CHAPTER VI

Social Well-Being Development in Aligarh City

Quality of life is an outcome of social relevance paradigm. The United Nations Development Programme (UNDP) has used the term “Human Development” in place of quality of life. Human development is a process to enlarge the choice for all people not just for one part of society. The Progress of Nations Report (1996) published by the UNICEF has recorded some important innovations made by a number of countries in health, nutrition and education.

A) Measurement of Quality of Life

Measurement of quality of life or social well-being can be considered in two ways i.e. objective and subjective measurements. These two have their own requirements. Measurement of quality of life is a process in which a conceptual understanding is changed into an operationalized definition to generate statistical information. This can be achieved by social and scientific enquiry through a well prepared questionnaire. But measurement of social well-being has always been a difficult exercise, because the unanimity in the concept has still not been attained, even in case of objective measurement. Beyond basic necessities of the living, the specific criteria becomes value added, and subject to cultural interpretations. Further, needs are specific to a particular geographical scale.

Social well-being has a number of qualitative aspects like the aesthetic conditions of the living space, therefore, sometimes it becomes difficult to measure it. Gould (1988) has convincingly mentioned that “sometimes these ways of marshalling evidence are perfectly appropriate, and may be the only feasible possibility of bringing evidence to bear on particular question. But this possibility should not force all researches into it. We have to be very careful to distinguish between what is simply significant in a statistical sense and what is meaningful”.

Mukherjee (1989) has logically explained, that “transition of qualitative nominal measurement of attribute of social well-being to the qualitative ordinal numeral distinction is in operation with respect to culture. He is of the opinion that, the
knowledge has accumulated to the extent for measuring the admixtures on a unit interval scale and producing objects on mass scale”.

So it would be better, if social well-being is considered as the condition of prosperity, happiness, and good health of the people of the society. It includes many aspects related to human life, welfare of society and level of satisfaction of people. Thus, social well-being includes both subjective and objective realities of human life.

B) Measurement of Social Well-Being: Based on Selected Indicators

An indicator selected for the measurement of social well-being can be defined as the statistic or direct normative interest which facilitates concise, comprehensive and balanced judgment about major aspects of the society.

Smith (1973) has identified a set of 7 indicators for the measurement of quality of life and social well-being. The indicators selected by him are: income, wealth, and employment, the living environment, physical and mental health of the people, education, social order involving personal and family problems, social belongings, recreation and leisure.

Social well-being depends not only on the income of the people, but on who lives in and form part of the society, and has an access to the basic infrastructure services, education, occupation etc. Therefore, the author has attempted to select some indicators to measure social well-being status of the selected households in different wards of Aligarh city. The selected indicators are as:

i. Literacy
ii. Employment
iii. Income and Wealth
iv. Housing Condition
v. Luxury Goods

Developing an index for the measurement of social well-being has always been a tough aspect of social enquiry. To ascertain what is ‘good’ and what is ‘bad’ in a society, and the selection of a spatial unit has been of great significance in social geography. Assigning quantified values to different spatial units i.e. the municipal wards on the basis of computing z-scores can be done to highlight the disparities in social well-being and social development in the city. Preparation of maps highlighting
inequalities will be of great help and suggesting effective measures for social development and planning.

In the present chapter five different aspects pertaining to social well-being have been considered for in depth study, of which composite z-score values were calculated for obtaining an index of social well-being in wards of Aligarh city. The computed values of indices were interpreted ward as unit of spatial dimension in the city. Finally, a composite index of well-being has been developed to indicate the areas of high and low developments in different parts of Aligarh city. Such an index also helps in ascertaining the spatial dimensions of social well-being in the city.

C. Educational Development in Aligarh City

An index for ascertaining the levels of educational development on the basis of 5 selected indicators in each ward of the city has been developed by aggregating z-score values of each indicator. The selected indicators for the assessment of educational development are: i) number of male literates in selected households, ii) number of female literates, iii) number of graduates, number of post-graduates, and number of professionals in each ward. The index values thus obtained for educational development in 70 wards of the city were categorized into 5 different categories ward-wise as: very high, high, medium, low and very low (Table 6.1).

