MORPHOLOGICAL STRUCTURE OF RURAL SETTLEMENT

Morphology, which is primarily concerned with the layout, plan and internal structure of settlements, forms an important aspect of settlement studies. In biological terminology, morphology refers to the appearances and built-up of an organism, but as a general term it is closely related to the bounded space, that is pattern, plan and structure. In geographical realm the two components viz; man and his environment manifest different patterns both cultural and natural settlements are the patterns produced as a consequence of man and his settlings process in a given environment. According to R.L. Singh (1975)\textsuperscript{1} morphology involves identifications, classification, regionalization as well as the description and analysis of the structure of settlements and their associated components.

The concept of morphology in spatial context has been initiated by Goethe, who applied the concept of biological organism to the social phenomena\textsuperscript{2}. The concept of structure, process and stage is also applicable in the study of cultural landscape including rural settlements. The morphological analysis of rural settlements or villages reveals the arrangement of houses with all characteristics attached to them\textsuperscript{3}. The morphological structure of settlements or villages as concrete expressions of human activity in space, involve five principles of settlements formation advocated by Doxiadis\textsuperscript{4} (Fig. 4.1) According to Doxiadis a village generally consists of four parts;

(i) Homogeneous part-fields, houses etc;
FIVE PRINCIPLES OF SETTLEMENT - FORMATION

1ST. MAXIMIZATION OF POTENTIAL CONTACTS

2ND. AT A MINIMUM OF EFFORT IN TERMS OF ENERGY, TIME & COST

3RD. OPTIMIZATION OF MAN'S PROTECTIVE SPACE IF HE IS ALONE OR WITH OTHERS

4TH. OPTIMIZATION OF THE QUALITY OF MAN'S RELATIONSHIP WITH HIS ENVIRONMENT

5TH. OPTIMIZATION IN THE SYNTHESIS OF ALL PRINCIPLES

THE FIVE ELEMENTS OF HUMAN SETTLEMENTS ARE NOW OUT OF BALANCE.
Various spatio-temporal transformations do occur, but these parts are always visible in any settlement or \textit{Ekistic} unit \textsuperscript{5} (Fig. 4.2). These basic parts are closely associated with dimensions of \textbf{height, length, width and time}, which are best explained by morphological analysis of the settlements or villages.

Morphology of a rural settlement in its anatomy governed by simultaneous interaction of physical and non-physical environment.

Village and 'gaon' are synonymous terms, which devote a cluster of houses including the surrounding land almost self-sufficient and usually groups at a convenient site. The houses along with the street patterns are relatively permanent and visible elements of the rural landscape on the natural landscape of a region. The arrangement of buildings and the location of the main cultural establishments, temple, fort, market place, walls and moats etc. are also some of the elements of morphology. The morphology of settlements is also guided by the social organisation, which determines the integration of functional and social space.

The basic aim of this chapter is to describe and analyse the morphological expressions of rural settlements. Hence, an attempt has been made to study the different patterns of rural settlements and their regional distribution, shape of the villages, and socio-spatial structure of the selected villages in the study region.

\textbf{SHAPE ANALYSIS:}

The layout means external and internal form of settlements (Ahmed, 1962)\textsuperscript{6} which depend upon the physical and cultural conditions of the landscape (Singh,
Any settlement consists of:
- homogeneous part
- central part
- circulatory part
- special part

A village consists of:
- homogeneous part (fields)
- central part (built-up)
- circulatory part (roads and paths)
- special part (monastery)

The built-up area of the village consists again of:
- homogeneous part (houses)
- central part (church and shops)
- circulatory part (streets)
- special part (school)

Figure - 4.2
The study of man's movement in a territory is an important concept as defined by Watson that 'Geography is the science of Distance'. So, inhabited site and village boundary are the two basic components of shape analysis. Here, an attempt has been made to deal with the traditional methods of shape analysis as well description of their geometrical forms.

**PATTERN ANALYSIS:**

The concept of shape is essentially a study of the form characteristics of the villages, expressed of the built up area of human habitations. Broadly speaking, the shape of villages can reveal overall patterns of human settlements. The form of the villages is sort of natural growth in their physical and cultural setting of the region. Ahmed (1952) described that there is an unmistakable connection between the configuration of the site, surface water (river, canal, tank or pond, well), the nature of the soil, cultivation, grooves and the shapes of the fields on the one hand and the patterns of the settlements on the other.

Hall (1931) used the external form of the inhabited site for the classification of village patterns. Later on, European, geographers have followed his idea. In India Singh (1955 b) studied the layout of villages in middle Ganga Valley. While, Jones (1964) recognised that the pattern of the settlement may even be seen without the reference of site by simply assessing the contigarity of one house with the other house, controlled by a set of factors and the process of interactions between each other. It is fact that the emergence of a pattern is not simple out come of house clustering but is Singh (1978) recognised about 18 different village patterns in Malwa Region, while Singh (1985) recognised more than ten village patterns in Ballia district. Karan Vir (1992) also identified about 16 different village patterns in Bhiwani district of Haryana state.
Mandal (1989) described seven factors such as physical (e.g. location, configuration of the site, water bodies like rivers, wells, ponds, slope and elevation of land such as plains, uplands or valleys, water table, water logging areas, forested areas, etc.), social (e.g. caste, clan group, religions, affinity, etc.), cultural (e.g. historical events, planned geometrical patterns of roads, and lanes, field patterns, religious institutions like mosques, temples etc.) and economic (e.g. the system of farming road, industrial location) etc. are intimately related to the outer shape and inner structure of the village.

Besides the factors enlisted above some other factors like layout of cart-tracks, locations of mosques and temples, roads too can influence in dividing the pattern of villages. Therefore, pattern analysis is a study in recognising the arrangement of villages in confirming with certain known geometrical configurations like rectangular, square, L and T shape, circular etc.

The present study of pattern is confined to the topographical sheets of Jind, Karnal and Panipat districts bases on 1:50,000 and their interpretation in terms of study of foot tracks, rail and road, distribution of temples, mosques and spring etc. The following patterns have been recognised in Jind plain viz;

A. Rectangular
B. Square
C. Triangular
D. Circular
E. Semi-Circular
F. Linear (elongated)
G. L and T Shape

A. RECTANGULAR PATTERN:

It is the very common village shape found throughout the study region. The causative factor for this pattern is rectangular division of land that is Bigha system
comparable to that of *Jori system* of Japan, Han-den of China and *Jugerium system* of Italy etc. Village *Ludana* (Fig. 4.3A) is the best example of the rectangular shape. The location of village reveals another important fact that is the convergence of cart tracks from all directions. There are plenty of line wells towards northern and eastern sides of the village. A temple is also located in northern side. The configuration of land, convergence of cast tracks and the shape of the fields could be the reason of rectangular pattern. The village *Ludana* lies 29°10' 84" N and 76° 30' 70" E situated on Jind-Butana- Gohana road [No. 53 C/12].

