CHAPTER III

SPATIAL ORGANIZATION OF CLAN SETTLEMENTS — A TEMPORAL ANALYSIS

1. MODELS AND THEORITICAL EXPLANATION

2. DIFFUSION OF SAMPLE CLANS AND THEIR SPATIO-TEMPORAL ANALYSIS

3. DISTRIBUTION OF CASTE AND THEIR RANKING
Geography is concerned with man and his work in space-time continuum and the study of diffusion process acting over space through time becomes the core idea of human geography. Moreover, the field of spatial diffusion analysis is closely interlinked with the process analysis and problems of spatial dynamics. In this context, two things are obvious – 'firstly, any thing that moves across geographical space must be carries in some way, and secondly, the rate at which something move over space will be influenced by other things that lie in the way'. These two process attributes may be called as carriers and barriers.\textsuperscript{1} The mechanism of spatial diffusion process is a system having sequential and step process which can be traced through the proper field research and actual analysis of relevant data. Two different type of spatial diffusion may be visualized, although both might be seen together in factual situation viz (i) relocation diffusion (ii) expansion diffusion.\textsuperscript{2} The former occurs when some members of the society at time t change their location from time t to t+1; the latter occurs when new members are added to the population between time t and time t+1, and expand their territory. The expansion type of diffusion is appropriate in the case of settlement growth and spread, but in the initial phase, when


original node has been developing, relocation type of diffusion can be traced out.

In geographic literature the term like 'origin and dispersal'\textsuperscript{1} 'origin and spread'\textsuperscript{2} 'pioneer settlement'\textsuperscript{3} 'pioneer finge', 'Frontier concept'\textsuperscript{5} and 'propagation of innovation waves'\textsuperscript{6} etc. have been initiated, which indicate wide interests of geographers in the field of systematic study of diffusion.

1. MODEL AND THEORITICAL EXPLANATION

Hagerstand's model of spatial diffusion of innovation may be treated as catalyst for the present studies dealing with diffusion problems. He shows that the diffusion of innovation propagates in two dimension: the spatial and social. Considering the first dimension he suggested diffusion cycle into four phase model.\textsuperscript{7}

First a primary stage marks the origin and establishment of initial agglomeration; second a diffusion stage marks the process with strong centrifugal effect and creation of new centre in distant

\begin{itemize}
\item[7.] Hoggardstand, T., Propagation of Innovation Waves, Lund Series (B) in Geography No. 4, (1932), pp.16-17.
\end{itemize}
areas; third, a condensing stage with an equal relative increase in all locations; and fourth a saturation stage shown by a general but slow asymptotic increase towards the maximum. Gritiches discussed innovation diffusion into three phases – origin, diffusion and saturation.¹ Mitchell described the evolution of settlement in East Anglia, marks ‘primary’ settlement located at the river valleys and secondary settlement established on the un-occupied interfluves, the latter being an outgrowth from the former.² Sadner deals with the process in which ‘mother settlement’ serve as basis for later off spring.³ This process has been occurring often in the study region and, the corporate groups (clan-based) founded new settlements by immigration from their mother nodes, due to heavy population pressure, resulting in the expansion of their territory for agriculture and defence purposes.

The most significant presentation in this context has been made by Bylund, the Swedish geographer. While considering the growth and spread of settlements in his induction model in relation to topography, economic and judicial power, he has presented colonization process into two main stages: (i) the first stage, characterized by long distance immigration of settler from outside

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the study region. (ii) short distance colonization from the initial settlements, which was sustained by genealogical studies what he has denoted as 'clone-colonization'. He further assumed that (i) the physical conditions of the land are similar in all areas and (ii) new area will not be occupied until those close to the 'parent settlements' have been occupied. He shows four hypothetical models of settlement diffusion Fig 3.1 focuses a sequence model for spatial diffusion. The fundamental differences between them is in the number and location of parent settlements. His figure D₁ and D₂ are applicable only for a costal type of location, while figure D₃ and figure D₄ for an inland location.

Hudsan also tried to give theory postulation growth, evolution and for form of rural settlement. According to his deduction theory he presented three stages of establishment and growth of rural settlement.¹ First stage colonization, which is characterized by the dispersal into new territory, or into an unoccupied portion of the old environment; second stage spread, which is marked by the increasing population density, creation of new settlement clusters, and external pressure on the environment, both physical and social, third stage competition, which is designated as the tendency to produce great regularity in

settlement pattern and in turn produces one condition for the regular networks of central places.

Kashi N. Singh\(^1\) also presented a 'simulative structural model' showing evolution of rural territory and settlement pattern in eastern Uttar Pradesh. He has analyzed the process of spatial diffusion within the five time period: (i) the first period (generation 1 to 3) may be denoted as phase of establishment of clan centre; (ii) the second (generation 4 through 6) is characterized with the 'establishment of tappas and tappa centre', beyond the core of the area; (iii) in third period (generation 7 through 9) the existing nuclei of settlement may be established into unit of different size and (iv) during the fourth period (generation 10 through 12) new population movements take place within the occupancy area founded by the families of nucleus settler, finally (v) the fifth period (generation 13 through 15) is traced out with the containing growth of population, and remaining patches and narrow strips of forest land area taken under settlement and few new 'tappas' appear in the clan territory.

