

## PATTERN OF HUMAN SETTLEMENTS: AN OVERVIEW

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### ABSTRACT

*Settlements represent one of the most dominant man made features on the earth in the process of habitation. In the genetic term settlements are more or less permanent abode of an organism. They also represent "an organized colony of human beings together with the buildings in which they live and the paths and streets over which they travel". Every life style tended to inscribe itself into a typical habitat form. It has also been defined "an all forms of grouping of human habitations as well as the act of peopling a community". Blache defines them as human establishments add colour to landscape, shaper and building material as well as adaptation to a mode of rural life, or urban, agricultural pastoral, all throw light upon man's represent or materialistic, intellectual and technological advancement whereby they satisfy their social biological and needs to adapt themselves to their environment. Thus, the settlement represents the spatial arrangement of various functional activities of man at local level including place of residence, street pattern, community places and others.*

**Keywords:** Habitation, Human Settlements, Habitat Form, Agricultural Pastoral.

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### Introduction

The systematic study of settlement pattern in a region represents the long history of its cultural development in process of habitation. Thus geographical study of human habitat concerns both the external and internal form of the habitation. House and street being the chief elements of occupancy unit become the focal point of the study. The external form of the occupancy unit is related to various locational factors, transport linkages, etc. This reflects the form of settlement as one unit in relation to its surroundings. The internal form of the habitat depends on the site conditions and socio-economic structure of the community. It reflects the architectural styles of the time and culture of its occupants. The gradual modifications in both external and internal form of the settlements take place with the socio-cultural and technological advancement in the area.

### Evolution of Settlement Pattern

The development pattern in a region is not by chance, but it is a matter of time, closely associated with the history of human habitation there. A number of ancient monuments comprising Hindu temples of Shahpurachopar, Gurdor temple and many other places at Shahpuragarh, Bishangarh fort and Manoharpur fort reveal a high standard of art and culture. Most of the early important settlements were established by the then rulers either for their administrative convenience or due to defence strategy with the temple as the land mark. But due to lack of proper regional interlinkages with other parts and sound economic base these places either were ruined or remained more or less stagnant in growth. The impact of various cultures like Budhist, Jain, Muslim etc. can be seen in a few localities only.

Thus the early settlements were mostly located at the foot- hills or along streams and rivulets due to facility of drinking water. A greater part of the history of Shahpura tehsil remained a closed one and the rural country side mostly comprised of tiny 'taparas' scattered all around. It was only during the

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later part of Medieval period and early early British period Shahpura experienced numerous changes in settlements. The construction of roads and opening of schools, dispensaries, post offices, police stations, etc. encouraged the development of habitation around them and also fastened the growth of villages with the advancement of culture, the people realised the drawback of shifting cultivation, hence permanent settlement started to grow. During the British period the settlement operations demarcated the village boundaries with flag stone at various places after survey. The revenue department of the state prepared large scale maps of rural settlements in the last quarter of the 19th Century showing individual plots/fields and habitat sites. This restricted the movement of people from one place to another. With the establishment of an administrative network at district, stations at regular intervals to take care of the security, the people started settling at places where they felt sufficient resources. The facilities were further provided in the post independence period and today the tehsil has a network of settlement patterns of different sizes and people. The development of roads, electricity, water supply system and establishment of marketing, educational, medical and other social amenities have accelerated the development of settlement in the tehsil.

### Settlement Size

Shahpura tehsil is predominantly rural as more than 78.00 per cent of the population lives in villages. The total population of 1,30,356 of the tehsil (1981) resides in 73 settlements which consists of only two small towns, namely Shahpura and Manoharpur, which have been the seats of two principalities of the respective states. The following table shows distribution of settlements according to their size.

