use oil lamps, and depend for water supply on public hydrants. It is found that only 65 per cent of the total households are supplied with protected water.

In the case of electric supply it is found that only 49 per cent population benefits from it, i.e. only
Due to defective drainage system of the city even in the posh localities like Marris Road where mostly higher Income households reside waste water from the open drains is found standing on the main Road.

Heaps of garbage along the road side is a common sight.
23,136 households have domestic connections. The condition of road lighting is still poor. There are about 6,658 total of road lightning. There are about 14 points per sq kms. The figure point out a low level of development of road lighting system. Besides being inadequate the distribution of this amenity is as unplanned and unsystematic as that of any other public facility. Even a casual observer can note that road lamps are not abundant but they are scant along the road and non-existent in the other areas.

The swerage and sanitation facilities, one of the vital elements of the quality of the environment is very unsatisfactory. Stagnant pools of water, and flooding of low lying residential areas by rain water are a common sight. Drainage system is non-existent in outer poor residential areas and is very poorly developed in the inner areas of the city. Disposal of household refuse and garbage also present problem. Heaps of garbage in residential localities is a familiar sight. Septic tanks are found in new and rich residential areas. About 55 per cent of the population have the facility of septic tanks, 25 per cent population utilizes manual service latrine facilities, while 20 per cent are compelled to go to road side or fields. The enormity of the problem, emerges from the fact that only 80 per cent have this facility and out of this 70 per cent have to
share latrines with other households. Human excreta and piles of various refuse heaped on the roadside is a common sight. One can well understand the effect of this unhygienic situation on health.

The quality of life is also determined by the open and green areas in urban environment. The old city households, some have open spaces while others don't have. But in the civil lines the houses are big and have sprawling lawns and open spaces.

The quality of life of a settlement is also related with the degree of development and distribution of public facilities. The distribution of the public facilities i.e., schools, medical centres and recreation facilities are unevenly distributed. Educational institutions including nurseries and schools are neither adequate in number nor in satisfactory condition. There are 142 primary schools, 8 junior or secondary and middle schools, 12 high schools, 9 higher secondary schools, intermediate college. Most of the schools are located in the city in inappropriate and old buildings. Two shift system is quite prevalent and primary schools are mostly run by municipal corporation. The distribution of school per 10,000 population is 0.44, (matriculation), higher secondary intermediate/
PUC/Junior College per 10,000 population is 0.28, primary school per 10,000 population 4.43 and junior secondary per 10,000 population is 0.25.

The medical facilities are also lacking. In this city of almost 6 lakhs population, there are only one 69 hospital and dispensaries including medical college. These medical units have 4,672 beds. Almost all the wards of the city have some sort of medical facility, but these facilities are short of demand. On an average 7.7 beds per 1000 population.

Like medical facilities recreational and leisure facilities as cinema halls, hotels and restaurants are unevenly distributed and there are 14-15 cinema halls and 35 hotels and restaurants. The number of these establishments as well as their standard is low. Cinema halls are almost situated in the centre of the city but restaurants are usually found in the peripheral areas and in civil lines.

It clearly emerges from the above study that the urban environment in Aligarh has degraded and that housing, city infrastructure, civic amenities (which condition the urban environment), show spatial disparities in their distribution. Contrast between the city core and civil lines residential areas is striking. But differences between densely populated areas themselves are quite remarkable. The old middle class
residential areas around the core showing a moderate level of public amenities and infrastructure, the civil lines and adjoining privately built colonies, housing professionals having abundant amenities, all these present the picture of disparities which need careful examination and analysis.

4.3 VARIABLE SELECTED

35 variables are selected to analyse the quality of life in Aligarh city. The author thinks the variables are selected are indicative of the quality of life. These variables reveals processes, states and facts of environment of the city. They relate to five sets which encompass all significant material, infrastructural, housing and other elements of environment of the wards. These are material status, health and nutritional status, cultural level, housing standards and territorial stress (Appendix E) Material status includes eleven variables. Material status depicts the well-being of the population which to a great extent reflect the general quality of life in the city. The set of health and nutrition status is comprised of six variables which shows medical facilities and general health of population and available medical facilities to the population. The variables of cultural level are divided into two sub-sets: education and leisure each of which is made up of two variables. The set of housing
standards is the largest one consisting of nine variables representative of various aspects of this prime component of the environment of a settlement. The set has two sub-sets: quality of housing and building material. The first sub-sets has seven variables relating to facilities available in the houses and the second sub set consist of two variables of the material used in the construction of houses. The last set of territorial stresses is composed of two sub-set crowding status and spatial characteristic. The first sub-set consist of 2 variables revealing situation of pressure on the living space within houses. The second sub-set has three variables reflecting situation of the ward in terms of congestion, density and open spaces.

The variables should be such, that exactly reflect quality of life and same attempt is done on the part of author in selecting the variables. But inspite of best efforts there are certain limitations like availability of information at ward level. Moreover restraint is also exercise in selecting such variables which are represented by one or more other important variables. In some cases intermediate categories of variables are ignored, but even then it is believed that selected variable reasonably reflects the quality of life.
4.4 FACTOR STRUCTURE

Thirty five variables (indicators) representing the socio-cultural, infrastructural and physical aspects were taken for factor analysis (Table XVIII-XXII). These variables have been bunched under such five sets as material status, health and nutritional status, cultural level, housing standards and territorial stress. Factor analysis of the thirty five variables which determine the quality of life in Aligarh has yielded five significant factors which have been named as material status and housing conditions. Territorial stress, amenities and infrastructure, health and survival and education and recreation. These five factors together explain 85.18 per cent of the total variance in quality of life. The contribution of each of the five factors in total (85.18 per cent) does not vary greatly between them. The first factor contributes 22.84 per cent, the second 18.95 per cent, the third 16.35 per cent and the fourth 14.11 and the fifth 12.90 per cent to the quality of life making a total of 85.18 (Table XVII).
Table XVII

