

## **"SPATIAL PATTERNS OF SEX RATIO: A MICRO LEVEL STUDY OF BAIJANTH BLOCK OF DISTRICT KANGRA, HIMACHAL PRADESH"**

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### **Introduction**

Sex ratio is an index of the socio-economic conditions prevailing in an area and is a useful tool for regional analysis (**Franklin, 1956**). Sex ratios are fundamental to the geographic analysis of an area, for they are not only important features of the landscape but also influence the other demographic elements significantly and as such provide additional means and materials for analyzing regional landscape (**Trewartha, 1953**). The number of females per thousand males is termed as sex ratio while sex ratio at birth or child sex ratio is defined as the relative number of male and female birth (**Taragaki and Lasaridi, 2009**). Sex Ratio is a powerful indicator of social health of any society and is a sensitive indicator of women's status as it conveys a great deal about the state of gender relations (**Patel, 2004**), especially in terms of women's health and position in society (**Barakade, 2012**). The decline in sex ratio is of great concern as it shows that our society is still dominated by patriarchal values, beliefs and practices manifesting itself in the form of discrimination against females (**Bhat and Manzoor, 2015**). The declining number of females compared to the number of males in Indian population has been a cause for concern during the past three decades and it brought to attention the growing gender discrimination by analyzing the male-female sex ratio which was voiced for first time by Indian Census reports (**Nath, 1991**). During the last 10 years there has been a sharp decline in the sex ratio in General and Child sex ratio in particular, although health and social indicators in Himachal Pradesh have climbed from below the national average to levels that approach or exceed those of Kerala (**Ryhal and Poonam, 2009**). A number of studies have been conducted to analyze the

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patterns of sex ratios of Himachal Pradesh at district and tehsil level. The present study tries to investigate, whether patterns of sex ratio at district and tehsil level replicate themselves at micro level or at village level or not? Thus the present paper tries to analyze the spatial variations in the pattern of sex ratio in C.D. block Baijnath of district Kangra of Himachal Pradesh. The prime reason behind selection of this particular C.D. Block is that when all non-tribal regions of the state are concerned Baijnath is the most under developed in terms of socio-economic infrastructural development and displays wide disparity in the geographical and climatic conditions as well. Therefore keeping in view these things the main objective of this study is:

1. To find out spatial patterns of child sex ratio and sex ratio of study area

### **Data Base and methodology**

The present study is based entirely on secondary data for decades obtained from department of Census Operations, Shimla. The following formulas have been applied for calculating sex ratios.

1. Sex Ratio= 
$$\frac{\text{No. of Females in the Village above Six years}}{\text{No. of Males in the Village above Six Years}} \times 1000$$

2. Child Sex Ratio= 
$$\frac{\text{No. of Females (0-6 years) in the village}}{\text{No. of Males (0-6 years) in the village}} \times 1000$$

### **Study Area**

The present study is based on Baijnath block of district Kangra, Himachal Pradesh. It extends from 31°53'N to 32°29'N latitude and 76°35'E to 77°05' longitude covering a total area of 1339.59sq. km. (**Fig.1**). It is separated from district Chamba in the north-west by the majestic Dhauladhar ranges, and is bordered by district Lahul and Spiti in the north, district Kullu in the east, District Mandi in the south-east, and by C.D block Bhawarna, Panchrukhi and Lambagraon in the west, middle south west and south, south west subsequently. Geographically, the study region is hilly in nature and the elevation varies from lowest 900 meters to a highest of 6000 meters. Elevation progressively increases from west to east and from south to north. Due to varying topographic conditions various altitudinal climatic variations are also experienced.

Geologically, the study area is mainly composed of Shiwalik series of rocks belonging to Mio-pleistocene period.

As on one hand the geography of the study area is quite diverse in nature on the other hand there exists wide spatial disparities in the levels of socio-economic development. The irony of the C.D. Block Baijnath is that whenever the estimation of socio-economic development is done, always the entire block is taken into account which comprises a major portion of the uninhabited area. As a result the block is reflected as a backward block in terms of ratios calculated for various indicators of development. Thus in order to find out effective levels of socio-economic development in the study area an attempt has been made to consider only those villages which have existed in both decades. There were 193 such villages and out of these 19 villages were uninhabited with no significant use for analysis. Thus after excluding these villages about 174 villages comprising of 371992 sq.km. of area in 2011 have been used for the analysis which comprise about 81% of the total study area in terms of number of villages and just 26% of the total geographical area.