**Table 1: Settlement Size Distribution**

S. No.	Population Size	No. of settlements	Percentage Distribution of Settlements According to Population Size
1.	Less than 200	9	698 (0.53%)
2.	200-499	11	4,098 (3.14%)
3.	500-999	14	10,361 (7.94%)
4.	1000-1999	19	27,091 (20.78%)
5.	2000-4999	17	(56,908) (43.65%)
6.	5000 Above	3	33, 266 (25.51%)
	Total	73	1,30,356 (100.00%)

Source: District Census Handbook, Jaipur, Rajasthan, Census of India, 1981.

The above table establishes the fact that the tehsil is predominantly covered by large size settlements as about 70 per cent of the total settlements of the tehsil are above the population size of 2000, while the number of settlements with population of below 2000 is only about 30.00 per cent. The dominance of large size settlements in the tehsil is mainly due to many factors like water supply, fertile soil, better accessibility. The largest percentage of inhabited settlements is in the population range of 1000 to 1999. The minimum in the population range of 5000 to above. Above table shows the distribution of villages in terms of population range.

### Spatial Patterning of Settlements

The study reveals that Shahpura tehsil does not have a uniform settlement pattern all over the tehsil due to interaction of varied physical and cultural factors. Broadly, settlements can be grouped into two ways (i) nature of agglomeration of dwellings in a of dwellings in individual settlement and (ii) arrangement agglomeration.

In the former, houses look piled up at one place well residences remain knitted along streets, while in the later, scattered in relation to their farm. In Shahpura due to diverse physiographic and cultural conditions various types conditions various types of settlements are found. Following five types of settlements can be identified as sub-types of the above two main classifications.

- Compact settlements
- Semi-compact or hamleted cluster settlements
- Hamlets or nucleated settlements
- Sprinkled or dispersed settlements
- Linear settlements.

- **Compact Settlement**

Since the beginning of settling process, the settlement of way have emerged by agricultural communities on this soil of preference of site and surroundings. They are often in the form of compact agglomerations. The advent of modern means of transportation such as metalled roads and the social customs of caste segregation have definitely played important role in deforming the compact nature of such settlements. The salient features of such settlements are closely built dwellings separated by village streets, or paths lanes. This type of settlements in the region are nucleated around a temple and in some cases around a mosque. Shahpura, Manoharpur, Devan and Rampura etc. present the examples of compact settlements.

- **Semi-Compact Settlement**

The semi-compact settlements represent an intermediate stage of compact settlements. In such settlements a few small hamlets are found around some main settlement. These small clusters are linked up with the main settlement by cart-tracks or foot paths. They develop in course of time, due to ease of defence and lack of enough land in the main cluster for new houses. Sometimes due to prevalence of various castes in the area such cluster settlements develop around the main settlement to house different castes as can be seen from the village Kumbawash. Such types can be seen in village Gona-Ka-Sar and Chak-Shyosinghpura. Generally after marriage the new couple moves to the new hut-home. Sometimes due to development of small foci like school, dispensary or temple, etc. a few hamlets are built and thus the semi-compact type of settlements develop. Peepalkhoont developed due to the establishment of police station Panchayat Samiti headquarters outside the main settlement have also encouraged the development of such settlements.

- **Nucleated Settlements**

Nucleated settlements comprise agglomerations few dwellings at a place. In this category 3 or more clusters of dwellings, apparently similar in nature are found contrary to semi-compact dwellings they are not identical to the surrounding hamlets. The scattering of hamlets result mainly due to population pressure, caste system and some times due to individual adventures. Cart tracks and foot paths are the links between the hamlets.

In general, a region of high water table, topography with potentially good agricultural land provide favourable ground for the growth of multi-hamleted settlements. Chak-Sanga-Ka-Was, Chak Dhelawas and Chak Dhanota Nagal etc. are the examples of hamleted settlements in the study area.

- **Sprinkled or Dispersed type of Settlements**

This type of rural settlement is marked by the presence of complete diffusion of home steads over the entire revenue villages and has comparatively longer distance between dwellings as compared to the congestion of plain settlements. In In Shahpura tehsil the dispersed settlements are found in different pockets, with typical characteristics of tiny hamlets scattered at an irregular distance in close association with physical conditions and local resources. The dissected ravine topography and liability to flood and soil erosion are some of the main causes responsible for the creation of such settlements.