Environmental Structure of Aligarh

<table>
<thead>
<tr>
<th>Factors</th>
<th>Per cent of Total Variance explained in quality of life</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Material and Housing condition</td>
<td>22.84</td>
</tr>
<tr>
<td>2. Territorial stress</td>
<td>18.95</td>
</tr>
<tr>
<td>3. Amenities and infrastructure</td>
<td>16.38</td>
</tr>
<tr>
<td>4. Health and survival</td>
<td>14.11</td>
</tr>
<tr>
<td>5. Education and Recreation</td>
<td>12.90</td>
</tr>
</tbody>
</table>

Per cent of total variance explained by 85.18% five factors

The loadings of thirty five variables reveal that some of them are important in explaining the material status and housing conditions and some others territorial stress, amenities and infrastructure etc., but there are some indicators which are important in more than one factor. For example monthly average income is important in the first factor, i.e. material and housing conditions, in the third factor i.e. amenities and infrastructure, and in the fourth factor i.e. health and survival.

4.4.1 Factor 1: Material and Housing conditions of the sampled households

Factor 1 which explains 22.84 (Table XVII) per cent variance in the quality of life can be identified as the dimension of material and housing conditions. The
housing and material conditions are determined largely by fourteen out of thirty five variables (Table XVIII) ten of which relate to material possessions namely average monthly income, black & white television ownership, coloured television ownership, refrigerator ownership, washing machine ownership, airconditioner ownership, generator ownership, cooler ownership and automobile ownership and other four to housing conditions namely common kitchen, common bathroom, ferro-concrete and brick houses and one relate to cultural level namely nurseries. Among the variables loading high on this factor common bathrooms (0.89884), common kitchens (0.81496).

Table XVIII

Material and housing conditions of the sampled households

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variable Name</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>MATERIAL STATUS</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Monthly income (average)</td>
<td>-0.77559</td>
</tr>
<tr>
<td>2.</td>
<td>Black and White T.V. ownership</td>
<td>-0.75750</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Colour T.V. ownership</td>
<td>-0.73971</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Refrigerator ownership</td>
<td>-0.71635</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Video ownership</td>
<td>-0.55305</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Airconditioner ownership</td>
<td>-0.60736</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
</tbody>
</table>
7. Washing Machine ownership (per cent households) -0.70235
8. Generator ownership (per cent households) -0.51015
9. Cooler ownership (per cent households) -0.74351
10. Telephone ownership (per cent households) -0.35668
11. Automobile ownership (per cent households) -0.78376

CULTURAL LEVEL

I. Education:
12. Nurseries (per 1000 of population) -0.54281
13. Schools (per 1000 of population) -0.35132

II. Leisures:
14. Cinemas (per 1000 of population) -0.12792
15. Restaurants (per 1000 of population) -0.19427

HEALTH AND NUTRITIONAL STATUS

16. Medical practioners (per 1000 of population) -0.28017
17. Caloric Intake (per caput) -0.31899
18. Protein Intake (per caput) -0.29146
19. Birth Rate (per 1000 of population) 0.28594
20. Death Rate (per 1000 of population) -0.14618
21. Infant Mortality (per 1000 of population) 0.09247

HOUSING STANDARD

I. Quality of Housing:
22. Number of Kitchens (per 100 houses) -0.18026
23. Common Kitchens (per 100 houses) 0.81496
24. Number of Bathrooms (per 100 houses) 0.13369
25. Common Bathrooms (per 100 houses) 0.89884
26. Water Connections (per 100 houses) -0.22644
27. Electric Connections (per 100 houses) -0.27318
28. Gas Connections (per 100 houses) -0.31828

II Building Materials:
29. Ferro-concrete and Brick Houses (per cent occupied houses) -0.41363
30. Mud, Wood, Thatched Houses -0.14165

TERRITORIAL STRESSES
I Crowding Status:
31. Population per room 0.14180
32. Room Density Ratio -0.28618

II Spatial Characteristics:
33. Congestion Ratio (houses per hectare) 0.19253
34. Population Density (population per hectare) 0.16151
35. Open Spaces (per cent area to total area) -0.20743

Per cent of total variance explained 22.84

Source: Based on field Survey (1995).

load positively. These emphasises poor housing with increased pressure on ingredient housing facilities. This is further emphasised by the moderate negative but important of ferro concrete and brick houses (good quality) houses (-0.41363).

All the variables of material possession load high but negatively on this dimension of the quality of life.
The highest negative loading is registered by Automobile ownership (-0.78376). This is followed by average monthly income (-0.77559) Black and white television ownership (-0.75750). This is followed by cooler ownership (-0.74351), Colour TV ownership (-0.73971) and refrigerator ownership loads (-0.71635). Other material possession which loads high but negative are washing machine ownership (-0.70235), Air Conditioner ownership (-0.60736). This is followed by moderate loading of video ownership VCR (-0.55305), Generator ownership also loads moderate but negative (-0.51015). It is interesting to note that nurseries also load negatively (-0.54281) on this dimension. Though, their loading is not very high, yet it is significant enough to suggest negative association of educational facilities with this factor.

This dimension of the quality of life places emphasis on the material possession and the housing environment as the prime components of the environment against which the livability of the habitat can be judged. The wards scoring high on this factor (material and housing conditions) are those where level of material status is low and housing facilities are poor. On the contrary, wards scoring low are those where affluent population lives in exclusive houses provided with good facilities (Appendix-E).
The lower income households live in mud/thatched house in Bhamola Mafi Mohalla.