Thus, by these five time period through 15 generation or about 350 to 400 years the large occupation area of the clan is appropriated for settling. As discussed above the 'Pargana' and

BYLUND'S HYPOTHETICAL MODELS OF SETTLEMENT DIFFUSION

<table>
<thead>
<tr>
<th>D1</th>
<th>COASTAL</th>
<th>D2</th>
<th>INLAND</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

DIFFUSION STAGES
- ■ NUCLEUS
- □ FIRST
- ○ SECOND
- □ THIRD

AFTER BYLUND E 1960

Fig. 3.1
‘Tappa’ centre as well as many villages and hamlets have also come into existence on the landscape. Singh\(^1\) has also used equation in contest of the spatial frame work, considering the notion of length, time and force closely associating attributes of spatial-diffusion. By considering population \(p\), distance \(L\), and Time \(T\), the following equations may be developed:

\[
S = LT^{-1}, \text{ ie., } s = f(p, v, d) \quad \text{..... (1)}
\]

\[
P = PL^2T^{-1} \quad \text{..... (2)}
\]

\[
V = PL^{-1}T^{-1} \text{ i.e., } v = \frac{Kp}{Sd^2} \quad \text{..... (3)}
\]

According to above formula it has calculated to present the method of real situation of spatial-diffusion stages of clan settlements, depending on geological table and available record records in Bharatpur District.

**Theory**

By assuming that the coastal model is not only influence by the physical factor but also by the cultural and social factors, let compare the By Lund's model \(D_1\) and \(D_4\) to the model prepared for the study region. The diffusion of Sinswar Jat clan and Sogarwal Jat clan is not only influence by physical factor but also by the cultural and social factor. There are two types of factors responsible for the coastal like diffusion: (i) Physical (river, forest,

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and diara land) and (ii) cultural (clan territory and land property of the parents etc). In the study area, the social and cultural factors are quite applicable to the coastal like diffusion, but not applicable in all cases.

The clan territory of Sinsiwar clan is surrounded from three sides by the other clan territory i.e. on the north by Chaudhary Jat clan and Meos, on the west by the Sogarwal Jat clan and on the south of the Jat clan of Dhaulpur state. Owing to such limits the coastal like diffusion occurs. Similar conditions are also seen in some Rajput clan which has migrated to other place from study area. The physical factors are not applicable to coastal like diffusion because the some Rajput clan crossed the Yamuna and establish other Taluqa and Jats clan captured the whole study area.

In the case of Chaudhary Jat clan settlements the diffusion process is controlled by the physical factors and is also comparable to Bylund's diffusion model D₁ and D₄. Fig 5.2 shows that the Chaudhary Jat clan is surrounded by some small hills and some very small territories and tilas which also make the territorial boundary.

According to Bylund second assumption “the further area will not be occupied until those close to ‘mother settlement’ have been occupied. It is also quite well applicable to the study area as discussed in the sequence. Major clan settlement of first stage were
establish away from the nucleous within the territory / outside the territorial limits of the clans, while the settlements of the second and the third stage were settled in between the gaps of parent and first stage settlements. It means infilling process is applicable to the study region. The number of daughter settlements went on increasing with every advance in the process of spatial-diffusion except in the model D1 where it is constant. But in the case of Meos settlements, it could be 'terminal' or saturation, which denotes asymptotic growth of settlements. Thus it quite similar to the fourth stage of Hagstrands's model.

Kashi Nath Singh's simulative structural model, showing evolution of rural territorial and settlements patterns in eastern Utter Pradesh into five period through 15 generation is quite well applicable to the diffusion of the Sinsiwar Jat clan settlements. The first period (generation 1 through 3) marks the establishment of clan centre. During the second period (generation 4 to 6) generally all patties have came into existence as is notable from 20 patties in Bharatpur tehsil. During the third period (generation 7 to 9) new settlements were establish. The fourth period (generation 10 through 12) marked the immigration as it is quite similar to the study area. The fifth period (generation 13 to 15) may be denoted with containing growth of population by capturing marginal lands. The clan territory of Bharatpur tehsil fully occupied by the foundation of new settlements as well as through immigration.
The forgoing paragraph reviews the models presented by Bylund, Hagerstrand and Kashi Nath Singh. Thereafter, the spatial-diffusion of the clan settlement has been tentatively grouped into three stages after the establishment of the oriental node: (i) first stage (before A.D. 1600) as phase of colonization (ii) second stage (between 1600-1800) the phase of diffusion (iii) third stage (since A.D. 1800) the phase of competition-cum stratification.

The three spatial-diffusion stages are quite well applicable to the case study area under study but the period is not applicable in some case. For example, in Meos clans settlement diffusion, the period are observed as (i) first stage before (AD 1300) as phase of colonization (ii) second stage (between 1300 – 1600 AD) the phase of diffusion (iii) third stage (since AD 1600) the phase of competition – cum-stratification.

**Present Approach**

The present approach has been based on following formula which depends on the detailed study of genealogical tables, historical records and the field observation. Three factors have been taken into consideration which has influenced the spatial-diffusion of the clan settlement in the study region: (i) population (p) (ii) Distance (L) and (iii) Time (T). The velocity or speed of settlements wave (s) can be express as length per unit of time (e.g. km / year) or
Further the energy of the pioneer population (P) may be defined as the speed of settlement process, the population energy may be taken as dimension.

\[ p = \frac{P}{L^2 T^{-2}} \quad .... \quad (2) \]

But what about the way over which the people moved? In this context perhaps, the viscosity of pioneer area \( v \), can be calculated in distance in a certain length of time, possibly people per km per year or

\[ v = \frac{P L^{-1} T^{-1}}{L^2} \quad \text{i.e.,} \quad v = k \frac{P}{S d^2} \quad .... \quad (3) \]

In the last, the speed of settlement waves may depend on the distance \( d \), from the nucleus which has the simple dimension \( L \).