**B. SQUARE PATTERN:**

It is observed that square and rectangular pattern have great similarity. The only difference is in the alignment of dwellings. Such a pattern is associated with villages laying at the crossing of cart tracks or road. Village *Lajwana Kalan* (Fig. 4.3 B) is laying crossing of unmettled road. There are plenty of lined wells towards northern, eastern and western sides of the village. It lies 29° 0'75" N and 76° 25' 66" E situated about five kms away from Rohtak-Sangrur state highway (No, 53 C/8).

**C. TRIANGULAR PATTERN:**

Some time village site provides peculiar triangular shape, the main block forming the base and other extension growing towards the apex. Village *Pipaltha* (Fig. 4.3C) is the example of this pattern, which lies 29° 45' 40" N and 76° 5'25". (No. 53 C/1).

**D. CIRCULAR PATTERN:**

Some time village develops in a circular form because of maximum aggregation for the purpose of defense round the mansion of the local Zamindar who used to protect the villagers. The network of roads from all directions also
RURAL SETTLEMENT PATTERNS

JIND PLAIN

SOURCE: TOPOGRAPHICAL SHEETS (S.O.I)

Figure 4.3
helps to develop circular form because people prefer to settle along roads for high accessibility and mobility. Village Alewa (Fig. 4.3 D) is connected with roads from all directions and settlements of the village has spread in a circular form. It lies 29° 25' 10" N and 76° 25' 60" E situated about one km away from Naguran-Kaithal road. (NO. 53 C/7).

E. SEMI-CIRCULAR PATTERN:

Certain villages develop in a crescent shape along the meander bank, bend of stream, pond, canal, temple or a circular road. At times physical factors like marshes, lakes, topography etc. also prevent the expansion of inhabitations in the central part giving it a semi-circular form. Village Kathana (Fig. 4.3 E) lies 29° 30' 20" N and 76° 20' 56" E situated Jind Gulliana road.

F. LINEAR OR ELONGATED PATTERN:

Some time high level surface restricted by floods or dissection topography from two sides form the elongated or linear shapes. This pattern is closely associated with the linio-petal and linio-fugal forces, developed along the roadside or water front-dry-point. Village Chuharpur (Fig. 4.3F) situated along with the road. It lies 29°25'10" N and 76° 21'53" E situated 4.5 kms away from Naguran-Hansi Road. (No. 53 C/7).

G. 'L' AND 'T' SHAPED PATTERN:

'L' shape pattern is characterised when the two blocks of houses meet each other at right angles, or when two linear forces of right angles. In due course of development and extension, 'L' shape is transferred into 'T' shape. Village Kalawati and Anta (Fig. 4.3 G and H) are the examples of 'L' and 'T' shape respectively village Kalawati lies 29° 20' 46" N and 76° 30' 44" E situated about
5 kms away from Kalwa and connected with cart tracks from all directions (No. 53 C/11).

**Anta** is a 'T' shaped village with its longer axis East-West direction and shorter axis in North-South direction lies $29^\circ 25'\ N$ and $76^\circ 40'\ 25"\ E$ situated on the bank of Western Yamuna Canal (Hansi Branch). (No. 53 C/11).

**REGIONAL DISTRIBUTIONS OF VILLAGE PATTERNS:**

The above identified patterns are represented in the map (Fig. 4.4) while table 4.1 shows the number of villages under each pattern. The map and table confirm that identification of typical patterns into various regions is rather difficult owing to association of the various factors.

Although the Jind plain is dominated by square and rectangular shape of villages. But certain distinct shapes of the village emerge as a consequence of physiography, transportation network and rural population, density etc. The southern sector of the study region generally show square cum rectangular pattern of the villages. The factor associated with this pattern is the homogeneity of the land and convergence of traffic lines. In the northern sector of the Jind Plain although the pre dominance of semi-circular and square shape of village is visible. The linear or elongated settlements are observed along the SH No. 15 which connect the Julana-Jind-Uchana and Narwana urban centers and Jind-safidon highway. The triangular shape of the villages has developed at the triangular junction of the Road.

The square shape (39.43 %) and few variations associated with it are common in the regions of compact type of settlements. This is followed by the rectangular pattern (23.14 %) which has maximum concentration in the southern sector of the study area. Semi-circular shape is confined to 17.17 % of the total
Figure 4.4: Jind Plain Village Patterns

INDEX
- Square
- Rectangular
- Semi-Circular
- Circular
- Linear
- T-Shape
- L-Shape
- Triangular
- Urban Area

N

0 10 Kms.
villages. The linear pattern (6.57%) mostly occurring in the southwestern zones of the study region, whereas circular pattern is found in 6.0% of the total villages. L and T shape is found in southern sector while triangular pattern is observed in northern sector of the Jind Plain. The zone wise pattern of villages is shown in the table 4.2.

**TABLE NO. 4.1**

**JIND PLAIN**

**PATTERNS OF RURAL SETTLEMENTS**

<table>
<thead>
<tr>
<th>PATTERNS</th>
<th>No. of Villages</th>
<th>%age of Villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Square</td>
<td>138</td>
<td>39.43</td>
</tr>
<tr>
<td>Rectangular</td>
<td>81</td>
<td>23.14</td>
</tr>
<tr>
<td>Semi-circular</td>
<td>62</td>
<td>17.17</td>
</tr>
<tr>
<td>Linear</td>
<td>23</td>
<td>06.57</td>
</tr>
<tr>
<td>Circular</td>
<td>21</td>
<td>06.00</td>
</tr>
<tr>
<td>L-shape</td>
<td>10</td>
<td>02.86</td>
</tr>
<tr>
<td>T-shape</td>
<td>08</td>
<td>02.29</td>
</tr>
<tr>
<td>Triangular</td>
<td>07</td>
<td>02.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>350</td>
<td>100.00</td>
</tr>
</tbody>
</table>

*Source: Compiled by Author.*

**GEOMETRICAL SHAPE ANALYSIS:**

The visible estimate of village shapes described in the preceding pages in the present chapter involves subjectivity of the researcher. There cannot be a precise set of differences between a rectangular and square pattern of villages. Similarly, there may be subjectivity in proving of a village in circular or polygonal. So, more objective criteria should be selected to avoid this subjectivity and a methodology be adopted where personal bias is removed. Accordingly, the consideration of village shape by built-up area should be replaced by permanent village boundaries.
which includes total shape of the village i.e. field, barren space and built-up area (settlement) etc. The analyses based on village boundaries are also classified as lattice analysis pioneered by Christaller (1933) and Losch (1954).

The present analysis of geometrical shape in based on the 'elementary packing theory' which defined by R.L. Singh and Rana, P.B. Singh (1975) into two ways, efficiency of movement as measured by the distance from the center to the outlying parts with in the territory, and efficiency of boundaries as measured by the territory perimeter. The later approach is more important in applicability, because decision and movement are closely associated with the village boundaries.

The analysis of shape was firstly initiated by Thompson (1917) in his classic work, which was later on adopted by Miller (1953) in the study of drainage basins. He was expressed as the ratio of the area of the drainage basin $ab$, to the area of the circle having same parameter $AC$, that is $S = AB/AC$.