Houses constructed of bricks and ferro concrete belonging to higher income households in Sir Syed Nagar Mohalla.
Fig. 17 shows the spatial pattern of the quality of life as expressed by the dimension of material and housing conditions. Out of forty wards seven wards exhibit high factor scores i.e. low material and housing standard, twenty two medium standard. Eleven wards exhibit low factor scores which reflects on their high material and housing status. Spatial pattern of wards according to these categories clearly distinguishes the old and the new city. The old city shows a material and housing standard that ranges from the low to moderate with few exceptions while the civil lines or peripheral areas shows a range from high to moderate standard. It may be mentioned here that peripheral areas of Indian cities were originally inhabited by low caste people and it is a recent phenomenon that they are being selected for high quality residential colonies. This explains the high and moderate standard obtaining at one and the same time in peripheral areas of Aligarh.

The low standard areas, that is wards registering high factor scores on this dimension (material and housing conditions) form two distinct clusters. The most significant cluster in terms of the size of the population involved is that which is found in the old city. This cluster includes wards, twenty four, twenty
ALIGARH CITY
MATERIAL AND HOUSING CONDITIONS

-FACTOR SCORES
+1.25 HIGH
-1.25 MEDIUM
LOW

SOURCE: BASED ON FIELD SURVEY, 1995

FIG. 17
five, twenty six, Thirty one and thirty seven. The other cluster of remaining three wards 22,23,32 on the periphery of south and west.

Wards of moderate material and housing conditions have a tendency of concentration in the old city, but form two clusters. Wards of medium standard in the old city form an cluster around the central area of low standard covering ward number 13,16,17,18,19,21,27,28, 30,33,34,35, and 39. Apart from this peripheral area of medium standard in the west north west and west-west north the other peripheral wards of medium standard are found east east south and east south east and south-south east.

Excluding high standard ward of 14 and 36; all other wards with high standard are found away from the city centre towards east. These include ward number 3,5,7,8,9,10,11 and 12.

A comparison of this distributional pattern of the material and housing standard suggests that this dimension of the quality of life is strongly correlated with the socioeconomic and housing status of the population.
4.4.2 Factor 2: Territorial stress of the sampled households

Factor 2 is the second important dimension of the quality of life and explains almost as much total variance (18.95) as the first factor (Table XVII). Territorial stress is mainly determined by seven variables namely number of kitchen, number of bathrooms, Ferro concrete and brick houses, population per room, room density ratio, congestion ratio and population density (Table XIX). The variables which load high either positively or negatively express the interrelationships of crowding and spatial and housing characteristics of the wards. The sign as well as magnitude of loadings of these variables identify this factor as the dimension of territorial stress. The highest positive loading is shown by population per room (0.93145) which is followed by population density (0.92843). An equally high positive loading is shown by house density (0.91084). The room density ratio shows a remarkably high but negative loading (-0.67905) which is consistent with the sign of other densities (Table XIX). The high loadings of these variables pertaining to the
residential densities express the stress caused by the living space of the city on its population. On the other hand the negative loading of ferro-concrete and Brick houses (-0.74541) reveals that territorial stress is severe in areas of medium quality housing. This is because the ferro-concrete houses are generally spacious provided with all the housing facilities and occupied by small households. This factor also shows high negative loadings of kitchens and bathrooms emphasising lack of housing facilities.

Considering the magnitude and sign of loading by significant variables, this factor of the quality of life indicates an environment characterised by crowding, congestion and lack of housing facilities due to scarcity of living space. Thus, high factor scores by wards reveal high territorial stress therein and vice-versa.

Territorial stress as revealed by the fig.18 makes a clear distinction between the core and periphery.
<table>
<thead>
<tr>
<th>S.NO.</th>
<th>VARIABLES</th>
<th>FACTOR LOADING</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><strong>MATERIAL STATUS</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Monthly income (average)</td>
<td>-0.30705</td>
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<td>2.</td>
<td>Black and White T.V. ownership</td>
<td>-0.15973</td>
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<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Colour T.V. ownership</td>
<td>-0.10483</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Refrigerator ownership</td>
<td>-0.13544</td>
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<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Video ownership</td>
<td>-0.03500</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Airconditioner ownership</td>
<td>-0.022791</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Washing Machine ownership</td>
<td>-0.12299</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Generator ownership</td>
<td>-0.14646</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Cooler ownership</td>
<td>0.35174</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Telephone ownership</td>
<td>0.09030</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Automobile ownership</td>
<td>0.17503</td>
</tr>
<tr>
<td></td>
<td>(per cent households)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>CULTURAL LEVEL</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I. Education:</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Nurseries (per 1000 of population)</td>
<td>-0.13153</td>
</tr>
<tr>
<td>13.</td>
<td>Schools (per 1000 of population)</td>
<td>0.07078</td>
</tr>
</tbody>
</table>
II. Leisures:

14. Cinemas (per 1000 of population) -0.18193
15. Restaurants (per 1000 of population) -0.16382

HEALTH AND NUTRITIONAL STATUS

16. Medical practitioners
   (per 1000 of population) 0.07219
17. Caloric Intake (per caput) -0.03806
18. Protein Intake (per caput) 0.05349
19. Birth Rate (per 1000 of population) 0.19633
20. Death Rate (per 1000 of population) -0.06563
21. Infant Mortality (per 1000 of population) 0.27107

HOUSING STANDARD

I. Quality of Housing:

22. Number of Kitchens (per 100 houses) -0.79154
23. Common Kitchens (per 100 houses) 0.15948
24. Number of Bathrooms (per 100 houses) -0.89695
25. Common Bathrooms (per 100 houses) 0.18356
26. Water Connections (per 100 houses) -0.17237
27. Electric Connections (per 100 houses) -0.08349
28. Gas Connections (per 100 houses) -0.09542

II Building Materials:

29. Ferro-concrete and Brick Houses
   (per cent occupied houses) -0.74541
30. Mud, Wood, Thatched Houses -0.14487
TERRITORIAL STRESSES

I Crowding Status:

31. Population per room 0.93145
32. Room Density Ratio -0.67905

II Spatial Characteristics:

33. Congestion Ratio (houses per hectare) 0.91084
34. Population Density (population per hectare) 0.92843
35. Open Spaces (per cent area to total area) -0.21389

Per cent of total variance explained 18.95

Source: Based on field Survey (1995).