<table>
<thead>
<tr>
<th>Level of development</th>
<th>Composite mean z-score</th>
<th>No. of wards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>Above 1.36</td>
<td>4</td>
</tr>
<tr>
<td>High</td>
<td>0.67 to 1.36</td>
<td>15</td>
</tr>
<tr>
<td>Medium</td>
<td>-0.03 to 0.67</td>
<td>14</td>
</tr>
<tr>
<td>Low</td>
<td>-0.73 to -0.03</td>
<td>22</td>
</tr>
<tr>
<td>Very Low</td>
<td>Below -0.73</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: Data computed from the primary information collected through field surveys, 2010

Table 6.1: Wardwise Educational Development in Households of Aligarh City, 2010

i. Very high level of educational development (above 1.36 z-score values)

Table 6.1 reveals that, only 4 out of 70 wards form the very high category. These wards are namely, Sir Syed Nagar, University Area, Medical College and Kela Nagar. Of these Sir Syed Nagar ward stands out at the top with a Z- score value of
2.06, followed by University Area with a z-score value of 1.58, whereas Medical College and Kela Nagar have z-score values of 1.49 and 1.47 respectively. All of these wards are inhabited by high income group and educationally advanced families. A good number of graduates and professionally educated people live here. These wards form the new parts of the city.

ii. High level of educational development (0.67 to 1.36 z-score value)

With the high level of educational development there are 15 wards to have z-score values of ranging from 0.67 to 1.36. Most of these wards are located in newly developed parts of the city. They are mainly occupied by service class people, those have enough resources to invest on the education of family members.

iii. Medium level of educational development (-0.03 to 0.67 z-score values)

The medium category of educational development is represented with the z-score values -0.03 to 0.67. There are 14 wards to form this category and ly in the central part of old city. Here mostly low income groups of people reside, working in factories or do small business (Fig 6.1). Among them mostly uneducated and if, they have attained only primary level education.

iv. Low level of educational development (-0.73 to -0.03 z-score values)

With low level of educational development, there are 22 wards of the city. These wards form old part of the city and fringe areas of the city. Households of these wards also belong to low income groups and sustain on less resources.

v. Very low level of educational development (below -0.73 z-score values)

Within this category of very low level of educational development, there are 15 wards. Lowest value of -1.42 z-score value is scored by Mualana Azad Nagar ward. All wards of this category lie at the fringe of city. These areas are occupied by almost workers and rickshaw pullers whose educational level is very low.
ALIGARH CITY
Wardwise Educational Attainment of Households
2010

Fig. 6.1
D) Employment Status in Aligarh City

Indicators describing economic life of people are considered to be important determinants to explain well-being. Nature of employment determines the level of income is a conspicuous trait of capitalistic mode of production. These two aspects of employment are most important in determining the social status of people in an urban structure.

The employment status of households in wards of Aligarh city was determined by selecting four indicators as: total number of employed persons, number of persons employed in business and industrial establishments, number of persons employed in gazetted sector, and number of persons working as labourers.

**Table 6.2: Wardwise Employment Development in Households of Aligarh City, 2010**

<table>
<thead>
<tr>
<th>Level of development</th>
<th>Composite mean z-score</th>
<th>No. of wards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>Above 0.11</td>
<td>9</td>
</tr>
<tr>
<td>High</td>
<td>0.02 to 0.11</td>
<td>20</td>
</tr>
<tr>
<td>Medium</td>
<td>-0.04 to 0.02</td>
<td>18</td>
</tr>
<tr>
<td>Low</td>
<td>-0.12 to -0.040</td>
<td>13</td>
</tr>
<tr>
<td>Very Low</td>
<td>Below -0.12</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Data computed from the primary information collected through field surveys, 2010

i) Very high level of employment (above 0.11 z-score values)

Table 6.2 and Fig. 6.2 shows that, 9 wards namely, Sir Syed Nagar, Medical College, University Area, Kishanpur, Bhamola, Kela Nagar, Tan Tan Para, Badar Bagh and Manik Chowk have a very high employment rate. The wards of Sir Syed Nagar, Medical College, University Area, Kishanpur, Bhamola and Badar Bagh are mainly inhabited by the service class people. Most persons belonging to households are engaged in jobs, working in various department of AMU. Some members of households also run their private business. These wards are located in northeastern part i.e. new parts of city. In wards of Tan Tan Para, Kela Nagar and Manik Chowk people generally belong to business class people, but some residents are also involved in factory works. These wards form old parts of the city.
ALIGARH CITY
Wardwise Employment Status of Households 2010