The same formula has been adopted by Haggett (1965) in his study of Brazilian countries.

Shape index ($S$) of a village concerned may be expressed as the ratio of the area of that village $A$, to the area of the circle with longest axis $(L)$ as a perimeter,

$$S = A/\pi R^2 \text{ or } S = 1.27 A/L^2$$

Gibbs (1961) has used this formula considering that shape is an index of the percentage of the circle with longest axis as a perimeter, expressed as $S = 100A/ (L/2)^2$. Haggett's formula has been adopted by Rasheed (1972) in the shape analysis of a district of Bangladesh.

Similarly, Simmon (1962) and Boyce and Clark (1962) have analysed the shapes of urbanised area analysed the shapes of urbanised area rather than
population itself in the frame of circular geometry, while Wilkins and Shaw (1971)\textsuperscript{28} have considered the population attributes as well as urbanised area. R.L. Singh and Rana, P.B. Singh (1975)\textsuperscript{29}, R.C. Tiwari (1984)\textsuperscript{30}, A.K. Singh (1985)\textsuperscript{31}, and Karan Vir (1992)\textsuperscript{32} have used Miller's formula, because his formula is found more appropriate for the shape analysis of Indian villages.

**TABLE NO. 4.2**

**JIND PLAIN**

**ZONE WISE VILLAGE PATTERNS OF SETTLEMENTS**

<table>
<thead>
<tr>
<th>Shape</th>
<th>North-north eastern</th>
<th>North-eastern</th>
<th>N-north western</th>
<th>North-western</th>
<th>South-eastern</th>
<th>South-central</th>
<th>South-western</th>
</tr>
</thead>
<tbody>
<tr>
<td>Square</td>
<td>17(38.8)</td>
<td>19(50.0)</td>
<td>20(32.8)</td>
<td>17(42.5)</td>
<td>11(40.7)</td>
<td>21(36.8)</td>
<td>33(40.2)</td>
</tr>
<tr>
<td>Rectangular</td>
<td>06(13.3)</td>
<td>03(7.9)</td>
<td>14(23.0)</td>
<td>09(22.5)</td>
<td>06(22.2)</td>
<td>16(28.1)</td>
<td>27(32.9)</td>
</tr>
<tr>
<td>Semi-circular</td>
<td>11(24.4)</td>
<td>10(26.3)</td>
<td>10(16.4)</td>
<td>10(25.0)</td>
<td>01(3.7)</td>
<td>11(19.3)</td>
<td>09(11.0)</td>
</tr>
<tr>
<td>Circular</td>
<td>06(13.3)</td>
<td>01(2.6)</td>
<td>11(18.0)</td>
<td>02(5.0)</td>
<td>0(0.0)</td>
<td>01(1.8)</td>
<td>0(0.0)</td>
</tr>
<tr>
<td>Linear</td>
<td>03(6.7)</td>
<td>03(7.9)</td>
<td>04(6.6)</td>
<td>01(2.5)</td>
<td>01(3.7)</td>
<td>03(5.3)</td>
<td>08(9.8)</td>
</tr>
<tr>
<td>L-shape</td>
<td>0(0.0)</td>
<td>01(2.6)</td>
<td>01(1.6)</td>
<td>0(0.0)</td>
<td>04(14.8)</td>
<td>02(3.5)</td>
<td>02(2.4)</td>
</tr>
<tr>
<td>T-shape</td>
<td>0(0.0)</td>
<td>0(0.0)</td>
<td>0(0.0)</td>
<td>0(0.0)</td>
<td>03(11.1)</td>
<td>03(5.3)</td>
<td>02(2.4)</td>
</tr>
<tr>
<td>Triangular</td>
<td>02(4.4)</td>
<td>01(1.6)</td>
<td>01(2.5)</td>
<td>01(2.5)</td>
<td>01(3.7)</td>
<td>0(0.0)</td>
<td>01(1.2)</td>
</tr>
<tr>
<td>Total</td>
<td>45(100.0)</td>
<td>38(100.0)</td>
<td>61(100.0)</td>
<td>40(100.0)</td>
<td>27(100.0)</td>
<td>57(100.0)</td>
<td>82(100.0)</td>
</tr>
</tbody>
</table>

**Note:** Bracketed figures are show percentages.

Source: Compiled by Author.

The index value varies from 0.0 (minimum) to 1.0 (maximum), which corresponds to point location and a circle respectively. Other forms vary within the range of 0.0 to 1.0. Miller has also given values for three theoretical lattices that is 0.42 for triangular, 0.64 for square and 0.83 for hexagonal shapes.
TABLE NO. 4.3
JIND PLAIN
SHAPE INDEX

<table>
<thead>
<tr>
<th>Index Group</th>
<th>No. of Villages</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0-0.1</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>0.1-0.2</td>
<td>19</td>
<td>05.43</td>
</tr>
<tr>
<td>0.2-0.3</td>
<td>24</td>
<td>06.86</td>
</tr>
<tr>
<td>0.3-0.4</td>
<td>31</td>
<td>08.86</td>
</tr>
<tr>
<td>0.4-0.5</td>
<td>29</td>
<td>08.28</td>
</tr>
<tr>
<td>0.5-0.6</td>
<td>93</td>
<td>26.57</td>
</tr>
<tr>
<td>0.6-0.7</td>
<td>52</td>
<td>14.86</td>
</tr>
<tr>
<td>0.7-0.8</td>
<td>36</td>
<td>10.29</td>
</tr>
<tr>
<td>0.8-0.9</td>
<td>34</td>
<td>09.71</td>
</tr>
<tr>
<td>0.9-1.0</td>
<td>32</td>
<td>09.14</td>
</tr>
<tr>
<td>Total</td>
<td>350</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Compiled by Author.

The shape value of 354 villages of Jind Plain are represented in histogram (Fig. 4.5). The number of villages are expressed only 'Y' axis, and the shape index is expressed on 'X' axis on simple scale. The majority of the villages (41.43 %) are lying between shape index value of 0.6 to 0.7. This is mainly due to rectangular system of land division (Bigha system). The statement in further confirmed by the presence of 36 (10.29 %) and 66 (18.85 %) village recording near hexagonal and near circular to circular shape respectively. About 60 (17.14 %) villages falls under the category of 0.4 to 0.5 shape index, while 19 (0.5.43 %) villages have elongated shapes (01 to 0.2) and 24 (06.86 %) villages falls in the category of 0.2 to 0.3 shape index. The number of villages and index groups is also expressed in table 4.3.
JIND PLAIN
SHAPE CHARACTERISTICS IN RELATION 
TO LATTICE ZONES

Figure - 4.5
MAN AND HOUSE RATIO:

House occupancy reflects the role of population, availability and price of land, economy of the village etc. Normally, a house with a normal family size will exhibit a density of four-five persons. A family constitutes of husband, wife and children. However, in the villages families usually live together and the parents and brothers and sisters also form the total lot living in a house. Accordingly, the average value of a normal house will be six to seven persons per house. The village having more than seven members per house considered under low economic status while lower figure (four-five persons/house) will reveal higher economic status.