There are eleven wards of high territorial stress, twelve wards show a low territorial stress, remaining seventeen wards are characterised with a medium level of territorial stress.

The wards exhibiting low territorial stress i.e. low population density and low congestion are all concentrated in the eastern and western peripheral zones. However, these low territorial wards are separated by the north ward and southward extension of high and medium territorial stress wards. In most of the wards of the eastern peripheral zone which includes ward number 5, 6, 7, 8, 9 and ward number 10, territorial stress is low because of spacious houses provided with all housing facilities, small room density and low housing
The lower income households do not have open space in their house in the Talab sabir khan *Mohalla*.

The higher income house hold have lawns in the front in Medical Colony area.
ALIGARH CITY
TERRITORIAL STRESS

FIG. 18

FACTOR SCORES

HIGH

MEDIUM

LOW

SOURCE: BASED ON FIELD SURVEY, 1995
congestion together with the consequent low population density of the wards. On the other hand, the low territorial stress in the western periphery which includes, ward fifteen, ward twenty is mainly due to sheer size of the wards. In almost all the wards of peripheral zone population has concentrated in few small pockets. In ward twenty, and ward thirty two the quality of housing is low and houses are small but the resulting values of population density and housing congestion are so low that these wards emerge as low territorial stress areas.

The wards of medium level of territorial stress areas are 1,2,4,12,13,14,16,19,21,23,27,29,35,36,38, and ward number 39. The high territorial stress areas are exclusively a feature of the old city. These include ward 17,18,22,25,26,28,30,31,33,34 and ward number 37. The concentration in the core is in the north-south direction through the centre of the city. These wards show a high level of stress mainly due to high densities as well as low housing facilities. But in the south western wards which are ward number 30,31,33, and 34 the population density figure range from very low to low, therefore high stress result from high room density and adverse housing status which range from low to moderate.

In general, the territorial stress in Aligarh is high in the core and gradually cases out away from the
city centre. In this way, the spatial pattern of the territorial stress in this city is in close conformity with the general distribution of population density in the cities which is so very well observed and analysed cross culturally.\textsuperscript{17} 

4.4.3 Factor 3: Amenities and Infrastructure of the sampled households

This factor explains 16.38 per cent variance of the quality of life in Aligarh (Table XVII). It can be described as the dimension of overall quality of life as variables representing all the five sets of variables namely material status, health and nutritional status, cultural levels, housing standards, and territorial stress load significantly on this factor. However, considering relatively high loadings. It is identified as the dimension of amenities and infrastructure. The majority of high positive loadings on this factor are by facilities like telephone connections (0.94108), electric connections (0.87270), water connections (0.77092), and gas connection (0.71100) (Table XX). Open spaces are also positively associated with this factor and load moderately high (0.58970). The only significant negative loading is shown by low quality houses (mud, wood, thatched) which load as high as (-0.75156). The secondary important loadings are registered by the variables of material status as cooler ownership
Table XX

Amenities and Infrastructure of the sampled households

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>VARIABLES</th>
<th>FACTOR LOADING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Monthly income (average)</td>
<td>0.44972</td>
</tr>
<tr>
<td>2.</td>
<td>Black and White T.V. ownership (per cent households)</td>
<td>0.35714</td>
</tr>
<tr>
<td>3.</td>
<td>Colour T.V. ownership (per cent households)</td>
<td>0.34522</td>
</tr>
<tr>
<td>4.</td>
<td>Refrigerator ownership (per cent households)</td>
<td>0.41097</td>
</tr>
<tr>
<td>5.</td>
<td>Video ownership (per cent households)</td>
<td>0.10151</td>
</tr>
<tr>
<td>6.</td>
<td>Airconditioner ownership (per cent households)</td>
<td>0.06717</td>
</tr>
<tr>
<td>7.</td>
<td>Washing Machine ownership (per cent households)</td>
<td>0.22676</td>
</tr>
<tr>
<td>8.</td>
<td>Generator ownership (per cent households)</td>
<td>0.41350</td>
</tr>
<tr>
<td>9.</td>
<td>Cooler ownership (per cent households)</td>
<td>0.45270</td>
</tr>
<tr>
<td>10.</td>
<td>Telephone ownership (per cent households)</td>
<td>0.94108</td>
</tr>
<tr>
<td>11.</td>
<td>Automobile ownership (per cent households)</td>
<td>0.23503</td>
</tr>
</tbody>
</table>

CULTURAL LEVEL

I. Education:

12. Nurseries (per 1000 of population) -0.05153
13. Schools (per 1000 of population) 0.16078

II. Leisures:

14. Cinemas (per 1000 of population) 0.20193
15. Restaurants (per 1000 of population) 0.26382

HEALTH AND NUTRITIONAL STATUS

16. Medical practioners (per 1000 of population) 0.24364
17. Caloric Intake (per caput) 0.23751
18. Protein Intake (per caput) 0.02622
19. Birth Rate  
(per 1000 of population)  
-0.13003