2. DIFFUSION OF SAMPLE CLANS AND THEIR SPATIO-TEMPORAL ANALYSIS

Here it has been assumed that at least ten families would have immigrated from outside of the study region, each family having at least ten members. There are four clan settlements which has been considered to present a detailed study of spatial-diffusion of clan settlements in the Bharatpur District.

Jat clans are the most influential clan of the eastern Rajasthan. There are different views about the origin of the Jats.
According to one view, the Jats takes their name from Jata melted hair of lord Mahadeo.\(^1\) The Misfiled the word Jat is nothing more than the modern Hindu pronunciation of Yadu or Jadu, to which Krishna belonged and which is now represented by the Jadon Rajput.\(^2\) According to another view, the family of Jadons, a section of Thakurs from which the ruling chief of Bharatpur claimed descent, sprang from Jad, one of the five sons of a Raja in Bengal hundreds of years ago.\(^3\)

The Jats are descendents of early Aryan invaders and they are predominantly found in parts of Bikaner, Jaipur and Marwar. Their presence in Bharatpur is due to more invasions.\(^4\)

**SINSIWAR JAT CLAN**

**Evolution**

It is pertinent to note that erstwhile rulers of Bharatpur belong to Jats Sinsiwar clan and claimed descent from Madan Pal, a Jadon Rajput and third son of Tajan Pal, who ruled in eleventh century AD at Bayana and subsequently acquired possession, which later on formed Karauli Sates. It is said that one of the Madan Pal's descendants, Bal Chand kept a Jat women as his concubine and by her two sons, Bijay and Sijay, who were not admitted into Rajput brotherhood but regarded as Jats. They took

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the name of Sinsiwar from their paternal village, Sinsani (13 km south of Deeg). The Chief of Bharatpur traces his decent to them.¹

**Spatial Diffusion**

The present study is based on the morphogenetic structural analysis of Sinsini village which is founded by Jat clan, a descent of Yadu dynasty. At that time this region was forested land with babool trees under the matsya tribes. During the Mughal reign (1556-1605) introduced the new unit of administration i.e., Sarkar. Under Akbar, portion of this district comprising the Mahals of Bayana, Toda Bhim, Khanua and Dholpur fell within the Sarkar and Suba of Agra, while the Tehsil of Gopargarh, Naya Paheri and Kaman were with Jaipur state, the Sarkar of Agra contained 33 Mahals. In six Mahals, Agra, Bayana, Chou-Muha, Khawah Kothumar and Hinduan the Jats were in the position of zamindars.² After sometimes they diffused according to their need to provide suitable safety and accommodation. With the help of genealogical tables and statistical analysis it has been found that in the early 16th century the descent of Jadan Pal founder of Sinsiwar clan had migrated into three successor wave, the first branch settled in Bayana. The second branch moved towards the Deeg and third branch settled in the Bharatpur. All these


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SPATIAL DIFFUSION OF SINSIWAR JAT CLAN SETTLEMENTS

Fig. 3.2A
PARENT AND DAUGHTER SETTLEMENTS
DISTANCE POPULATION RELATION

Fig. 3.2B
SINSIWAR JAT CLAN

Khan Chand
Thakur Braj Raj

Ati Ram | Churaman | Budh Singh | Khushal Singh

Bhav Singh
Radha (wife)
She belongs to Sogar village

Roop Singh
Bidan Singh
Devaki (wife)
Daughter of Chaudhary Akhay Rana of Kamar village

Pratap Singh | Suraj Mal | Nahar Singh | Nawal Singh
Sons

Jodh Singh
Devi Singh
Med Singh (Umaid Singh)
Bhawana Singh
Lal Singh
Udai Singh

Sons of Bahadur Singh holding holding watan jagir

Name of holder of zamindari
1. Rambal Thakur known as “Chauburjawala”
Name of village
Pipalda, Khalka, Nagla and three village in Bayana

2. Akhey Singh
Nam (Akheygarh)

3. Guman Singh
Gadoli (Uchain)

4. Surat Singh
Khera (Bayana)

5. Jodh Singh
Bajoli (Bayana)

6. Devi Singh
Pipli (Bayana)

7. Med Singh
Bachhmadi

8. Khemkaran
Extint

9. Bhawani Singh
Sent (Kumbher)

10. Dalet Singh
Astwan (Kumbher)

11. Duleh Ram
Extint

12. Ram Kishan
Mahloni (Rupbas)

13. Kushal Singh
Aghawali (Bayana)

14. Lal Singh
Swans and Badanpurah (Bhussawar)

15. Balram
Ajnauli (Bayana)

16. Vijay Singh
Extint

17. Uday Singh
Bista (Uchain)
Table 3.1

**Notion of Dimensional Attributes of Sample Village**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Period</th>
<th>Distance from Parent settlements (L) km</th>
<th>Population (P)</th>
<th>No. of settlement</th>
<th>Km per year</th>
<th>Population energy (P)</th>
<th>Viscosity of the land Scope (v)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Before AD 1600 (100 yr.)</td>
<td>5.25</td>
<td>5497.9</td>
<td>9</td>
<td>0.0525</td>
<td>38.939</td>
<td>9.9</td>
</tr>
<tr>
<td>II</td>
<td>Before AD 1600-1800 (200 yr.)</td>
<td>8.00</td>
<td>3722.2</td>
<td>5</td>
<td>0.04</td>
<td>38.212</td>
<td>2.326</td>
</tr>
<tr>
<td>III</td>
<td>After 1800 AD (150 yr)</td>
<td>11.525</td>
<td>2399.58</td>
<td>12</td>
<td>0.0778</td>
<td>36.607</td>
<td>1.388</td>
</tr>
</tbody>
</table>
settlement were founded – the first Stage (before 1600 AD) of clan diffusion at the mean distance of 5.25 km from the initial agglomeration.