### **Findings and Discussions**

Among all the demographic attributes of population, the sex structure is one of the most fundamental and directly related to the reproductive potential of the human kind, deaths and marriages (**United Nations, 1973**). The knowledge of sex ratio helps in understanding the psychological characteristics of a community (**Chandna and Sidhu, 1979**). The rural sex ratio of district Kangra is very high i.e.1013 females per thousand males and among the 15 C.D. Blocks Baijnath holds 11<sup>th</sup> position (991 female per thousand males) along with C.D. Block Dharamshala. This clearly indicates that a Block level comparison bring Baijnath at a low position but when the village level analysis is done it brings out a lot of spatial variation within the block and on the basis of this variation the study area can be categorized into five zones:

**1. Areas with Very High Sex Ratio (Above 1100 females per thousand males):** In the year 1991(**Fig.2**) about 68 villages comprising about one-third of the total study area exhibited very high level of sex ratio. This proportion decreased drastically in the year 2011(**Fig.3**) as 64 villages were registered under this category but the percentage share of geographical area reduced to more than half in the year 1991 to approximately 15% in the year 2011. The main

cause of such decline in area is mainly attributed to improvement in sex ratio in the villages with small size located near to the city center and a decline in sex ratio of villages (Dharjot, Bharehar, Mandehar Kalan etc.) with higher geographical space due to marriages of girls in other villages. The spatial pattern of sex ratio in the year 1991 exhibits very high sex ratio in the upper reaches and in the southern tip of the block. The villages in the eastern and western part also display very high population growth in patches. The spatial pattern clearly shows that the villages in the southern tip of the block have registered an increase in the sex ratio and in the north Villages Bara Bhangal has shown an improvement in sex ratio mainly due to migration of males in search of job opportunities and education.

**2. Areas with High Sex Ratio (1001-1100) females per thousand males):** The villages under this category have registered a good increase from 33 villages covering an area of 11% in 1991 to 48 villages covering 34% in 2011. This clearly indicates improvement in the status of females in the villages and this can be attributed to improvement in educational facilities and arising awareness in these areas. In the year 1991 the areas with high sex ratio are found in proximity to the areas with very high sex ratio. The villages sharing boundaries with tehsil Palampur, C.D. block Bhawarna and Panchrukhi have displayed high sex ratio. In the year 2011 the villages in the central and eastern part of the study area have registered an improvement in the sex ratio.

**3. Areas with Moderate Sex Ratio (901-1000 females per thousand males):** the number of villages in this category have registered a decline from 41 villages in 1991 to 33 villages in the year 2011. However the geographical area under this category has registered a marginal increase of just 1%.The villages in this category are the ones which are in the stage of transition. In the year 1991the village in this category formed a belt stretching from village Dharjot in the north to central part of tehsil Baijnath and then turned east wards in tehsil Multhan. In the year 2011 the spatial pattern shifted more towards the central and western part of the study area.

**4. Areas with Low Sex Ratio (801-900 females per thousand males):** The number of villages (18) with low sex ratio remained the same in both the decades but there was a marginal reduction of 1% in the area under this category. This was particularly due to shifting of some

villages in their category to higher category and subsequently shifting of some villages from lower category to this category. In the year 1991 and 2011 the Villages with low sex ratio do not form any specific pattern and are found in pockets and patches such as BhethJekhli, Kharanal, Chherna etc.

**5. Areas with Very Low Sex Ratio (Below 800 females per thousand males):** an improvement in the condition of females can be judged from the fact the number of villages in this category declined from 14 in 1991 to 11 in 2011 with a reduction in area of about 5%. In both the decades the spatial distribution of villages with very low sex ratio exhibited no specific pattern and are located far away from the city centre. Kukar Gunda, Chogan Thati, Keori, Suhru-I are some of the villages.