20. Death Rate  
(per 1000 of population)  
-0.28680

21. Infant Mortality  
(per 1000 of population)  
0.25824

**HOUSING STANDARDS**

I. Quality of Housing:

22. Number of Kitchens  
(per 100 houses)  
0.33474

23. Common Kitchens  
(per 100 houses)  
-0.07736

24. Number of Bathrooms  
(per 100 houses)  
0.36417

25. Common Bathrooms  
(per 100 houses)  
-0.09111

26. Water Connections  
(per 100 houses)  
0.77092

27. Electric Connections  
(per 100 houses)  
0.87270

28. Gas Connections  
(per 100 houses)  
0.71100

II Building Materials:

29. Ferro-concrete and Brick Houses  
(per cent occupied houses)  
0.33659

30. Mud, Wood, Thatched Houses  
-0.75156

**TERRITORIAL STRESSES**

I. Crowding Status:

31. Population per room  
0.08451

32. Room Density Ratio  
0.18918

II. Spatial Characteristics:

33. Congestion Ratio  
(houses per hectare)  
0.21102

34. Population Density  
(population per hectare)  
0.16785

35. Open Spaces (per cent area to total area)  
0.58970

Per cent of total variance explained  
16.38

**Source:** Based on field Survey (1995).
(0.45270), monthly income average (0.44972), generator ownership (0.41350), refrigerator ownership (0.41097), housing facilities as bathrooms (0.36417), black and white TV ownership (0.35714), colour television ownership (0.34522) and housing facilities as bathrooms (0.36417) kitchens (0.33474); and by the quality of houses as ferro-concrete houses (0.33659).

This dimension thus places emphasis on the essential amenities of urban life. The most significant among these is the loading by open spaces which includes parks, green areas etcetera. with the increasing congestion, expansion of built up area and pollution of the environment the open spaces are becoming increasingly important from the view point of sun and air. Relatively weak but significant loadings by housing facilities again underlines the importance of housing environment that is basic unit of a settlement as the habitat. The low positive associations of the variables of material status with this factor are significant enough to point out that a good environment in terms of amenities and infrastructure as well as quality of life is associated with the affluence. Thus, the wards showing high factor scores on this dimension are those where development of amenities and infrastructure is high. These are wards of good quality houses and have plenty of sun and clean air on the otherhand, wards
A proper ventilated kitchen showing the use of L.P.G. in higher income household in the Saheb Bagh *Mohalla*.

A Poor family in the Sarai Nawab *Mohalla* cooking food on wood in their multipurpose one room.
placed lowly on this dimension are those with poor level of amenities and infrastructure and low quality of housing.

Fig. 19 reveals the spatial patterns of the quality of environment in the city as expressed by the status of wards with regard to amenities and infrastructure. The high positive scores or a high level of amenities and infrastructure are registered by nine wards. The distribution of these wards show a clear pattern of the concentration, moderate tendency wards are coinciding with the wards of high socioeconomic status. The high factor scores are found in the North-Eastern periphery. These parts are in fact residential areas of high socioeconomic status groups. They are separated by moderate factor score wards, ward number 13, 14, 16, 17, 18, 19, 38 and ward number 39. Twenty five ward despite moderate scores on the socioeconomic status show a low level of development of amenities and infrastructure. Ward number 27, 34, 36 and 40 which have high scores on the socioeconomic status show a moderate level of development of amenities and infrastructure. However, the factor scores of these wards are quite high and marginally below the lower limit of high category (Appendix-E). Considering these facts it can be
ALIGARH CITY
AMENITIES AND INFRASTRUCTURE

FACTOR SCORES

HIGH
MEDIUM
LOW

SOURCE - BASED ON FIELD SURVEY, 1995

FIG. 19
concluded that the high level of amenities and infrastructure is exclusively confined to the wards of high socioeconomic groups in eastern periphery.

Twenty one wards show medium level of this dimension of the quality of life. These form three distinct zone surrounding the ward of low status in the core. This zone includes ward number 16,19,39,36, and ward number 21. The second area of medium level is located in the southern part of the city. The last area of medium level of amenable and infrastructural development includes ward number 15,20,23, located on the western periphery of the city. It must be noted that the ward number 27,34,36, and ward number 40 ward classified in the 'medium level' of amenities and infrastructural facilities are only slightly low in actual values from the areas classified under 'high level'. In fact which is reflected in the high socioeconomic status of these wards.

There are ten wards which show a low level of environmental quality measured in terms of amenities and infrastructure. The wards can be grouped in two categories according to their location. First category includes ward number 24,25,26,31,33, and ward number 37. These wards are the part of the city core. This area is characterised with low and moderate socioeconomic as
The lower income households fetch water from the roadside water connections in sarai miyan Mohalla.

The lower income households do not have bathroom facility in their house, so this man is taking bath along the roadside.
well as housing status. This is a very densely populated area and lack of amenities such as water supply etc. are indicative of low level of quality of life in this area. The next group includes ward number 22, 29, and 32 situated in the peripheral zone of the city especially in the south west periphery which has shown a low socioeconomic, housing and material status. These are areas where every type of amenity is virtually absent and these areas are without supply of water, electricity and other amenities.