DENSITY OF RURAL POPULATION PER INHABITED HOUSE:

The density of rural population per inhabited house of Jind Plain in 1991 is shown in the map (Fig. 4.6). The range varies from 4 persons/house to 10 persons per house. The whole range of density of rural population per house is divided into five categories, that is;

(i) Very high density having more than 8 persons/house.
(ii) High density having 8 persons/house.
(iii) Moderate density having 7 persons/house.
(iv) Low density having 6 persons/house.
(v) Very low density having less than 6 persons/house.

(i) Areas of very High Density of Rural Population: (> 8 persons per house)

The very high density of rural population per house is occupied by nine villages and confined in scattered form in Jind Plain, which covered 2.57 % of the total villages. The highest density of rural population per inhabited house is found in Kheri Bulanwali (154) i.e. 10 persons/house, followed by Aftabhgarh (333),
JIND PLAIN
DENSITY OF RURAL POPULATION
FOR INHABITED HOUSE
1991

Figure - 4.6
Kahna Khera (60), Wazir Nagar (132) etc. This is due to proximity of urban centers. About 70 per cent of population engaged in agricultural activities. Lower economic status is also responsible for high density of population per house in these villages.

(ii) **Areas of High Density of Rural Population: (8 persons per house)**

High density having 8 persons/house is found in 24 villages, which covered 6.86 % of total villages. The high occupancy is found in villages mainly Jhalehra (33), Fullan Kalan (36), Lochab (40), Nehra (39), Frain Khurd (52), Sachan Khera (53), Sunderpura (55) etc. All the villages are situated in the west of Narwana town and form a continuous belt. Most of the villages have small areal size. High occupancy is mainly confined in northern sector and southwestern zone of the study region.

(iii) **Areas of Moderate Density of Rural Population: (7 persons per house)**

The moderate density of population/house that is 7 persons/house is confined in whole of the region of the Jind Plain occupied by 212 villages, which covered 60.57 % of total villages. Most of the population under this category can be considered as normal in the study area because of large number of villages falls under this category. Considering the joint family and relating large area of the houses, the figure of 7 persons/house can also be considered as normal.

(iv) **Areas of Low Density of population: (6 persons per house)**

Low density of population/house is found in 80 villages, which covered 22.86 % of the total villages of study region. The villages kharkara (353), Todi Kheri (347), Khatla (344), Sindhvi khera (234), Kalawati (300) etc. are the examples of this category. Most of the villages are confined west of the safidon town in the southern sector and some villages in scattered form of around the urban
centers like Jind and Kalayat. Comparatively better educational facilities economic conditions are responsible factor for low density of rural population per house.

(v) Areas of Very Low Density of Rural Population: (< 6 persons/house)

The category of very low density of population/house that is less than 6 persons/house is found in 25 villages i.e. 7.14 % of the total inhabited villages. The low density is confined mainly in southern sector around the Jind City, Safidon and Julana towns. The lowest density of rural population per house is Bidakhdalwa (139) i.e. 4 persons/house followed by Pindara (222), Birbaraban (219) Dubai (14), Narwana rural (64) etc. More than 60 per cent of the population is engaged in services other than agriculture. The occupation of non-agricultural nature earns more income and hence, more houses are constructed resulting in low density of population per house.

In general, we can say that whole of the study region is under third category that is moderate density having 7 persons per house.

The zone-wise house occupancy during 1961 and 1991 are expressed in the table 4.4 and 4.5 respectively.

In 1961, the house occupancy in northern sector was 6 persons/house while it was 7 persons/house in southern sector. The lowest house occupancy was observed in northeastern zone i.e. 5 persons/house in the study region in 1961. On the other hand, northwestern zone has highest house occupancy i.e. 8 persons/house. The main cause of this high occupancy of rural population was more people engaged in agricultural activities, (cultivators and agricultural labourers), low economic status, low literacy rate etc. Southcentral and southwestern zones have moderate house occupancy i.e. 7 persons/house. While,
north-northeastern, north-northwestern and southeastern zones have observed low house occupancy i.e. 6 persons/have during 1961.

In 1991, the study region has recorded moderate house occupancy i.e. 7 persons/house except southeastern zone, which has low house occupancy i.e. 6 persons/house.

TABLE NO. 4.4
JIND PLAIN
ZONE WISE HOUSE OCCUPANCY

<table>
<thead>
<tr>
<th>MICRO ZONES</th>
<th>OCCUPIED HOUSES</th>
<th>POPULATION</th>
<th>HOUSE OCCUPANCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>North- Northeastern</td>
<td>13384</td>
<td>80853</td>
<td>6.0</td>
</tr>
<tr>
<td>North- Eastern</td>
<td>11879</td>
<td>59457</td>
<td>5.0</td>
</tr>
<tr>
<td>North- Northwestern</td>
<td>13867</td>
<td>88811</td>
<td>6.4</td>
</tr>
<tr>
<td>North- Western</td>
<td>8956</td>
<td>73071</td>
<td>8.2</td>
</tr>
<tr>
<td>South- Eastern</td>
<td>3864</td>
<td>23760</td>
<td>6.2</td>
</tr>
<tr>
<td>South- Central</td>
<td>11659</td>
<td>78801</td>
<td>6.9</td>
</tr>
<tr>
<td>South- Western</td>
<td>13970</td>
<td>97684</td>
<td>7.0</td>
</tr>
<tr>
<td>JIND PLAIN</td>
<td>77579</td>
<td>502437</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Source: Compiled by Author.
TABLE NO. 4.5
JIND PLAIN
ZONE WISE HOUSE OCCUPANCY
1991

<table>
<thead>
<tr>
<th>MICRO ZONES</th>
<th>OCCUPIED HOUSES</th>
<th>POPULATION</th>
<th>HOUSE OCCUPANCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>North- Northeastern</td>
<td>21288</td>
<td>144234</td>
<td>6.8</td>
</tr>
<tr>
<td>North- Eastern</td>
<td>19668</td>
<td>135157</td>
<td>6.9</td>
</tr>
<tr>
<td>North- Northwestern</td>
<td>25522</td>
<td>177820</td>
<td>7.0</td>
</tr>
<tr>
<td>North- Western</td>
<td>16847</td>
<td>116448</td>
<td>6.9</td>
</tr>
<tr>
<td>South- Eastern</td>
<td>7097</td>
<td>45712</td>
<td>6.4</td>
</tr>
<tr>
<td>South- Central</td>
<td>22338</td>
<td>147359</td>
<td>6.6</td>
</tr>
<tr>
<td>South- Western</td>
<td>29177</td>
<td>199625</td>
<td>6.8</td>
</tr>
<tr>
<td>JIND PLAIN</td>
<td>141937</td>
<td>966355</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Source: Compiled by Author.

CHANGE IN HOUSE OCCUPANCY:

The change in house occupancy during 1961-1991 is also expressed in the table 4.6.