Later on as the population of Sinsiwar village increased by natural growth it was felt essential territory so as to accommodate the large population by clearing the forest land lying at the margin of the parent village. To get maximum potential contact with minimum efforts in terms of energy, cost and to make their territory more protective, the inhabitants left their earlier sites and founded new settlements. During the second stage (between 1600-1800) of diffusion of new settlements Pipawali, Nawli, Aghanpur Jatpura established at the mean distance of 8 km from the parent settlement. Bharatpur proper was the neucleas for Jats when Suraj Mal came into power.

During the third stage (after AD 1800) of diffusion of clan settlement, mostly Jat village came into existence. To meet the needs of increasing population 15 new settlements were founded at the mean distance of 11.525 km from the original node. (Table 3.1)

**Findings**

Like Bylund model D1 this case also presents a three step diffusion model from the nucleus settlements. The first step is characterized by short distance immigration from parent settlement, while the second and third were characterized by long
distance immigration. It bears out the hypothesis that as the distance increases the population energy decreases. It shows non-availability of suitable area and productive conditions away from the nucleus. The scatter diagram (Fig 3.2B) shows that the distance population relation among the parent and daughter settlements is indirectly proportional to the population. Obviously as distance increases the population becomes low. It shows that the lesser numbers emigrated from original node and presence of tributaries which destroys crops and also disconnect the way to market during rainy season. The spatial diffusion of settlements and parent and daughter settlements are shown in Fig. 3.2A and 3.2B respectively.

**SOGARWAL JAT CLAN**

**Evolution**

According to local belief their entry into study area may be place at approximately after the Mughals around sixteenth century. Field enquiries suggest that this Jat clan were found from Sirsa in Haryana. Ram Baksh Singh a ruler zamindar had entered in Pahari Sub division and settled there. They founded Sogar Sanwler, Satwari, Sahram and Gopalgarh villages in the sixteen century. The name of Sogarwal is derived from their parental village in Haryana.
SPATIAL DIFFUSION OF SOGARWAL JAT CLAN SETTLEMENTS

Fig. 3.3A

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Table 3.2

Notion of dimensional attributes of Sample village.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Period</th>
<th>Distance from Parent settlement (L) km</th>
<th>Population (P)</th>
<th>No. of settlement</th>
<th>Km per Year (s)</th>
<th>Population energy (P)</th>
<th>Viscosity of land Scope (v)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>I</td>
<td>Before AD 1600 (150 yr.)</td>
<td>4.83</td>
<td>4210.16</td>
<td>6</td>
<td>0.69</td>
<td>290.50</td>
<td>5.81</td>
</tr>
<tr>
<td>II</td>
<td>Before AD 1600-1800 (200 yr.)</td>
<td>5.78</td>
<td>689.30</td>
<td>23</td>
<td>0.0289</td>
<td>58.59</td>
<td>6.598</td>
</tr>
<tr>
<td>III</td>
<td>Since 1800 AD (100 yr)</td>
<td>8.50</td>
<td>2059.00</td>
<td>1</td>
<td>0.085</td>
<td>175.00</td>
<td>2.422</td>
</tr>
</tbody>
</table>
Spatial Diffusion

Dispossessed from Sirsa in some sixteen century, the Ram Baksh Singh founder of the clan immigrated at Pahari sub-division which becomes the original centre of the Sogarwal clan settlement. Ram Baksh Singh had three sons, Dan Singh, Dana Singh and Gumra Singh. The first sons family diffused and settled in Nagar sub-division while the third son Gumra Singh founded the Kaithwara and Papra villages. Gumara Singh is followed by Fatu Singh, and Fatu Singh followed by Jaimal who founded Sikarpatti and Kamilpur Patti villages. These villages were thus founded during the first stage (before AD 1600) of spatial-diffusion of clan settlements at a mean distance of 4.83 km from the nucleus.

During the second stage (between AD 1600-1800) of spatial-diffusion of clan settlements 20 pattis of Pahari sub-division and 23 village have been founded at a mean distance of 5.78 km from the original node, while in third period (Since AD 1800) only one village has been established at mean distance of 8.50 km from nucleus settlements i.e. Khohri. All these settlements were founded by Baru Singh. Fig. 3.3A and Table 3.2 shows a spatial-diffusion of Sogarwal Jat settlements.

Findings

The spatial-diffusion of Sogarwal Jat clan settlements present a general pattern that the power of model is directly
proportional to increasing distance from parent settlements, except in third stage when the power model is indirectly proportional to the distance. It shows that entire area is available but not suitable and comfortable for the growth of new settlement table 3.2 Fig 5.3A shows that as the distance from nucleus settlement increases the population thins.