Fig. 6.2
ii) **High level of employment (0.02 to 0.11 z-score values)**

The category of high development of employment is represented by 20 wards. A majority of wards in this category belong to old parts of city, where people most have their own small scale industries of hard ware production. In some wards wholesale marketing of different items is also seen. Wards of Lekh Raj Nagar, Firdous Nagar and Zohra Bagh located in new part of the city have a good number of people involved in service or work as labourer in factories.

iii) **Medium level of employment (-0.04 to 0.02 z-score values)**

Medium category has households having z-score values of -0.04 to 0.02 in employment are seen in 18 wards, mainly located in central parts of the city, where mostly small industries owners live. In addition to small industries owners daily and weekly wagers working in unorganized traditional sector of the small scale and cottage industries also live in densely inhabited localities.

iv) **Low level of employment (-0.12 to -0.04 z-score values)**

Low level category of employment comprises of 13 wards. Most wards are located in central parts of the old city, where people are engaged in the factory works. Some wards are located in fringe areas of the city.

v) **Very low level of employment (below -0.12 z-score values)**

This category of very low employment with the z-score values below -0.085 is represented by 10 wards located in fringe areas of the city, where residents are engaged as vendors, rickshaw pullers and construction works.

Employment rate in the city has undoubtedly increased in recent years, but still there are areas where many unemployed people live. The other fact which emerge from the study are, that mostly the people involved in low class jobs devotes more working hours as labours and very few of them are in gazetted service sector and most people belonging to high income group have their own business and industries.
E. Economic Well-being in Selected Households of Aligarh City

The monthly income households of different wards in Aligarh city has been calculated as: very high (more than Rs 20000), high (Rs10000 to Rs 20000), medium (Rs5000 to Rs10000), low (Rs 3000 to Rs 5000), and very low( less than Rs 3000). This categorization of income groups is based on the employment characterization of selected households of the wards. To ascertain the reality of economic well-being of selected households in each ward of Aligarh city, 7 indicators were selected as average monthly income (Rs), household monthly income (Rs), per capita monthly income, percentages of very high income group, high income group, low income group and very low income group. Table 6.3 and Fig 6.3 shows z-score values for income distribution into five categories

<table>
<thead>
<tr>
<th>Level of development</th>
<th>Composite mean z-score</th>
<th>No. of wards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>Above 0.72</td>
<td>10</td>
</tr>
<tr>
<td>High</td>
<td>0.36 to 0.72</td>
<td>11</td>
</tr>
<tr>
<td>Medium</td>
<td>-0.36 to 0.36</td>
<td>27</td>
</tr>
<tr>
<td>Low</td>
<td>-0.72 to -0.36</td>
<td>9</td>
</tr>
<tr>
<td>Very Low</td>
<td>Below -0.72</td>
<td>13</td>
</tr>
</tbody>
</table>

Source: Data computed from the primary information collected through field surveys, 2010

i) Very high level of income (above 0.72 z-score values)

Table 6.3 reveals that, households of 10 wards show very high level of income. These are namely, Sir Syed Nagar, Kishanpur, Medical College, Hamdard Nagar, Zohra Bagh, Janakpuri, Dodhpur, Badam Nagar, and Ashok Nagar. The ward of Sir Syed Nagar scored the highest z-score value of 2.25. In this ward many of the members of households are involved in high class jobs. Beside this, the members number of households are also belong service class people. All of these wards belong to newly developed parts of the city.

ii) High level of income (0.36 to 0.72 z-score values)

High level income households are seen in 11 wards, some of them form parts of newly developed areas. Rest lie in old parts of city, here mostly business class people
ALIGARH CITY
Wardwise Economic Status of Households
2010

Z-scores
- Very High: Above 0.72
- High: 0.36 - 0.72
- Medium: -0.36 - 0.36
- Low: -0.72 - -0.36
- Very Low: Below -0.72

Fig. 6.3
resides having their own industries and factories, or they are involved in whole sale marketing of different commodities. Some households of University Area ward also belong to this category. Most of them are involved in the teaching or in other administrative and accounts works of the University.

iii) Medium level of income (-0.36 to 0.36 z-score values)