The highest growth in house occupancy is recorded in northeastern zone i.e. 2 persons/house during 1961-1991, while in north-northeastern and north-northwestern zones have 1 person/house. In southern sector, southeastern, southcentral and southwestern zones have no changes in house occupancy during 1961-91. But northwestern zone has recorded negative change. The house occupancy has been recorded from 8 persons/house to 7 persons/house during the proved of 30 years i.e. 1961 to 1991.

RELIGIO - RITUAL MODEL:

The concept of social space is very relevant in the study of Indian villages. It is governed by several components of social behavioral trends. These trends are expressed in the layout of residential units, streets, sitting, location of public
<table>
<thead>
<tr>
<th>MICRO ZONES</th>
<th>HOUSE OCCUPANCY</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1961</td>
<td>1991</td>
<td>CHANGE</td>
</tr>
<tr>
<td>North- Northeastern</td>
<td>6.0</td>
<td>6.8</td>
<td>0.8</td>
</tr>
<tr>
<td>North- Eastern</td>
<td>5.0</td>
<td>6.9</td>
<td>1.9</td>
</tr>
<tr>
<td>North- Northwestern</td>
<td>6.4</td>
<td>7.0</td>
<td>0.6</td>
</tr>
<tr>
<td>North- Western</td>
<td>8.2</td>
<td>6.9</td>
<td>-1.3</td>
</tr>
<tr>
<td>South- Eastern</td>
<td>6.2</td>
<td>6.4</td>
<td>0.2</td>
</tr>
<tr>
<td>South- Central</td>
<td>6.8</td>
<td>6.6</td>
<td>-0.2</td>
</tr>
<tr>
<td>South- Western</td>
<td>7.0</td>
<td>6.8</td>
<td>-0.2</td>
</tr>
<tr>
<td>JIND PLAIN</td>
<td>6.5</td>
<td>6.8</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Source: Compiled by Author.
buildings and other visible features in the village landscape. Hindu social organization is governed pervasively by the caste system with all its myriad of hierarchy and ranking of Jatis based on what we may call the religio-ritual model. There are differential patterns of religio-ritual distances among various castes and Jatis in villages of different localities and regions\(^3\). The ideas of four varnas, the Panchamas (outcaste or the untouchables), the caste and Jati system, and the jajmani system and notion of pollution all these connote a sense of a series of ritual distances.

Traditionally and theoretically also there is a Brahman-untouchable ritual continuum in which all other various castes occupy different niches; these placements, however, in middle rungs of ritually determined social scale, vary in different regional and local structural model\(^3\). The Brahmans occupy the highest rank in the ritual hierarchy while the untouchables are on the lowest rungs, though these two groups are themselves, like other middle castes, a conglomerate of various sub-castes and Jatis. Brahmans are ubiquitously found because every Hindu village requires their services as priests, educationists etc. So, they ‘tend to spread out to accommodate their would be patrons’\(^3\). Since ritual distance involves the stigma of pollution, which may be incurred by contact through food or drink or also as in southern India by distance, which is called ‘distance pollution,’ \(^3\) the model takes into consideration how far the actual spatial patterning is affected as such. It is notable that the notion of pollution does not put stigma on the lower rungs of the ritual scale only but also it travels upward. If a Brahman enter the quarters of the Holeyas ‘they turn put in a body to slipper him, in former times it is said to death’, while a party of Brahman who passed through a paraiyan hamlet had to run to escape cowpats and broomsticks because contact with them meant ruin to paraiyans\(^3\). In fact caste taboos are
stricter as one goes down in the social scale. High-caste Hindus are less particular about their water, than castes of lower social position and ‘restriction on intercourse increase as one goes from the top to the bottom of the caste system’.

As such, the morphological pattern of the Indian village have been vitally and profoundly governed by the course and conjunction of our social, cultural, economic, and political history which has prolonged over millennia of years.

There are several references to detailed inscription of the Indian village of classic period, but the systematic description of Indian village is found in Kautilya's Arthasastra38. Afterwards, in modern context the first systematic work was initiated by Baden Powell (1886)39 and Mukerjee (1968)40. Singh's (1955)41 comprehensive work related with Middle Ganga Valley village.

Singh (1985)42 selected six villages of Ballia district, namely; Zirabasti, Haldi, Gaighat, Nariangarh, Sultanipur and Fakarutola and observed that structural articulation system among the village is the product of two factorial sets, i.e. religio-ritual norms as model of distance maximization, and secular norm as a model of distance minimization. Tiwari (1984)43 selected four villages of the Lower Ganga-Yamuna Doab viz; Saunsari, Singpur, Sangawali and Pura Diwan (Farrukhabad district) to illustrate the religio-ritual model and he found that the nucleus of the village is usually occupied by high castes while subordinate castes have peripheral locations. Singh (1998)44 also selected four villages, namely; Naini, Mahui, Majhanpura and Janakpur to test the religio-ritual model. He observed that the model affects the socio-spatial structure of villages but due to development of services and infrastructural facilities the model have less impact on villages.
In the present study only two villages have been selected for testing the **religio-ritual model** that is 'Gosian Khera' and 'Rajana' which are dominated by Jat and Backward class (Bairagi) respectively. The two villages were selected on the basis of dominant castes in the plain i.e. Jats and Backward castes.

**SOCIO-SPATIAL STRUCTURE OF VILLAGES:**

**GOSIAN KHERA:**

The village Gosian Khera lies between 29°15' 53" North latitude and 76°20' 56" East longitude in Julana Tahsil of Jind district. It is situated on the Rohtak-Sangrur State Highway No. 15. It is located towards north from Julana at a distance of 11 kilometers and towards south from Jind city at a distance of 17 kilometers.

The village Gosian Khera bounded by village Kinana in the north, Gatauli in the south, village Shamloo Kalan in the east and by Burdehar in the southwest.

At the time of survey according to village Patwari records, the village has total Population of 1646 person comprising 872 males and 814 females, having a total area of 454.05 hectares. The village 'abadi' (settlement) is confined in the 'Phirini' (the boundary of the area marked for residential purposes, which also included some fallow and common lands or Shamlat). The village has 288 occupied residential houses.

The village Gosian Khera has mainly three **Pannas** (Mohallas), namely; (i) Sihinmar, (ii) Punwar, and (iii) Moohna. Besides these the village has two main **Thoolas** called as 'Luxhman ka thoola' (Punwar and Moohna clan) and 'Sihinmar ka thoola' (Sihinmar clan).

The village Gosian khera is multi castes consisting of nine castes at time of survey. All the castes belong to Hindu religion. Jat is the predominant caste in the
village. Other castes/communities in the village are Saini, Dhanak, Khatti, Chamar, Brahman, Nai, Kumhar and Lohar.