- **Linear Type Settlements**

Linear type settlement pattern is also found in the study region. A number of hamlets have a clustering tendency along the streams in the form of string. Such type of settlements are marked in hill region. The presence of seasonal streams with intermitant channels are the main causes for the the presence of this type of settlement pattern. Means of transport have also contributed to the linear tendency of the settlement. Along all the major roads of the tehsil such patterns are usually visible. A number of places like Khora Larkhani, Amarsar, Shahpura and Kant etc. are the living examples of such a pattern.

### **Layout Plan and Shape of Settlements**

The external appearance of the villages is related to number of geographical and cultural factors. The arrangements of dwelling units is guided by water bodies, relief, street and other social amenities. The village cart-tracks and lanes form the skeleton of the internal layout of the village. The buildings located in the space within the skeleton determine the shape and form of the villages. The morphogenesis of these settlements becomes interesting, as the overall form of the village leads to various related phenomena responsible for the evolution of the present form. General pattern of village may be identified after the study of village forms from topographical sheets and revenue maps of sample villages. The form and shape of the villages in the present study have been determined on the basis of the above observations as well as statistical method of shape index calculation.

- Emperical study
- Shape index analysis.
- **Emperical Study**

From the general observation of topographical sheets and study of selected villages the following six patterns are clearly visible in the study area.

- **Rectangular Pattern**

The study of several villages indicates that in Shahpura tehsil is rectangular pattern dominates. Most of the nucleated villages represent this pattern. The factor responsible for this pattern is the distribution of cultivated fields. This is the simplest pattern of development, because the dwelling units are generally constructed within rectangle or square.

A few selected examples of rectangular village. The rectangular form of the village Khori with Sherpura has developed along a large tank. In the west a Katcha cart-track runs at a comparatively higher higher ground also acting as a barrier. Thus the village grew only in the south and east. The other village Dhanota has developed along the cart-track and a road junction as its central point, where a few shops and a temple exist. This village has more or less a square shape.

- **Hollow Rectangular Pattern**

This pattern is similar to the rectangular pattern, except a hollow space in the centre. The factors influencing the rectangular pattern remain the same but a hollow space is created due to special physical or cultural conditions. The presence of a pond or water tank, a temple or a peepal tree with open space for people gathering, accounts for the vacant space. The place of worship is quite an important element, which mostly consists of a large tree and open space around, for folk dances and celebrations. Besides, some historical factors also induce the people to build hollow rectangular villages. In some important villages, the central space is occupied by village Chief's house, like a Haveli comprising a boundary wall and small built-up structure inside. Now in due course of time the family decayed or shifted some where else resulting in ruining the structure. Such sites are uninhabitable due to superstitious belief and so the central space remains vacant.

The village Bishangarh situated along the bank of a stream has also developed a rectangular pattern but the presence of small tank inside the village has provided a hollow space. There is a small temple on the bank of the tank with open space around. The main factor for for development of rectangular pattern has been the presence of a river in the south and a cart-track running parallel to it on the high bank.

- **Triangular Pattern**

Triangular pattern develops due to presence of strong physical barriers on either side i.e. roads, rivers, hills etc., which control the growth of the settlement. The village Nawalpura represents a typical triangular pattern, bounded on two sides by roads, leaving only the diagonal direction for its growth. The road running from north-west to south-east affects the growth in this direction.

- **Circular Pattern**

A true circular pattern is rarely found in the study region. It may be partly circular and can be identified in the case of agglomerated or compact settlements. The circular form of these villages is mostly related to the road pattern and physical factors. Semi circular pattern can also be identified in many villages. The main reasons for development of such a pattern is the meandering river course or water bodies and curved roads.

Ghasipura village which has developed along the along the curved road represents a semi-circular pattern However, the new development along the by-pass road has destroyed the shape as most of the new development is taking place along this road.