The households with medium level of income category are seen in 27 wards. These wards form the core areas of old city. Where small factory workers or small factory owners reside. Their houses serve dual purpose for residence and as a factory unit. But in some wards forming new parts of the city i.e. in the wards Jamalpur, Badar Bagh and Bhamola a majority of residents are in clerical jobs or as fourth-grade employees in government offices.

iv) Low level of income (-0.72 to -0.36 z-score values)

Households having low level of income are seen in 9 wards. These wards belong to the old part of the city where factory workers reside. Due to low income the residents prefer to live near their workplace. They earn Rs 3000 to Rs 5000 per month, therefore, they have limited purchasing power.

v) Very low level of income (below -0.72 z-score values)

Very low income slab households are seen in 13 wards, which are known as fringe wards, where mostly low income households working as labourers and earn Rs 100 to Rs 200 per day resides. There also live some families of rickshaw pullers, vendors and workers involved in construction works.

Fig 6.3 shows that, very high and high income households are confined to northeastern part of the city. Low and medium income households are evenly distributed in all wards of the city, whereas the households characterized with very low income, high and very high income households are distributed in wards more unevenly. This situation indicates the presence of pockets of poverty and prosperity in the city.

F. Housing Facilities and Housing Conditions in Aligarh City

Housing conditions determine the residential environment which in turn is determined by number of rooms in a house, open space, and building material used in house construction. Facilities in a house include many things which are of utmost
importance such as kitchen, toilet and mode of water supply etc. These facilities directly affects the and socio-economic status, and prestige of a household.

In order to find out level of housing conditions in Aligarh city 10 indicators were to determine the housing facilities and social status of a household. The indicators selected are number of owned houses, number of cemented houses, number of households using their house for own residential purpose, number of households using their house for residential and work purpose, number of houses having open spaces, number of households having three rooms, number of households with kitchen facility, number of households with toilet facility, number of households having municipal water supply connection and number of households having their own submersibles for water needs. Table 6.4 and Fig 6.4 shows the z-score values pertaining to housing conditions as a part of well being. On the basis of computed z-score values, it is possible to categorize the households into five categories as: very high, high, medium, low and very low.

**Table 6.4: Wardwise Housing Amenities in Households in Aligarh City, 2010**

<table>
<thead>
<tr>
<th>Level of development</th>
<th>Composite mean z-score</th>
<th>No. of wards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>Above 0.53</td>
<td>9</td>
</tr>
<tr>
<td>High</td>
<td>0.27 to 0.53</td>
<td>14</td>
</tr>
<tr>
<td>Medium</td>
<td>-0.25 to 0.27</td>
<td>31</td>
</tr>
<tr>
<td>Low</td>
<td>-0.51 to -0.25</td>
<td>4</td>
</tr>
<tr>
<td>Very Low</td>
<td>Below -0.51</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: Data computed from the primary information collected through field surveys, 2010

i) **Very high level of housing conditions (above 0.53 z-score values)**

Table 6.4 shows that, very high level of housing conditions is seen in 9 wards, out of 70 wards. University Area ward has scored the highest z-score value of 0.97. Most of houses in this ward are very spacious, with enough open space and good water supply. Households belonging to other wards under this category are seen in the wards of Gandhi Nagar, Ghanshyampuri, Avas Vikas Colony, Vikas Nagar, Zohra Bagh, Badar Bagh and Lekh Raj Nagar. All of these wards have a large number of households representing high income families who have very good housing conditions located in new parts of the city.
Fig. 6.4

ALIGARH CITY
Wardwise Housing Amenities in Households
2010

Z-scores
Very High: Above 0.53
High: 0.27 - 0.53
Medium: -0.25 - 0.27
Low: -0.51 - -0.25
Very Low: Below -0.51
ii) High level of housing conditions (0.27 to 0.53 z-score values)

The category of high level of housing condition is represented by households in 14 wards, some of them form parts of old city and most belong to new parts. In these wards new colonies have developed. New houses built by high income groups have all essential housing facilities.

iii) Medium level of housing conditions (-0.25 to 0.27 z-score values)

Medium level of housing conditions and development is seen households in 31 wards. Most of them form part of old city. Houses are small in size and old in characteristics. Though many high income families group reside there, but they are not intended to renovate their houses because of housing congestions. These old houses are devoid of open spaces, with one room only and no separate kitchen. A characteristic feature of houses is that they serve the dual use purpose, i.e. used for residential as well as occupational and industrial purposes. This situation creates a lot problems association with of health and noise.