4.4.4 Factor 4: Health and survival of the sampled households

Factor 4 accounts for 14.11 per cent of total variance and contributes almost as much as factor 3 (Table XVII). By virtue of high loadings of variables relating to level of nutrition and medical facilities as well as vital demographic processes, this factor emerges as the health and survival dimension of the quality of life. This dimension is largely controlled by ten variables namely monthly income, black and white TV ownership, coloured TV ownership, number of medical practitioners, caloric intake, protein intake, birth rate, infant mortality, death rate, and number of nurseries (Table XXI). Majority of the significant loadings on this factor (health and survival) have negative signs.
Those variables which do not have negative signs, they are in conformity with the general direction by the negative signs of other variables. The highest positive loading is shown by the caloric intake (0.98338) followed by protein intake (0.94775) (Table XXI). The significance of high and positive loadings of the intake variables is further reinforced by the positive small loadings by monthly income average (0.40354) and Television ownership, black and white (0.34269) coloured TV (0.32020) revealing high material status of the population of the wards.

All the three vital demographic variables, infant mortality (-0.76370), death rate (-0.75439) and birth rate (-0.69439) load negatively high on this factor (health and survival). This can be understood in the world perspective of population dynamics. High birth, death and infant mortality rate are characteristic features of the underdeveloped countries. These are associated with the widespread hygiene, and scarcity of medical services and medicine. On the other hand in the developed countries, irrespective of their socioeconomic and political system, birth, death and infant mortality rates are considerably low. It is found that as the level of well-being of population increases, these rates tend to decline. Therefore, because of its association
Table XXI

Health and survival of the sampled households

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>VARIABLES</th>
<th>FACTOR LOADING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>MATERIAL STATUS</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Monthly income (average)</td>
<td>0.40354</td>
</tr>
<tr>
<td>2.</td>
<td>Black and White T.V. ownership (per cent households)</td>
<td>0.34269</td>
</tr>
<tr>
<td>3.</td>
<td>Colour T.V. ownership (per cent households)</td>
<td>0.32020</td>
</tr>
<tr>
<td>4.</td>
<td>Refrigerator ownership (per cent households)</td>
<td>0.21808</td>
</tr>
<tr>
<td>5.</td>
<td>Video ownership (per cent households)</td>
<td>0.05377</td>
</tr>
<tr>
<td>6.</td>
<td>Airconditioner ownership (per cent households)</td>
<td>0.05448</td>
</tr>
<tr>
<td>7.</td>
<td>Washing Machine ownership (per cent households)</td>
<td>0.23140</td>
</tr>
<tr>
<td>8.</td>
<td>Generator ownership (per cent households)</td>
<td>0.12459</td>
</tr>
<tr>
<td>9.</td>
<td>Cooler ownership (per cent households)</td>
<td>0.11624</td>
</tr>
<tr>
<td>10.</td>
<td>Telephone ownership (per cent households)</td>
<td>0.08991</td>
</tr>
<tr>
<td>11.</td>
<td>Automobile ownership (per cent households)</td>
<td>0.19519</td>
</tr>
<tr>
<td></td>
<td><strong>CULTURAL LEVEL</strong></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Nurseries (per 1000 of population)</td>
<td>0.38567</td>
</tr>
<tr>
<td>13.</td>
<td>Schools (per 1000 of population)</td>
<td>0.09444</td>
</tr>
</tbody>
</table>
II. Leisures:

14. Cinemas (per 1000 of population) 0.16768
15. Restaurants (per 1000 of population) 0.31452

HEALTH AND NUTRITIONAL STATUS

16. Medical practitioners
   (per 1000 of population) 0.35361
17. Caloric Intake (per caput) 0.98338
18. Protein Intake (per caput) 0.94775
19. Birth Rate (per 1000 of population) -0.69439
20. Death Rate (per 1000 of population) -0.75439
21. Infant Mortality (per 1000 of population) -0.76370

HOUSING STANDARD

I. Quality of Housing:

22. Number of Kitchens (per 100 houses) 0.25946
23. Common Kitchens (per 100 houses) -0.06329
24. Number of Bathrooms (per 100 houses) 0.26544
25. Common Bathrooms (per 100 houses) -0.08316
26. Water Connections (per 100 houses) 0.18175
27. Electric Connections (per 100 houses) 0.25929
28. Gas Connections (per 100 houses) 0.34032

II Building Materials:

29. Ferro-concrete and Brick Houses
   (per cent occupied houses) -0.16296
30. Mud, Wood, Thached Houses -0.11118
TERRITORIAL STRESSES

I Crowding Status:

31. Population per room -0.09646
32. Room Density Ratio -0.15421

II Spatial Characteristics:

33. Congestion Ratio (houses per hectare) 0.07579
34. Population Density (population per hectare) 0.09000
35. Open Spaces (per cent area to total area) 0.09032

Per cent of total variance explained 14.11

Source: Based on field Survey (1995).

with the high nutritional and material standard, this dimension shows a negative association with these variables.

This is, therefore, clearly a dimension of quality of life that emphasises health and survival status of the wards. The high factor scores on this factor refer to wards where nutritional level of population as well as life expectancy is high. The wards registering low factor scores are the pockets of environment where hunger and malnutrition are widespread and scarcity and inaccessible health services result in high infant mortality and death rate.
Spatial pattern of health and survival conditions as shown in Fig. 20 exhibit a preponderance of medium level in the entire city. However, the old city particularly the core is characterised with a low level of health and survival conditions. Due to substandard environmental sanitation and hygienic condition as a consequence of congestion, overcrowding and low incomes poor health and high mortality rates prevail. This zone includes eleven wards. These wards are, ward number 24, 25, 26, 28, 29, 30, 31, 32, 33, 35 and 37. Good health and survival conditions are found only in seven wards. These are ward number 3, 6, 7, 8, 9, 10, and ward number 11. Ward number 6, 7, 8, and 10 high standard residential areas so is ward number 3, 9, and 11. These wards are less densely populated, and it is good nutrition as well as access to health (in term of resources) which make health and survival status of these ward high. Secondly, in these wards the good nutrition coupled with good living conditions are the reasons of their high scores. Thirdly and lastly the fertility and particularly mortality rates are low thus making it score high. Apart from other reasons, one good reason for the low mortality in this area is a comparative clean environment with pure air and abundant light.
ALIGARH CITY
HEALTH AND SURVIVAL