The statistical results show that the velocity wave (s) in different stages of settlement growth has decreased, while the number of founding settlements increases with the exception of the third stage. Nearly all the settlements which were founded during the third stage are outside study region and only one of them is in area under study. This indicates saturation point. The other characteristic can be marked out that the population energy (p) of settler was very high during first and third stage, while in the second stage it is very low. It shows that when the number of settlements is very high, the population energy becomes less during the second stage. Thirdly, it may be noted that the viscosity of landscape (v) follows the same trend as population energy (p). In the third stage, viscosity of landscape (v) is as high as population energy (p); it shows greater productivity of the area. Fig 3.3B shows that the distance population relationship between parent and daughter settlement accentuates as the time passed, different castes and communities did not migrate from the parent village but outsiders came and occupied new settlements.
CHAUDHARY JAT CLAN

Evolution

It has been found from local views that the Chaudhary clan is a descent of Chaudhary Kashi who belong to Hodal in Mathura district. Chaudhary Ratan Singh who migrated from Mathura to Bharatpur who was allotted many zamindari by Rani Kishore who belongs to this clan. The magnificent places, built by their successors, Chaudhary Devi Singh, Daulat Singh, Ratan Singh and Hari Singh. They founded many villages and spread the adjoining villages and founded many settlements. Some village was founded by this clan i.e. Chakora, Milsawa, Bhuteli, Chatoh, Bhagwanpur etc.

Spatial Diffusion

During the first stage of spatial-diffusion (before AD 1600) of Chaudhary clan settlements only two village came into existence at a mean distance of 7 km from the nucleus while in the second stage (AD 1600-1800) of diffusion process 21 villages were founded at a mean distance of 5.66 km from the initial agglomeration, and in the third stage (Since AD 1800) of spatial-diffusion process settlements have been founded at a mean distance of 6.82 km from the parent settlements. Table 3.3 shows the dimension of spatial-diffusion of spatial attributes of Chaudhary Jat clan Settlement Fig. 5.4A also shows the spatial-diffusion of same clan.
Fig. 3.4A
Fig. 3.4B

DISTANCE FROM PARENT SETTLEMENT

PARENT AND DAUGHTER SETTLEMENTS
DISTANCE POPULATION RELATION

LILAPUR
NOORPUR
MAI GOOJAR
UNDRA
NAGLA SARIYA
MACHOLI
BHALTIKARI
IKRA
KOHOMHA
SOOTI
LUSYA
CHICHANA
AJAN
CHATOLI
MILSAWA
BHAVNAGAR
DARAPUR
DAULATPUR
BHAGWANPUR
BHAGWAN
DAULATPUR
OCHAEHARI
OCHOKARA
OCHAK KAZI
CHAUDHARY JAT CLAN

Chaudhary Kashi

Chaudhary Ratan Singh  Chaudhary Kunwar Singh

Chaudhary Devi Singh Zaildar  Chaudhary Man Singh

Ratan Singh  Chaudhari Bir Singh

Hari Singh
Table 3.3

Notion of dimensional attributes of Sample village.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Period</th>
<th>Distance from Parent settlements (L) km</th>
<th>Population (P)</th>
<th>No. of settlement</th>
<th>Km per year</th>
<th>Population energy (P)</th>
<th>Viscosity of land Scope (v)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Before AD 1600 (70 yr.)</td>
<td>7.00</td>
<td>265.4</td>
<td>2</td>
<td>0.10</td>
<td>265.4</td>
<td>5.416</td>
</tr>
<tr>
<td>II</td>
<td>Before AD 1600-1800 (200 yr.)</td>
<td>5.662</td>
<td>899.66</td>
<td>21</td>
<td>0.0283</td>
<td>25.269</td>
<td>0.794</td>
</tr>
<tr>
<td>III</td>
<td>After 1800 AD (100 yr)</td>
<td>6.852</td>
<td>919.8</td>
<td>9</td>
<td>0.0682</td>
<td>62.776</td>
<td>1.347</td>
</tr>
</tbody>
</table>
Findings

The spatial-diffusion of Chaudhary Jat clan settlements presents a general pattern of diffusion where the power of model increases in proportion to decreasing distance from parent settlement. Table 3.3 again shows that the velocity of the settlements wave (s) followed the same trend as the population energy (p) of settlers. The first stage of spatial diffusion indicates that the immigration occurs, while the second stage shows the number of new settlements become high with low population energy, it indicates that new settlements were founded by the clans, but immigration does not occurs. Fig. 3.4B shows that the population distance among parent and daughter settlements accentuates with the passage of time, new numbers entered into the already settled villages. It shows that population and distance have positive relation, because new settlements have been founded at long distance and the people began to migrate from their parental settlement to live healthy atmosphere in the founding villages.

MEOS CLAN

The Meos is one of the important and powerful clan of the area under study who has occupied Kaman sub-division of the Bharatpur District. Believed to be formerly Hindus, estimate vary with regard to the time when their conversion to Islam took place.
PARENT AND DAUGHTER SETTLEMENT
DISTANCE POPULATION RELATION

Fig. 3.5B

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MEOS CLAN

Chaudhary Usman Khan

Jahangir Khan  Barban Khan  Khanjahan Khan

Babu Khan  Shams Khan

Nahar Khan  Kallu Khan

Noor Khan  Mir Khan
### Table 3.4

Notion of dimensional attributes of Sample village.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Period</th>
<th>Distance from Parent settlements (L) km</th>
<th>Population (P)</th>
<th>No. of settlement</th>
<th>Km per year</th>
<th>Population energy (P)</th>
<th>Viscosity of the land Scope (v)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Before AD 1300 (200 yr.)</td>
<td>28.00</td>
<td>9273</td>
<td>6</td>
<td>0.14</td>
<td>1248.22</td>
<td>1.639</td>
</tr>
<tr>
<td>II</td>
<td>Before AD 1300-1600 (300 yr.)</td>
<td>10.20</td>
<td>11882</td>
<td>40</td>
<td>0.034</td>
<td>40.41</td>
<td>3.884</td>
</tr>
<tr>
<td>III</td>
<td>After 1600 AD (200 yr)</td>
<td>5.50</td>
<td>5020</td>
<td>1</td>
<td>3.50</td>
<td>87.75</td>
<td>7.024</td>
</tr>
</tbody>
</table>
It is believed that at the time of Timur invasion they migrated to study area from Haryana. It is the local believe that Usman Khan who migrated to study area from Haryana formerly he was a Jat ruler near Sirsa. His descendant Jahangir Khan, Barbal Khan, Khanjahan Khan established their bases in Kaman sub-division of the study area. They are also called Chaudhary who ye;d great influence on the member of their community.