The language of the people of this village is Hindi and main dialect is Haryanvi. Every caste in the village primarily has its traditional occupation. Jat, Brahman, Saini, Chamar were agriculturists at the time of survey. According to villagers, about 20 years ago, in the village every castes have own agricultural land but now dominating castes like Jat, Saini and Brahman etc. have own agricultural land. Other castes like Dhanak, Kumhar etc. have sold their agricultural land to other people in the same village, because they are engaged in non-agricultural activities. Since they could not look after the low productive land due to poor economic conditions.

At present, because of educational awareness and development of other infrastructural facilities, job opportunities, many persons given up their traditional traits and have shifted to other occupations. People from major castes like Jat, Saini, and Chamar etc. taken up teaching, police, army and some other respectable posts also. Younger generations have joined higher education. Even persons belong to Jat community settled also in abroad (one in England and other in Newzealand). Many persons belonging to lower castes started driving auto-rickshaws, Jeeps etc. to earn their livelihood. Lower castes leave their traditional occupations and engaged in other activities for example earlier Kumhar used to make earthen pots and supply them to the villagers but now they leave their pushtaini (traditional) work. Presently only one member of the family purchase the pots from the market or outside the village and supply it in the village. Other members are engaged in other occupations.
NUMBER OF HOUSEHOLDS:

According to the village records (2001) there were 288 occupied residential houses in the village. There are nine different castes living together in the village. Jat claim the largest number of 176 household accounting for 61.1% of the total households, followed by Sainis 39 households (13.5%). These two castes occupy about three/fourth i.e. 75% of the total households. Dhanaks have 29 (10.1%) households. Among the remaining 44 (15.3%) households, 16 household belong to Khatti, 9 to Nai (2.1%) 4 to Kumhar (Potters), and only, 1 to Lohar (0.3%). The caste-wise distribution of occupied residential houses is also expressed in table 4.7.

<table>
<thead>
<tr>
<th>CASTES</th>
<th>NO. OF HOUSES</th>
<th>IN PER CENT</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jat</td>
<td>176</td>
<td>61.1</td>
<td>I</td>
</tr>
<tr>
<td>Saini</td>
<td>39</td>
<td>13.5</td>
<td>II</td>
</tr>
<tr>
<td>Dhanak</td>
<td>29</td>
<td>10.1</td>
<td>III</td>
</tr>
<tr>
<td>Khatti</td>
<td>16</td>
<td>5.6</td>
<td>IV</td>
</tr>
<tr>
<td>Brahman</td>
<td>09</td>
<td>3.1</td>
<td>V</td>
</tr>
<tr>
<td>Chamar</td>
<td>08</td>
<td>2.8</td>
<td>VI</td>
</tr>
<tr>
<td>Nai</td>
<td>06</td>
<td>2.1</td>
<td>VII</td>
</tr>
<tr>
<td>Kumhar</td>
<td>04</td>
<td>1.4</td>
<td>VIII</td>
</tr>
<tr>
<td>Lohar</td>
<td>01</td>
<td>0.3</td>
<td>IX</td>
</tr>
<tr>
<td>Total</td>
<td>288</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

Source: Personal Survey with village Patwari.
SETTLEMENT PATTERN:

The settlement pattern of different castes in Gosian Khera is according to their social status. The general pattern is that socially higher castes occupy the central place in the village. The pattern of residential segregation of different castes is clearly marked the caste areas being separated from each other. Jats which is a dominating caste, situated in the core of the village while, lower castes like Dhanak, Chamar, Nai settled at periphery of the village (See Fig 4.7). Socially low castes are settled on the outskirts of the village separating these castes from the main village by a street. The members of the same caste have a tendency of living near one another. This gives the appearance of a cluster constituted by the household of one caste like Dhanak and Chamar.

It seems that the morphogenesis of Gosian khera has followed the growth in north-south directions, because of water bodies (ponds) on both the extreme corner and development of infrastructural facilities like school, water tanks, Vaternity Hospital etc. in the south. Brahman settled separated by a west trending street, Dhanak settled in a separate enclave in the south.

In the past major dominated castes like Jat, Saini lived in their ancestral houses. Subsequently, there were divisions and sub-divisions in the family and in close proximity to one another. Some families have shifted outside the main village and constructed their houses away from the ancestral house, because of the pressure of increasing number of persons in the ancestral houses. Some houses of Dhanak, Khatti and Nai are also found in the main village along with the Jats. They have been living for many generations. Caste-wise patterns of settlement are shown in the map (Fig. 4.7).
RAJANA:

The village Rajana lies between 29° 20' 36" North latitude and 76° 30' 12" East longitude in Safidon Tahsil of Jind district. It is situated on the Jind-Safidon State Highway No.14. It is located towards west from Safidon at a distance of 14 kilometers and towards east from Jind city at a distance of 22 kilometers.

The village Rajana bounded by village Budha Khera in the east, Beri Khera in the northeast, village Jamni in the west and by Kalwa in the southwest.

According to village Patwari records (2001), the village has total population of 3047 persons comprising 1611 males and 1436 females, having a total area of 795 hectares. The village 'abad' (settlement) is confined in the area of 105 hectares with in the Phirini. The village has 515 occupied residential houses.

The Rajana is divided in two parts, i.e. 'Bara Rajana' and 'Chotta Rajana'. The village Rajana is mainly divided in five Pannas (Mohallas), namely; (i) Ullahania (migrated from Ullahana village), (ii) Malikpuria (migrated from Malikpur village), (iii) Sangwan (migrated from Bittana village) in Chotta Rajana, (iv) Babawala and (v) Rupawara in Bara Rajana. First two and last two pannas are belong to Balragi caste and one (Sangwal clan) belong to Jat community.

The village Rajana is also multi castes consisting of 17 castes at time of survey. The castes belong to Hindu and Muslim religions. The village mainly Hindu religion dominated. Bairagi is the predominant caste in the village. Other castes/communities in the village are Chamar, Dhanak, Jat, Gimmer, Brahman, Saini, Balmiki, Kumhar, Khatti, Nai, Lohar, Ahir, Bania, Doom, Punjabi and Muslim. Bara Rajana is dominated by Bairagi, Chamar and Dhanak castes, while Chotta Rajana is dominated by Bairagi and Jat.
The language of the people of this village is also Hindi and main dialect is Haryanvi. Every caste in the village primarily has its traditional occupation. Bairagi, Jat, Chamar and Dhanak were agriculturists in 2001. Most of the agricultural land is occupied by Bairagi and Jat while Chamar and Dhanak have very small share of agricultural land.

The people of other castes have very poor economic conditions, so they have not agricultural land and most of the people are working as agricultural labourers.

Presently, because of educational awareness and development of other infrastructural facilities, job opportunities, many persons given up their traditional traits and have shifted to other occupations in Rajana village also. People from major castes like Bairagi, Chamar, Jat etc. taken up teaching, police, army, state roadways and some other respectable posts also. Some persons, belongs to Bairagi caste reach on the higher posts in army. Younger generations have joined higher education. Many persons belonging to lower castes started driving auto-rickshaws, Jeeps etc. to earn their livelihood. Some families of lower castes doing their traditional occupations like. Chamar, Kumhar, Nai etc. But most of the people of these castes leave their traditional occupations and engaged in other activities. Younger generation of lower castes get higher education and turn to other occupations.