FIG. 20

SOURCE: BASED ON FIELD SURVEY, 1995
Majority of the wards across various socioeconomic strata, housing and other conditions reveal a medium level of health and survival status. This emphasises an almost homogeneous character of the population with regard to dietary habits and vital processes. It is important to remember that in a developing country like India, food items other than the staples in adequate amounts are still considered luxuries. Food habits acquired over generations are still not replaced by new ones. Therefore, the commonly held view of low nutritive value of Indian food due to ignorance of nutritional needs and lack of knowledge about commonly available nutritive foods is a partial explanation of malnutrition in urban areas of the country. The nutritive value of Indian food in urban areas is rather a function of traditional food habits. Similarly, high birth rates are one characteristic derived from the general population of the country and can be treated as the norm. These two are important components of health and survival conditions which homogenise a large population of the city.

4.4.5 Factor 5: Education and recreation of the sampled households

This factor accounts for only 12.90 per cent of total variance (Table XVII). The variables which load
high on this factor belong to the categories of education and recreation (Table XXII). These are schools (0.84549), cinemas (0.78362), and restaurants (0.74851) in that order. Besides nurseries (0.67129) and medical practitioners (0.55692) also load moderately on this dimension. The association of the educational institutions, places of leisure and recreation together with the medical units emphasises the tendency of these services to locate in the same places. This is not as important as when this considered with the negative loadings of birth rate (-0.53202), infant mortality (-0.50453), together with loading of room density (0.43147) and low quality houses (-0.38964) and high quality (Ferro-concrete) houses (0.37158). All these emphasise good quality of environment as regard the material status, congestion and quality of housing. This signifies that these services are located in low density posh area, while as a general rule these services tend to be located in high density areas. However, as pointed out earlier expansion of the business and market areas in the peripheral areas has attracted many modern services. The concentration of educational institutions in these areas reflects on the disparities between old and new city and a discriminatory planning on the part of the planning agencies.
Table XXII

Education and Recreation of the Sampled Households

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>VARIABLES</th>
<th>FACTOR LOADING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>MATERIAL STATUS</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Monthly income (average)</td>
<td>0.10177</td>
</tr>
<tr>
<td>2.</td>
<td>Black and White T.V. ownership (per cent households)</td>
<td>0.09100</td>
</tr>
<tr>
<td>3.</td>
<td>Colour T.V. ownership (per cent households)</td>
<td>0.06059</td>
</tr>
<tr>
<td>4.</td>
<td>Refrigerator ownership (per cent households)</td>
<td>0.07245</td>
</tr>
<tr>
<td>5.</td>
<td>Video ownership (per cent households)</td>
<td>0.04802</td>
</tr>
<tr>
<td>6.</td>
<td>Airconditioner ownership (per cent households)</td>
<td>0.02833</td>
</tr>
<tr>
<td>7.</td>
<td>Washing Machine ownership (per cent households)</td>
<td>0.11202</td>
</tr>
<tr>
<td>8.</td>
<td>Generator ownership (per cent households)</td>
<td>0.08423</td>
</tr>
<tr>
<td>9.</td>
<td>Cooler ownership (per cent households)</td>
<td>0.12787</td>
</tr>
<tr>
<td>10.</td>
<td>Telephone ownership (per cent households)</td>
<td>-0.07526</td>
</tr>
<tr>
<td>11.</td>
<td>Automobile ownership (per cent households)</td>
<td>0.05117</td>
</tr>
</tbody>
</table>

|       | **CULTURAL LEVEL**                       |                |
|       | I. Education:                            |                |
| 12.   | Nurseries (per 1000 of population)       | 0.67129        |
| 13.   | Schools (per 1000 of population)         | 0.84549        |
II. Leisures:

14. Cinemas (per 1000 of population) 0.78362
15. Restaurants (per 1000 of population) 0.74851

HEALTH AND NUTRITIONAL STATUS

16. Medical practitioners (per 1000 of population) 0.55692
17. Caloric Intake (per caput) -0.03202
18. Protein Intake (per caput) 0.06181
19. Birth Rate (per 1000 of population) -0.53202
20. Death Rate (per 1000 of population) -0.22355
21. Infant Mortality (per 1000 of population) -0.50453

HOUSING STANDARDS

I. Quality of Housing:

22. Number of Kitchens (per 100 houses) 0.31618
23. Common Kitchens (per 100 houses) -0.28427
24. Number of Bathrooms (per 100 houses) 0.33974
25. Common Bathrooms (per 100 houses) -0.36797
26. Water Connections (per 100 houses) 0.25025
27. Electric Connections (per 100 houses) 0.33288
28. Gas Connections (per 100 houses) 0.29967

II Building Materials:

29. Ferro-concrete and Brick Houses (per cent occupied houses) 0.37158
30. Mud, Wood, Thached Houses -0.38964
TERRITORIAL STRESSES

I Crowding Status:

31. Population per room 0.09939

32. Room Density Ratio 0.43147

II Spatial Characteristics:

33. Congestion Ratio (houses per hectare) 0.05867

34. Population Density (population per hectare) 0.08236

35. Open Spaces (per cent area to total area) -0.10066

-------------------------------
Per cent of total variance explained 12.90
-------------------------------

Source: Based on field Survey (1995).