**Spatial Diffusion**

Table 3.4 shows the notion of dimension attributes of the settlements. In the first stage (Pre AD 1300) of the Meos clan settlements diffusion, only six villages have been founded in the adjoining area of Haryana at a mean distance of 28 km of the initial node and in the second stage (AD 1300-1600) of settlement diffusion, 40 villages have been founded at a mean distance of 10.20 km while in third stage (post AD 1600) of settlement diffusion only one village was established mean distance of 3.50 km from the present settlements. Fig. 3.5A also makes clear the stage wise diffusion of clan settlement.

**Findings**

In this case only minute changes have taken in the spatial diffusion stage due to time factors. The tabulated results of table 3.4 shows that the population \( p \) and viscosity of landscape \( v \) have positive correlation. It shows that fertile and suitable land
was establish new settlements. In the first stage of spatial-diffusion process, they have migrated at long distance and covered large area, extending into neighboring district as figure 3.5A also supports. As time passed, the population began to increase, the settlers started shifting from their original place and founded more and more villages within that parental boundary. Thus during second stage of diffusion process there has been migration at less distance, it may be denoted as infilling process. Fig. 3.5B indicates the correlation between distance among parent and daughter settlement as 50 percent of total village are located above the median line. It means at the distance increased, the population also increased. It shows that better and more productive area was available to accommodate extra population. Due to foundation of more settlement, the second stage has less population and less migration distance in relation to the first or third stage of diffusion process.

In the light of preceding discussion it can be said that hereditary principle of social organization bind the villagers in the closely integrated society whereas economic, political and ritual relations are concentrated within the boundary of their kin bodies, which make a distinct socio-cultural territorial organization.1 It is often found that in different stages of spatial-

diffusion processes, the role of different phase may be structural congruencies is called isomorphism.\textsuperscript{1} The analysis of identifications and measurement of isomorphism will provide a methodology for the synthetic and relevant approach to the problem oriented in village.

In the above context the following theory may be put forwarded:

(i) The destination of migrants depends on perception of distance and choice of area according to their need and economic condition.

(ii) The 'perceptual distance' and 'need' reflect the attractiveness of each possible destination in terms of cost, problems and social control.

These two hypothesis would relate themselves with set of socio-economic and psychological factors that produce temporal sequence of migrants which is the result of varying nature of the proximities of the utilities.\textsuperscript{2}

\textsuperscript{1} composition and correlates*, in Geographical Dimension of rural settlements, R.L. Singh, (1975) Nation Geographical Society of India, Varanasi, p.32.

\textsuperscript{2} Brown, L.A., "Diffusion process and Location" Philadelphia; Regional Science Research Institute, Bibliography Series, No. 4, (1968), pp.6-8.

\textsuperscript{2} Aldskogius, H., "Modeling the evolution of settlements patterns Geografiska Region studies", No. 6, Uppasala: Kultur – Geografiska Institutionen vid Uppasala Universitel (1969) p.9
3. DISTRIBUTION OF CASTES AND THEIR RANKINGS

A society consists of a set of groups whose members together perform certain functions that they do not accomplish as separate groups. It may be interdependent, and the interdependence shows a particular arrangement. That is to say, that participants in each groups act in regular, anticipated ways towards members of the other groups and towards the external environment. The Indian society is highly traditional and its relevance in the present period of scientific and technological development need to examine.

Since ancient times, the caste system has decided the ranking of the social status in the religio-socio-cultural structure of the society. It is due to inter-woven religious undertone well defined society relationships and the equally well defined economic functions in a well-thought out production system. In the age of development and modernization of society, the structure of social activities, including political and economic, of the various caste is changing. Thus caste may be assign as a "network of closed, religiously-sanctified, inherent groups functioning as adoptive structure in modernization Indian Society". Because from the begining each caste has retained it own unique features as heredity endogamous, usually localized, group, having a traditional

association with an occupation and particular position in the
religio-ritual hierarchy.¹

There is, however, a need for detailed study as to how, in the
study region, as in the most of rural areas of the country, the
traditional village system was influenced by a territorially
dominated clan which took command over a certain territory and
evolved as the power elite, while other groups of the people were
subordinated and become dependent on the dominant group. It is
also essential to see how numerical dominance of various castes in
different villages came out to be corporate political group and also
took into interrelation between these dominant and other
dependent caste with mutual loyalty of kinship, ritual
interdependence and other social, cultural and political ties.

The present study is systematically designed into two parts:
the first provides the distributional pattern of different castes and
their regionalization, while the second discuss a geographical
method of caste ranking.