- **Radial Pattern**

Radial pattern is somewhat similar to the circular pattern with slight modifications. The village is guided by radiating cart- tracks and lanes with a well defined convergent-point. Such pattern is found in the case of important villages mainly service centres, where converging roads are marked with important central junction like marketing, schools, hospital or other such functions. The village Khora-Larkhani represents typical radial pattern. The village is located at the foothill where forests are present in the north and north-east. The village serves as a contact point for the persons living in the hill and forest area. It has few shops.

#### ▪ T-Shape, L-Shape or String Pattern

The linear pattern of villages develops along streets or rivers in a continuous row. Its shape depends on various factors responsible for their growth. Thus, different linear patterns are shown in the map. T-shape pattern mostly develop at the road tri- junctions, while string pattern develops along steams. On major roads, street pattern of settlement can be identified.

Village Lakhani represents a typical linear settlement pattern. Here two rivers run parallel and a cart tract runs at the water divide of the steams. As the area is forested, a few huts have developed only along the cart-track.

In the other village Jagatpura T-pattern linear settlement may be noticed. The hut-ments have come up along the cart-track making a small T-junction. In the village Chharsa the existing cart- tract forms L-shape so the hutments are constructed following the cart-tract.

#### • Shape Index Analysis

A geometrical pattern of the rural settlements can be measured in terms of the approximate geometrical shape of revenue village boundary. The analysis of shape and form was first initiated by Thomson and used by Miller in the shape analysis of drainage basins Miller in his study concluded that the shape of a drainage basin was expressed as the ratio of the area of the drainage basin to the area of the circle having the same parameter as the basin

i.e.  $S = \frac{AB}{AC}$  where S = Shape Index

AB = Area of the drainage basin

AC = Area of the circle of the same perimeter as of drainage basin

Haggett also applied this formula in his shape analysis of Brazilian countries but by a modification. Accordingly the shape index S of a village may be expressed as the ratio of the area of the village say A to the area of the circle with the longest axis (L) as diameter.

So that  $S = \frac{A}{r^2} = \frac{4A}{L^2}$

The above formula of Haggett has also been adopted by Rasheed<sup>8</sup> in shape analysis of 19 districts of Bangladesh. The above analysis has been used in the present study taking revenue boundary of all the 73 villages of Shahpura tehsil. In this analysis the value of S for three theoretical lattices are 0.42 for triangle, 0.62 for square, 0.83 for hexagon and 1 for circle. The result of the above analysis are shown in following table.

**Table 2: Shape Index and Percentage of Village in Each Population Class**

S. No.	Population Class	% of village	Shape Index	Remarks
1.	Below 200	(9) 12.32	Below 0.3	Elongated
2.	200-499	(11) 15.06	0.3 to 0.5	Triangular
3.	500-999	(12) 19.17	0.5 to 0.7	Square
4.	1000-1999	(19) 26.06	0.7 to 0.9	Hexagonal
5.	2000-above	(20) 27.39	Above 0.9	Circular
Total	(73) 100.00			

The above table reveals that there is general lack of regular hexagonal shape of the villages in the study region. A variety of shapes from elongated triangle, square to circular can be identified. The shape of the villages is mostly governed by the physical character of the area such as rivers, hills, water bodies, etc. This effect can be clearly visualised from analysis of the shape index values in different population regions. The presence of large number of streams has been the governing factor in deciding the shape of the villages throughout the tehsil. This shape has come as a chance factor depending upon the local physical conditions. In the study region the shape value is maximum in the plain populated region.

#### Housing Characteristics

Housing, next to food, is the basic requirement of man. It is the first step representing man's superiority over the natural environment. A house, thus, has a great cultural heritage as it represents the constant struggle of man for his survival over natural environment. In his efforts to shelter himself against the extremes of weather and climate he has, over the ages, evolved many types of dwellings. The agglomeration of houses marks the origin of human settlements. Their character is, therefore, related to the environment and to the cultural heritage of the people.

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