NUMBER OF HOUSEHOLDS:

According to the village records (2001) there were 515 occupied residential houses in the village. Bara Rajana has 365 occupied residential houses, while 150 residential houses in Chotta Rajana.

There are 17 different castes living together in the village. Bairagi claim the largest number of 229 households accounting for 44.5 % of total households,
followed by Chamar and Dhanak each have 52 households (10.1 %). These three castes occupy about 65% of the total households. Jats have 37 (7.2 %) households. Among the remaining 145 (28.1 %) households, 29 households belong to Gimmar, 25 to Brahman (4.9 %), 24 to Saini (4.7 %), 15 to Balmiki (2.9 %), 14 to Kumhar (2.7 %), 9 to Khatti (1.7 %) and same number to Nai, 7 to Lohar (1.7 %) and same number to Doom and only 1 to Punjabi (0.2 %). Muslim have only 4 households (0.8 %) of the total households. The caste-wise distribution of occupied residential houses is also expressed in table 4.8.

**SETTLEMENT PATTERN:**

The settlement pattern of different castes in Rajana is according to their social status. The general pattern is that socially higher castes occupy the central place in the village. The pattern of residential segregation of different castes is clearly marked the caste area being separated from each other. Bairagi which is a dominating caste situated in the core of the both parts of village Rajana while, lower castes like Dhanak, Chamar, Nai, Balmiki, Saini settled at the periphery of the village (Fig. 4.8). Socially low castes are settled on the outskirts of the village separating these castes from the main village by a street. The members of these castes have a tendency of living near one another. This gives the appearance of a cluster constituted by the household of one caste like Dhanak, Chamar, Balmiki and Saini.

It seems that the morphogenesis of Bara Rajana has followed the growth in north, west and south-west directions, and Chotta Rajana has followed the growth in north-south directions, because of water bodies (canal, Ponds) and development of infrastructural facilities like Vaternity Hospital, Health sub-center etc. in north, High School in the west in Bara Rajana. A canal divided the village into two segments like Bara Rajana and Chotta Rajana. The growth of Chotta Rajana is due
JIND PLAIN
VILLAGE RAJANA
MORPHOLOGY, CASTE WISE DISTRIBUTION OF HOUSES
2001

Figure - 4.8
to canal in the north, primary school, water tank on the extreme corner of northeast, and transport facility (State Highway No. 14) in south.

**TABLE NO. 4.8**  
**JIND PLAIN**  
**VILLAGE RAJANA**  
**DISTRIBUTION OF OCCUPIED RESIDENTIAL HOUSES**  
**2001**

<table>
<thead>
<tr>
<th>CASTES</th>
<th>NO. OF HOUSES</th>
<th>IN PER CENT</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bairagi</td>
<td>229</td>
<td>44.5</td>
<td>I</td>
</tr>
<tr>
<td>Chamar</td>
<td>52</td>
<td>10.1</td>
<td>II</td>
</tr>
<tr>
<td>Dhanak</td>
<td>52</td>
<td>10.1</td>
<td>II</td>
</tr>
<tr>
<td>Jat</td>
<td>37</td>
<td>07.2</td>
<td>IV</td>
</tr>
<tr>
<td>Gimmer</td>
<td>29</td>
<td>05.6</td>
<td>V</td>
</tr>
<tr>
<td>Brahman</td>
<td>25</td>
<td>04.9</td>
<td>VI</td>
</tr>
<tr>
<td>Saini</td>
<td>24</td>
<td>04.7</td>
<td>VII</td>
</tr>
<tr>
<td>Balmiki</td>
<td>15</td>
<td>002.9</td>
<td>VIII</td>
</tr>
<tr>
<td>Kumhar</td>
<td>14</td>
<td>02.7</td>
<td>IX</td>
</tr>
<tr>
<td>Khatti</td>
<td>09</td>
<td>01.7</td>
<td>X</td>
</tr>
<tr>
<td>Nai</td>
<td>09</td>
<td>01.7</td>
<td>X</td>
</tr>
<tr>
<td>Lohar</td>
<td>07</td>
<td>01.4</td>
<td>XII</td>
</tr>
<tr>
<td>Muslim</td>
<td>04</td>
<td>0.8</td>
<td>XIII</td>
</tr>
<tr>
<td>Ahir</td>
<td>04</td>
<td>0.8</td>
<td>XIII</td>
</tr>
<tr>
<td>Bania</td>
<td>02</td>
<td>0.4</td>
<td>XV</td>
</tr>
<tr>
<td>Doom</td>
<td>02</td>
<td>0.4</td>
<td>XV</td>
</tr>
<tr>
<td>Punjabi</td>
<td>01</td>
<td>0.2</td>
<td>XVII</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>515</strong></td>
<td><strong>100.00</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Personal Survey with village Patwari.
In the past major dominated castes like Bairagi, Dhanak, Jat lived in their ancestral houses. Subsequently, there were divisions and sub-divisions in the family and in close proximity to one another. Some families have shifted outside the main village and constructed their houses away from the ancestral house, because of the pressure of increasing number of persons in the ancestral houses. Brahman found in the main village along with the Bairagi, Kumhar also found in the main village along with the Brahman and Bairagi. They have been living for many generations. Caste-wise pattern of settlement is shown in the map (Fig. 4.8).

CHANGE IN MORPHOLOGICAL STRUCTURE:

During varied phases of evolution the hamletization took place on the basis of secular, religio-ritual and then socio-economic diffusion model. R.Y. Singh (1998) highlighted some factors contributing to diffusion and changes in morphological structure. These are as follows;

(i) Disintegration of joint family into nucleus one,
(ii) Loosening the clan and caste solidarity,
(iii) Socio-economic changes in land holding system,
(iv) Less effective role of religio-ritual model,
(v) Removal of the need for defensive agglomeration,
(vi) Technical improvement in water supply conditions,
(vii) Improvement in transport facilities,
(viii) Diversification of occupation and
(ix) Immigration etc.
The aforesaid factors are also responsible for morphological transformation in the present case studies. The author also tried to study the changes in morphological structure of the two selected villages, that is; Gosian khera and Rajana.

**GOSIAN KHERA:**

In 1961, the total population of 559 persons comprised 273 males and 286 females which increased 1646 persons comprising 872 males and 814 females at the time of survey. The village had 44 occupied residential houses in 1961, which increased to 288 residential houses in 2001. The village 'abadi' (settlement) is confined in the area of 42.30 hectares with in the Phirini. The settlement (Abadi) covered the 9.32 % area of the total area of the village.

In 1961, Gosian Khera had only a primary school, which located at the southeast direction but during the forty years i.e. up to 2001, infrastructure like vaternity hospital Mahilla Mandal, water supply tanks have been developed on the southeast direction.