It is notable that census of 1931 and 1961 is last one to
provide comparative caste nature on the district level and after
1931 the census division stopped to collect data on caste level, but
the census of 1931 provides the data of caste distribution on Tehsil

Numerical Caste Dominancy in Bharatpur District

Different censuses between 1891 to 1931 shows the largest single caste in the study region has been the Jats follows by scheduled caste in terms of population. It has been often seen that there is sharp regionalization in these two caste. The Jats are predominant in whole Rajasthan while the schedule caste are more numerous in some pockets. In the present analysis, ten caste have been considered on the basis of their population which contribute more than one percent of the total population according to 1931 census. The comparative statistic for Tehsil of the district reveal the following features:

(i) The percentage of Jats is more than in the Bharatpur District (39%) which is the one of the highest in Rajasthan state while in other district it varies from 10 to 40%. The majority of population of Jats covers the Deeg Tehsil, Bayana Tehsil, Bharatpur Tehsil and Dholpur which is now a new district.

(ii) The scheduled caste (Chamars (Jatav) are the second largest dominant caste in the district. They consists 21% population of the total population. The highest concentration of
scheduled caste (15.14%) population is found in Rupbas tehsil followed by 15.04% in Weir Tehsil and in Deeg Tehsil it is consist 12.31% of the total population.

(iii) The Brahmins are ranked third in caste hierarchy of the district. Numerous in Dholpur sub-division, the Brahmins are spread all over the district, because in the Hindu social system they perform many religious rites. In Dholpur and Rajkhera sub-division the Brahmins are dominant castes and they consist 12% of the total population of the district, but becoming new District of Dholpur, the percentage became low in the Bharatpur District.

(iv) The Gujars are the fourth largest caste in the district. Gujar are agriculturists and found all parts of the district. The Gujars are considered Kshatriyas below the Jats in the social hierarchy. They consist 8% of the total population of the district.

(v) The Mahajans are fifth largest caste in the district. Most of the Mahajans are in the district are Jains and their principal division are Saravgi, Agarwal, Khendelwal, Vijayavargi, Maheshwari, Powal and Paliwal. The number of Agwarwal is large. Khandelwal Mahajans originally came from Khandelwal village in Sikar district. The people of this caste are Jains. Vijayawargis also came from Khandela village and
are mostly Jain businessman. They consists about 7% of the total population of the district.

(vi) Meos are the sixth largest caste far as population is concerned. They are dominant in Kaman and Bayana Tehsil of the district. They are Muslims believed to be formerly Hindus, estimated very regard to the time when their conversion to Islam took place. They consist 4 percent of the total population by the district.

(vii) Kolis is an important caste of the district. Their traditional occupation is weaving. Most of them also good masons. They are found in Bharatpur Tehsil and Rupbas Tehsil of the district. They consist of 2 percent total of population of the district.

(viii) The Nai is an important caste, for besides being barbers; they are traditional match makers. The percent of Nai is essential on almost all the ceremonial functions and occasions, particularly at the time of marriage when they cut the hair of baratis (members of marriage party), bathe the grooms, supply pattal and dona (leaves plates and bowls) and also work as groomsman. For the service rendered, they are paid both cash and kind. Their percentage of population is very small.

(ix) The other occupational caste in Lohar (carpenter or block smiths). They are found in very small quantity as far as their
population is concerned. They are consists only one percent of the total population of district.

The tenth important caste is Sonars (Gold smithis). They are engaged in making of gold items of Jewellary which is very important ornament in the marriage ceremony. They consist only one percent or the total population of the district.

**Population Variation of Selected Castes (1891-1931)**

Fig. 3.6 shows the population variation of some selected of the study area during 1891 to 1931 on Tehsil level. It has been analyzed, the Meos, Gujars, Mahajans and Kolis have indicated less variation of population between 1891 to 1931 while the net population of Brahman has decreased about 3 percent. The population of Jats and Chamars (Jatav) has increase.

**Caste Region**

The district has been marked out by the numerical predominance by the Jats but there are remarkable difference on Tehsil level taken as basis for the caste regionalization in the area under study. The three region can be marked, viz., the Jats the Chamars (Jatav) and Brahmans. A detailed breakup of the caste region is as follows:

**The Jats dominated region:**

The Jats are dominant over Deeg, Bayana, Bharatpur, Sewar tehsils. In these tehsils the percentage various from 30 to 40% of
the total population of the district. All these place the Jats are dominated in land holdings as well as social and caste hierarchy.

**The Chamars (Jatav) Dominated Region**

Through the Chamars have been traditionally leather workers, they are mostly engaged in and or as agriculturer laborer. They mostly belong to landless Clan. Most of the land which chamars cultivate is a part of return for working for the land owing community. They are mostly concentrated in Nadbai, Rupbas and Weir tehsils. The Chamars account for a total of 12% in the district population.

**The Brahmins Dominated Region**

The population concentration of the Brahmans is high in Dholpur-sub-division which is now a new district separated from the Bharatpur District. But they are spread all over the district because in the Hindu social system, they perform many religions rites. Traditionally, Brahmans are priest in temples. They are 200 big temples in the district and each of them has a pujari-worshippers. Formerly Pujari got assistance from the state government in the form of cast or rent for agriculture land.

**Caste Ranking**

The secular power derived from education, politicalization, economic position, etc., shows much deviation in the numerical
concentration pattern. At the village level, the land is the most effective parameter which decides the position of the caste in the caste hierarchy.

The caste ranking may be defined as "the body of collective opinion concerning the placement of ethnic groups as corporate wholes higher or lower than one another in precedence or esteem". Cast ranking in collective community denotes the sentiments of different caste, while 'each and every human being inhabits its own subjective world, which is a function of its perceptual apparatus' and as the society develops it will be controlled by an objective world of perception, the latter is more suitable in modern India. It may be accepted that man of any community, group of culture "now he is in position of creating his own biotope. He is therefore, in position of determining what kind of organism he will be". Many scholars have considered 'caste ranking' only a part of social system but it should be considered as a part of dominance, in term of economic power, landownership, number, etc which makes rural society very complex. Anthropologist have mostly considered the single religio-ritual norms for caste ranking instead of correlative identification, while in the centre of village, the resources, and political and economic factors are the most important so the different component of

secular power\(^1\) (e.g., economic status, numerical strength) must also be taken into consideration for cast ranking.