This factor (education and recreation), as such, is identified with the educational and recreational facilities. The high factor scores notwithstanding location or status of the wards definitely indicate greater availability of educational and recreational facilities or want of these facilities, if the wards score low on this factor.

Fig. 21 shows the spatial pattern of the quality of life in the city as expressed in the availability of educational, (of nurseries) recreational and other facilities. One of the most important feature of this distribution is a concentration of high educational and recreational status in the northeastern section of the city and other high educational recreation status are
ALIGARH CITY
EDUCATION AND RECREATION

FACTOR SCORES

HIGH
+1.25
MEDIUM
-1.25
LOW

SOURCE: BASED ON FIELD SURVEY, 1995

FIG. 21
found in northwestern part of the city. The high level includes eleven wards, which are 3, 6, 7, 8, 9, 10, 11, 12, 15, 34, and ward number 40. Most of these wards are high status residential area provided with equally high level of educational (of nurseries) and recreational facilities by the private as well as governmental organisations. The remaining wards are relatively low status congested area. However, some of these are local market areas which are weighted by secondary loadings.

Medium scores on this factor are characterised by two concentrations -- one in the old city and the other on the eastern and western periphery. The wards which show a medium level in the old of the city are ward number 14, 16, 17, 18, 19, 27, 30, 31, 33, 36 and ward number 39. Many of these wards are areas of either high or medium level of socioeconomic status. On the otherhand wards in the eastern and western periphery which includes ward number 1, 2, 4, 5, 20, 23, 29, and ward number 38. Medium level of education and recreational in the core of the city, ward number 27, and ward number 36 are high status areas.

Low factor scores on this dimension (education and recreation) concentrates in two areas: one in the core and the other in the periphery especially in the southern periphery. The core areas of low factor scores
includes ward number 21, 22, 24, 25, 26, 28, 31, 35 and 37. The outer concentration consists of only one ward, which is ward 32. Except few wards, all these areas are characterised with an equally low level of socioeconomic status.

4.5 CONCLUSIONS

In concluding the chapter it can be said that as in residential pattern, in quality of life also Aligarh city exhibit impact of cultural historical and economic factors. However, this general deterioration of the livability is not spatially homogeneous. The city reveals a heterogeneity of the environment or disparity over the city space which is observed to correspond with the socioeconomic status of the population.

On the basis of the quality of life, the city space can be divided into three broad sections: the old city, and the civil lines, and the parallel city. The old city excluding relatively healthy pockets of the wealthy people and middle class people can be said as inner slum. The civil lines includes areas show modern impact in the style of buildings, and organisation of space. The houses are spacious, congestion is low and infrastructural facilities are quite high in these areas. The quality of life in these areas can be described as the best in the city. The peripheral area have huts and squatters. The houses in this area are made
of mud, rawbrick, wood and other light materials. Due to the poverty of the populace in this area, no municipal facility is available here. The quality of life in this area can be described as subhuman in these unhygienic pockets of the city. In general, with the exception of outer slums and squatters, the quality of life increases outward from the city centre.

4.6 SOCIOECONOMIC FACTORS EXPLAINING THE INEQUALITIES IN ALIGARH

There are many factors which together contribute to the inequalities in Aligarh.

The historical growth and economic condition of the city has influenced the inequalities in different parts of the city. The core areas have been occupied ever since the beginning of the city and so these areas have become very congested and overcrowded and housing conditions in many places is poor. The houses are generally old and therefore in a dilapidated condition.

There is a residential segregation in Aligarh. It is found that majority of population who are engaged in lock manufacturing tend to cluster in the core areas can not move out to better areas because money is lacking. These are others who have the money but prefer to stay in the crowded core area because of sentimental ties like the ancestral ownership of houses and other property. Besides they have been living in the same
place for so many years that family and friendship ties keep them bound to that place.

Land values have greatly sharpened the inequalities between areas. People who can afford to buy land at high prices settle in the good areas, those who can pay moderate prices settle adjoining the good areas and those who can pay only low prices settle in the peripheries. Thus inequalities are easily discernible by people’s ability to pay for the land. Land values are high in the north-eastern areas of the city because these areas are well developed. Land values are high in the core areas also but due to the inability of the people to buy costly land, house plots are small. This has been partly responsible for the high levels of crowding which in turn has heightened the inequalities between the core and north-eastern areas. Even though land values are high in core areas people prefer to stay here in crowded conditions rather than to commute work from distance away.

Inequalities mainly appear due to the differences in the income levels of the people. Much of the difference in income levels can be related to the occupational status of the people. In Aligarh the area in the north-east are mainly inhabited by people holding jobs in the university, and others are executives and professionals. These areas reflect the prosperity of the
people staying there. Consequently they are the best with respect to the overall quality of life and well-being of the residents. The areas in the western and southern periphery of the city are inhabited by people having lower jobs in the government or petty shopkeepers, etc. Thus another factor that has contributed to the inequality between areas in Aligarh is the complexity of division of labour and the consequent social stratification.

The people belonging to the middle income group have settled in and around the core areas because these areas have most of the business establishments and shopping centres. So even if they do not have their own conveyance they can walk to their place of work. Even some of the rich traders who live in the core areas do not want to shift to better localities because they have combined their residence and work area together. Since the city's main shopping centre is in the core, they prefer staying there. People of high occupational status have preferred to live far from the crowded city centre because they have their own conveyance.

The topography of land, good drainage, etc. are the other main factors which also explains inequality in Aligarh. The wards in the core areas are located in slightly elevated areas, where the drainage is good. But the good localities have been located in comparatively low lying areas and drainage has become a problem.
References


2. Ibid., p.94.


7. Ibid., p.6.