iv) Low level of housing conditions (-0.51 to -0.25 z-score values)

Low level of housing conditions among the households are seen in 4 wards which form the most congested parts of old city. A largest chunk of residents belong to factory workers mostly employed in lock industries. Each family has one room used for living and cooking purposes.

v) Very low level of housing conditions (below -0.51 z-score values)

Very low level of housing conditions among the households are seen in 12 wards, most of them form outer parts of the city. In these wards very low income group resides. Housing conditions are pathetic as houses are made of thatches and grasses without ventilation. They have no provision of water supply and toilets. Families cook their food in open space, outside the houses.

Housing conditions of households surveyed in Aligarh city are of medium standard, housing conditions are seen only in the newly developed parts of the city, which are confined in northeastern part. In central part of the city there are of medium standard houses, whereas worst conditions confine in fringe areas. Housing conditions depend on income of the households. Families belonging to high income group can afford and able to make improvements in their houses.
G. Purchased Luxury Goods with Households in Aligarh City

Luxury goods make life of the people comfortable and more easy. Possession of these also form a component of social well-being. As the households income and wealth is unequal in the households so the life style. High income households have a clear access to own these facilities. To make a comparative study of households possessing luxury goods 5 indicators were selected. These are as follows: households having number of laptops, households having number of cell phones, households having number of tv sets, households having number of scooters and households having number of cars. Table 6.5 and Fig. 6.5 shows the categorization of households as: very high, high, medium, low and very low with the specific range of z-score values.

**Table 6.5: Wardwise Purchased Luxury Goods with in Households in Aligarh City, 2010**

<table>
<thead>
<tr>
<th>Level of development</th>
<th>Composite mean z-score</th>
<th>No. of wards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>Above 0.82</td>
<td>1</td>
</tr>
<tr>
<td>High</td>
<td>0.42 to 0.82</td>
<td>22</td>
</tr>
<tr>
<td>Medium</td>
<td>-0.36 to -0.42</td>
<td>33</td>
</tr>
<tr>
<td>Low</td>
<td>-0.76 to -0.36</td>
<td>3</td>
</tr>
<tr>
<td>Very Low</td>
<td>Below -0.76</td>
<td>11</td>
</tr>
</tbody>
</table>

Source: Data computed from the primary information collected through field surveys, 2010

**i) Very high level of purchased luxury goods (above 0.82 z-score values)**

On the basis of indicators selected z-score value computed for determining the status of purchased luxury goods in households only 1 ward shows very high level in possession of luxury goods, namely Medical College ward with z-score values above 0.82 In this ward the family members of a household are employed on gazetted posts. Their earning are relatively high and they are well educated, the luxury goods form part of life style.

**ii) High level of purchased luxury goods (0.42 to 0.82 z-score values)**

High level luxury goods category has a larger number of households spread in 22 wards. Almost all wards form parts of newly developed areas of the city but some of them also lie in old parts. These wards are inhabited by service class families as they are engaged in high class jobs with good salaries, therefore, possess a number of luxury items.
Fig. 6.5
iii) Medium level of purchased luxury goods (-0.36 to 0.42 z-score values)

Medium category of purchased luxury goods with households are seen in 33 wards, all of them are located in central parts of old city. In these wards, the households members work in factories on very low wages. Cell phones and scooters are the common items which they possess.

iv) Low level of purchased luxury goods (-0.76 to -0.36 z-score values)

Low level of purchased luxury goods is seen in 3 wards. These wards are also located in old parts of the city.

v) Very low level of purchased luxury goods (below -0.76 z-score values)

As most households residing in fringe area wards are deprived with basic needs and low employment rate, therefore, with very low income can’t purchase the luxury items. This is seen in 11 wards of the city so possession of luxury goods is not possible. Most of the households use wood as a medium of cooking food. A noticeable feature is that all most all the sampled households in this area do not have the access basic necessities.

Though possession of luxury goods is directly related to the income, higher is the income higher will be the purchasing power for goods. Aligarh city shows a huge disparity among wards with respect to possession of luxury goods. Beside the disparities, there are pockets in the city where families are devoid of basic necessities of life. This shows an uneven distribution of wealth and vast socio-economic differences in wards of the city.