In 1961, there were only five different castes living together. The households of Jat community increased from 25 houses (56.8 %) to 176 (61.8 %) houses, followed by Sainis 10 (22.7 %) to 39 (13.5 %) during 1961 to 2001. In 1961 there was not a single house of Dhanak community but in 2001, 29 (10.1%) houses have been recorded. The number of houses of Khatti community increased from 5 to 16 houses. Brahman 2 to 9 houses and the houses of Nai caste increased from 2 to 6 houses. Dhanak, Chamar, Kumhar and Lohar were not exist in 1961 in this village. They were migrated in this village after the formation of Haryana as a separate state. The caste wise distribution of occupied residential houses is also expressed in table 4.9.
Jats and Sainis have 1st and 2nd ranks in both the decades i.e. 1961 and 2001. The positive change is found in Nai and Brahman communities but the negative change in rank is observed in Khatti caste (table 4.9).

The general pattern of Gosian Khera is that socially higher caste like Jat occupied the eastern core of the village. The pattern of residential segregation of different castes is clearly marked the dominated caste area being separated from each other. Backward castes like Dhanak, Saini, Khatti settled in the western part of the village (Fig. 4.9).

**TABLE NO. 4.9**
**JIND PLAIN**
**VILLAGE GOSIAN KHERA**
**CASTE WISE DISTRIBUTION OF OCCUPIED RESIDENTIAL HOUSES**
**1961-2001**

<table>
<thead>
<tr>
<th>Castes</th>
<th>No. of Houses</th>
<th>In Per Cent</th>
<th>Rank</th>
<th>No. of Houses</th>
<th>In Per Cent</th>
<th>Rank</th>
<th>Change in Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jat</td>
<td>176</td>
<td>61.1</td>
<td>I</td>
<td>25</td>
<td>56.8</td>
<td>I</td>
<td>-</td>
</tr>
<tr>
<td>Saini</td>
<td>39</td>
<td>13.5</td>
<td>II</td>
<td>10</td>
<td>22.7</td>
<td>II</td>
<td>-</td>
</tr>
<tr>
<td>Dhanak</td>
<td>29</td>
<td>10.1</td>
<td>III</td>
<td>0</td>
<td>0.0</td>
<td>-</td>
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<td>III</td>
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<td>Brahman</td>
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<td>V</td>
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<td>IV</td>
<td>+1</td>
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<tr>
<td>Nai</td>
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<td>VII</td>
<td>02</td>
<td>4.5</td>
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<td>44</td>
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</table>

Source: Compiled by Author.
JIND PLAIN
VILLAGE GOSIAN KHERA
MORPHOLOGY, CASTE WISE DISTRIBUTION OF HOUSES
1961

INDEX
- Jat
- Saini
- Dhanak
- Khatti
- Brahman

P  Panchayat Ghar
PS Primary School

Dharamshala

Figure - 4.9
The main settlement rectangular in shape during first phase, developed into square pattern. Transport means are replacing on foot passengers. People now depend more on bicycle, autorickshaw, Jeep, Bus, motorbike etc. The distance from built-up area to farmland has been minimized. Water supply conditions like ponds situated at the extreme corners in the village, which attract the construction of houses. Infrastructural facilities like primary school, maternity hospital, water supply tanks and Mahilla Mandal are situated in the southeast of the village. Due to these facilities the people of the village preferred to construct the new houses in the southern part of the village. Disintegration of joint family into nucleus one and diversification of occupation are also effected the morphology of the village.

RAJANA:

The total population of Rajana village in 1961 was 1292 persons comprised 682 males and 610 females which has increased 3047 persons comprising 1611 males and 1436 females at the time of survey i.e. 2001. The village had 198 residential houses in 1961, which increased to 515 residential houses in 2001. The village 'abadi' (settlement) is confined in the area of 105 hectares with in the Phirini. The settlement (Abadi) covered the 13.21 % area of the total area of village.

In 1961, Rajana had only a primary school, which located in south-west direction but during the forty years i.e. up to 2001, infrastructure like maternity hospital, Mahilla Mandal and primary health sub-center have been developed on the northern sector of the village while high school has been constructed in south-west of Bara Rajana, on the other hand primary school and water supply tank are constructed in south-east of Chotta Rajana.

In 1961, there were, 15 different castes living together. The occupied residential houses of Bairagi community have been increased from 85 to 229
houses, followed by Chamar 22 to 52, Dhanak 14 to 52 houses, Jat 9 to 37, Gimmer 9 to 29 houses, Brahman 13 to 25 houses, Saini 5 to 24 houses, Balmiki 9 to 15, Kumhar 8 to 14, Khatti and Nai 5 to 9 houses, Doom 1 to 2 houses during 1961 to 2001. Ahir and Punjabi were not existed in 1961 in the village. The caste wise distribution of occupied residential houses is also expressed in table 4.10.

TABLE NO. 4.10
JIND PLAIN
VILLAGE RAJANA
CASTE WISE DISTRIBUTION OF OCCUPIED RESIDENTIAL HOUSES
1961-2001

<table>
<thead>
<tr>
<th>Castes</th>
<th>No. of Houses</th>
<th>In Per Cent</th>
<th>Rank</th>
<th>No. of Houses</th>
<th>In Per Cent</th>
<th>Rank</th>
<th>Change in Ranks</th>
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<td>Bairagi</td>
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<td>I</td>
<td>85</td>
<td>42.9</td>
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<tr>
<td>Chamar</td>
<td>52</td>
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<td>II</td>
<td>22</td>
<td>11.1</td>
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<td>Dhanak</td>
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<td>10.1</td>
<td>II</td>
<td>14</td>
<td>7.1</td>
<td>IV</td>
<td>-2</td>
</tr>
<tr>
<td>Jat</td>
<td>37</td>
<td>7.2</td>
<td>IV</td>
<td>09</td>
<td>4.5</td>
<td>VI</td>
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<tr>
<td>Gimmer</td>
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<td>V</td>
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<tr>
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<td>4.9</td>
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<td>198</td>
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Source: Compiled by Author.
JIND PLAIN
VILLAGE RAJANA
MORPHOLOGY, CASTE WISE DISTRIBUTION OF HOUSES
1961

Figure - 4.10
Bairagi and Chamars have first and second rank in both the decades i.e. 1961 and 2001. The positive change is found in Gimmer, Brahman, Balmiki, Kumhar, Khatti, Nai and Bania communities but the negative change in rank have been observed in Dhanaks, Jats, and Sainis. Lohar and Muslim have recorded no change in their rank. (table 4.10).

Finally, it is found that in the selected villages Brahman, Jat and Saini have high socio-economic status. But some changes have occurred due to the awareness of literacy or education, infrastructure of modern technology and various schemes of the down trodden. Lower castes have substantially improved and some families have constructed their houses in the core area or near the available facilities. So, we can say that the religion-ritual model is under going a change, and the economic structure is also changing. This change may become a trend, and it will be a good omen to the emergence of a mixed social culture in the future.
REFERENCE:


37. Ibid. p. 158.


40. Mukherjee, R.K., (1968), Man and his Habitation, Popular, Bombay.