Marriot\(^2\) made an attempt to classify the caste ranking into two parts i.e., attributional and interactional; while in attributional theory he considers only population pressure and landownership by caste, but the presumed hierarchy of values in matters of diet, occupational etc does not correlate well with the observed order of caste ranking and how the different norms of attributes will be compared with each other or combined in one hierarchy of values. Dubey\(^3\) considers “hierarchy of foods and occupations also materially contributes to the social ranking of caste”, but it is ritual, not economic and former principle of caste ranking does not interpret all respect of Hindu society. While Gough\(^4\) consider in her study of caste ranking in South India the bases of judicial levels of different castes in ritual hierarchy. She has also accepted the role of different attributes, e.g., economic etc., which are the prime determinants of their ritual describe by her, “Neither in present nor in the past can the ritual ranking of castes be understood reference to the political and economic system in which they are embedded”.

Singh also throws some light on interactional theory and he adopted to rank an individual cast in term of correlation ratio between two resource oriented attributes – population size and landownership. He has introduced a theory termed as correlative Geo-economic Attributional Theory of Caste Ranking. An attempt is made to test how for this proposed theory fits in the study region.

**Correlative Geo-Economic Attributional Theory**

It is well known fact that those who control the territory-resources, lead the society also mentioned by Mandelbaum that “local power flows mainly from the land, land is the prime goods in this agrarian setting, land is the main source of wealth; land is the main need for a Jati on rise”. Of all of the villages values, the most important and permanent source in not money, but land is the primary, scare productive resource, control of land means control of livelihood.

Generally it is found that land owing castes have been controlling more resources and higher status than the landless caste as often seen in real situation. The most important component i.e., numerical strength and economic power, which control the village society at different level as discuss by Srinivas that, ‘the caste is dominant when it is numerically strongest in the

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village or local area and economically and politically exercise a propounding influence.¹

The proposed theory is fundamentally based on the correlative weight of two geographical attributes i.e., population and landownership, which may be termed as correlative Geo-economic Attributional theory of caste ranking.² The present theory may be applied for ‘system analysis’ which have been types of components, first spatial structure component and second interactional components, jointly constitute Geo-spatial systems.³ In the present analysis only former components has been taken into consideration.

**Testing of Theory**

Three villages have been taken into consideration from the area to test the theory on micro level. For such purpose total arable land has been considered. The Jats are dominant caste in the both sense i.e., in terms of landownership as well as in terms of population among three villages. The other dominant castes are Brahmans Gujars Gujjars, Mahajan and Meos. Three villages are Sinsini, Aghapur and Adhawali.

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MANLAND RATIO & CASTE RANKING
VILLAGE SINSINI
1991

VILLAGE AGHAPUR
1991

Fig. 3.7
Fig. 3.7
**Sinsini**

It is situated 13 km, South of Deeg Tehsil. It is dominated by the Sinsiwar Jats who constitute about 40% of total population. The village was founded by forefather of Sinsiwar Jat during the sixteen century. Before the Jats it was dominated by Mastya tribe in ancient days. In the Mughal period it was under Agra Sarkar. The Sinsiwar Jat took the name from this village Sinsini. The Jat still enjoy their dominancy in number as well as in landownership. They have controlled 70 percent of landed property. The Jats followed by Brahmins who control about 20 percent of land and 17% of total population. The Gujars and Chamars (Jatav) rank third and fourth respectively according to their numerical strength. It was observed that about nine caste have some land property while rest caste have little land holding.

**Aghapur**

Aghapur is located on the slopes of a hillock known as the khera. It is bounded north by village Kanjaron ka bas, on the east village Darapur, on the west by village Kaproli and on south by Ghana forest. It is ten km away from the Bharatpur city. The Jat founded this village, who still enjoy dominance by controlling the land as well as number of people. They possess about 80 percent of total land with a population of 19 percent. According to landownership the Jats, Gujar, Brahman, Banjara, Sikh, Kumhar,
Nai, Lodha, Chamar, got first, second third, fourth, fifth, sixth, seventh, eighth, ninth respectively.

**Adhawali**

It is situated 15 km west of Deeg. It is very old village and founded by Chaudhary Jat clan. The forefather of this clan Chaudhary Ratan who migrated from Mathura to this study area who allotted many zamindari by Rani Kishori who belong to this clan. The Jats are dominant caste in this village who constitute about 47 percent of the total population with 93 percent of landownership, enjoy first rank, while the Brahman comes next in term of population (11 percent). The third rank is attributed to Gujars, the fourth to Mahajan and fifth to Meos, Sixth to Kolis seventh to Kumher, eighth to Nai, ninth to Chamar (Jatav). The landownership comes under same order.

From the detailed discussion it is clear that Jats are dominant caste followed by Brahmins, Gujars, meos and others. The Brahmin in spite of first rank in caste hierarchy of the orthodox social scale is not influence due to less share in landownership and dependence on the land owning communities. It may also be concluded that the Chamars (Jatav) are depressed caste due to lack of landholding, while they dominant in number almost all villages taken into consideration for this study. But it is observed that Chamars (Jatav) are getting higher status by
securing of job opportunities in central/state government services. Now they are purchasing land by land owing caste and it is hoped that in near future they would be a land owing caste.