H. Overall Assessment of Social Well-Being in Aligarh City

The social well-being indicators measure how people have their relation while living in a civic society and which factors strengthen those relations with others. These can be considered by presenting people’s experience of ‘thick’ and ‘thin’ relationships. ‘Thick’ relationships represent strong human connections which people experience while living with those who are very close to them, and ‘thin’ relationships are those human connections which people establish in society.

For the assessment of an overall development in Aligarh city, it was attempted to aggregate the z-score values of households surveyed in respective wards. Five aspects pertaining to social well-being. Table 6.6 and Fig 6.6 shows z-score values
obtained for selected households in each ward, which were grouped into five distinct categories of social well-being levels of development as very high, high, medium, low and very low.

**Table 6.6: Socio-Economic Development of Households in Wards of Aligarh City, 2010**

<table>
<thead>
<tr>
<th>Category</th>
<th>Z-Score Values</th>
<th>No. of Persons</th>
<th>Percentage to total population</th>
<th>Percentage of area occupied</th>
<th>No. of wards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>Above 0.56</td>
<td>93778</td>
<td>14.67</td>
<td>27.50</td>
<td>10</td>
</tr>
<tr>
<td>High</td>
<td>0.28 to 0.56</td>
<td>105325</td>
<td>15.80</td>
<td>24.10</td>
<td>11</td>
</tr>
<tr>
<td>Medium</td>
<td>-0.25 to 0.28</td>
<td>318925</td>
<td>47.66</td>
<td>54.92</td>
<td>31</td>
</tr>
<tr>
<td>Low</td>
<td>-0.52 to -0.25</td>
<td>39159</td>
<td>5.85</td>
<td>8.51</td>
<td>6</td>
</tr>
<tr>
<td>Very low</td>
<td>Below -0.52</td>
<td>111900</td>
<td>16.72</td>
<td>20.80</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: Data computed from the primary information collected through field surveys, 2010

i) **Very high level of socio-economic development (above 0.54 z-score values)**

The results analysis of socio-economic development in Aligarh city are shown in Table 6.6. It is evident from the table that only in 10 wards socio-economic development is visible. They are, namely Sir Syed Nagar, University Area, Medical College, Zohra Bagh, Lekh Raj Nagar, Dodhpur, Hamdard Nagar, Badar Bagh, Kishanpur and Gandhi Nagar. The wards of Sir Syed Nagar secured the highest z-score value of 1.05. These wards are inhabited by the households of high income group, well educated and engaged in first class jobs with very high purchasing power. Table 6.6 also highlights that, very high socio-economic development category of households in respective wards occupies 27.50 per cent of the total area, and 14.67 per cent of total population of the city.

ii) **High level of socio-economic development (0.27 to 0.54 z-score values)**

This category of high socio-economic development represents the households in 11 wards. Most of these wards form new parts of the city, where high income group residents belonging into service class people reside. Wards forming parts of old city are occupied by business class residents. This category of high socio-economic development occupies 24.10 per cent of total area, and 15.80 per cent of total population of the city.
ALIGARH CITY
Overall Development of Social Well-Being of Households
2010

Fig. 6.6
iii) Medium level of socio-economic development (-0.26 to 0.27 z-score values)

There are 31 wards in which households belong to this category, with 54.92 per cent of the total area, and 47.44 per cent of population resides in these wards. Most of the wards form core areas of old city, where middle income group families live. Although they have the access to basic necessities of life, but can’t afford to purchase luxury goods.

iv) Low level of socio-economic development (-0.53 to -0.26 z-score values)

Low level of socio-economic development of the households is seen in 6 wards, over an area of 8.51 per cent, which contain 5.85 per cent of total population. These wards form the central part of the old city, and here residents engaged in small jobs.

v) Very low level of socio-economic development (below -0.53 z-score values)

Very low socio-economic development is seen in 12 wards to occupy 20.80 per cent area and 16.72 per cent of the total population of the city. These wards form southeastern and western parts of the city. In these wards the members of the households are engaged in low class jobs.

Aligarh present itself as the city characterized with medium category of development with respect to an overall social well-being. Comparative figures clearly reveal that, very high and high levels of development are confined only to newly developed parts of the city, and in some recently built colonies. Earlier high income groups of residents were dominating old parts of the city due to lock manufacturing factories, but now with the hike in salaries people prefer to work in government and private sectors. As a result serving in these sectors has emerged as powerful push in socio-economic development of the city. Old parts of the city are facing many problems associated with congestions and overcrowding.

I. Infrastructural Facilities Versus Social Well-Being Development in Aligarh City

The proper provision of infrastructural facilities is a cumulative reflection of development of social well-being in a city, it takes place in the form of spatial variation in different natural and man-made phenomena. Development of infrastructural facilities work as an inertia for the socio-economic development, however, improved social institution and better technology helps in upgrading the quality of amenities. In Aligarh city the infrastructural development reflects an incoherent attitude of the society
towards its living environment. In fact, the quality of civic amenities is closely related to the level of economic development, the degree of cultural attainment and history of social organization.

For the establishment of cause and effect relationship between infrastructural facilities and social well-being the linear regression technique was applied. It is an approach for modeling the relationship between a scalar variable $y$, and one or more variables denoted by $x$. In linear regression, data are modeled by using linear functions, and unknown model parameters estimated from the data. Such models are called linear models. Most commonly, linear regression refers to a model in which the conditional mean of $y$ given the value of $x$ is an affine function of $x$. Less commonly, linear regression could refer to a model in which the median, or some other quintile of the conditional distribution of $y$ given on $x$ is expressed as a linear function of $x$. Like all forms of regression analysis, linear regression focuses on the conditional probability distribution of $y$ given on $x$, rather than on the joint probability distribution of $y$ and $x$, which is the domain of multivariate analysis.

Linear regression is a type of regression analysis to be studied rigorously, and is used extensively in practical applications. This is because models which depend linearly on their unknown parameters are easier to fit than models which are non-linearly related to their parameters and because the statistical properties of the resulting estimators are easier to determine.

The variables pertaining to infrastructural facilities in each ward include a set of independent variables such as:

- **Roads**: number of concrete roads, number of inter-brick locking per thousand of population.
- **Sanitation**: number of flowing drains per 1000 of population, and number of stagnant drains per 1000 of population.
- **Solid waste management**: number of dust bins per 1000 persons, number of sweepers per 1000 persons, and number of rickshaws used for waste collection per 1000 of persons.
- **Street lights**: total number of street lights serving per 1000 persons in
Health care facilities: number of doctors per 1000 persons, number of private hospitals/ nursing homes/ private clinics per 1000 persons, and number of medical stores per 1000 persons.

Educational facilities: number of primary schools per 1000 persons, number of secondary schools per 1000 persons, number of senior secondary schools per 1000 persons, and number of colleges and universities per 1000 persons.

Variables for social well-being considered as dependable variables pertaining to selected households in each ward are as:

Literacy and education: number of male literates, number of female literates, number of graduates, number of post-graduates, and number of professionals.

Employment status: total number of employed persons, number of persons employed in business and industrial establishments, number of persons employed in gazetted sector, and number of persons working as labourers.

Economic well-being: average monthly income (Rs) of the household, per capita income, percentages of very high income group, high income group, medium income group, low income group and very low income group.

Housing conditions and housing facilities: number of cemented houses, number of houses used as residence of households, number of house used as residence and for business work, number of houses with open space availability, number of households with three room set, number of households with kitchen facility, number of households with toilet facility, number of households using municipal water supply, and number of households using submersibles.

Purchasing luxury goods: number of households having laptops, number of households having cell phones, number of households with tv sets, number of households having scooters and number of households having cars.

Values plotted on y and x axis follow a linear fashion (Fig 6.7), which is shown by a straight line that explains a positive relationship between the infrastructural facilities and social well-being variables in Aligarh city.
Wardwise Relationship between Infrastructural Facilities and Social Well-Being in Aligarh City, 2010
(Linear Regression)

\[ y = 0.603x + 0.089 \]
\[ R^2 = 0.548 \]

Fig. 6.7
Fig 6.7 also shows that, there exists a strong relationship between infrastructure and social well-being at household level. Wards having good provision of infrastructural facilities are characterized by high-quality of social well-being and vice versa. Inadequate and unjust distribution of civic amenities minimizes the standard of living of the people. Under such an environment civic rules and several norms get severely affected.