### **Child Sex Ratio**

It refers to the number of female children in the age group of 0-6 per thousand number of male children in the age group of 0-6. Child sex ratio is a better measure of finding the condition of females as it shows the preference in sex given by families to children at the time of birth. In the absence of intervention, an excess of male births over female births is well documented as a biological phenomenon (**Waldron 1985**). Worldwide this differential shows very little regional variation at birth. In India, however, sex-selective abortions almost certainly inflate the "natural" Sex Ratio at Birth in favor of males, although the extent of this effect is regionally specific and is not estimated reliably (**Freed and Freed 1989**). The gender ratio in the state of Himachal Pradesh is skewed to a lesser degree than the national average i.e. 940 females per 1000 males (**NSDC 2012**). There exists wide variation in the state at district level as well. The child sex ratio for the rural district Kangra stood low about 877 females per thousand males and similar is the condition of all the C.D. Blocks. However Baijnath Block performed relatively better in this category and ranked fourth overall with 909 females per thousand males. At the villages level there exists more disparities and to understand it in a better way the block can be divided into six main categories:

**1. Areas with Very High Child Sex Ratio (Above 1100 females per thousand males):** In the year 1991 (**Fig.4**) more than one third of the villages with approximately one –fourth of the

total geographical area under study was registered under this category. The villages under this category are reduced in 2011(**Fig.5**) by a meagre of 3% in absolute terms and increased marginally by 2%. The spatial pattern of child sex ratio in the year clearly indicates that the hilly region have registered high child sex ratio and puts forward the level of status given to females in the hill culture. Moreover in these regions agriculture is the main source of income and large families are a common thing. It is also due to the fact that many of the families do consider male child as a necessity and in order to get one keep on giving birth to daughters and thus raising the number of female child to male child. Dhargarh, Bara Bhangal, Amarpur, Ghalot, Bara Garan etc. are some of the villages which have registered very high level of child sex ratio in both the decades. The villages under this category do not form any pattern and are spread in all directions.

2. **Areas with Very High Child Sex Ratio (1001-1100 females per thousand males):** The percentage of villages with high child sex ratio reduced drastically from 11 % in 1991 to 4% in the year 2011. The geographical coverage of these villages also reduced from 9% to 3%. It is also observed that the villages of the hill areas such as Bhujling, Lawai etc. of tehsil Multhan maintained high Child sex ratio while the relatively plain areas registered a falling child sex ratio which may be attributed to the negative side of advancing medical facilities owing to which pre-birth diagnostics of the sex of child become available to the people. The villages near to the boundaries of other blocks and in the form of a small belt in the Sub Tehsil Multhan exhibited high level of child sex ratio in the year 2011.

3. **Areas with Moderate Child Sex Ratio (901-1000females per thousand males):** The villages falling under this category registered a very minute decrease of approximately 1% in two decades and occupying nearly 14% of the total geographical space. In the year 1991 the villages with moderate child sex ratio are found in form of pockets in the central and southern part of the study area. This pattern remained almost same in the year 2011 as well. The main reason of such type of concentration in the location of these villages in such a manner that they are influenced by the hilly and plain cultural regions.

4. **Areas with Low Child Sex Ratio (801-900females per thousand males):** The villages under this category registered a marginal rise in absolute terms from 19 to 21 on one hand while a marginal decrease in spatial distribution from 11% to 9%. The spatial pattern of villages in

these category reflect that in both the decades the villages with low child sex ratio are located mostly on the margins of the study area. This clearly indicates that the region which gets influenced from other regions particularly the plain regions have displayed low child sex ratio and in which male selective births have mostly been reported. Some of the villages with low sex ratio in 1991 are Kukar Gunda, Gummarha, Gan Khetar, Ganghol, Malehar, Sarman etc. while villages with low child sex ratio are Kukar Gunda, Gaglun-di- Malahan, Kudal Upperli, Harehar etc.

**5. Areas with Very Low Child Sex Ratio (Below 800 females per thousand males):**

About 24% of the villages in the year 1991 and 30% in the year 2011 registered very low child sex ratio. This indicates that there has been a rise in the male selective birth in these two decades and this can be attributed to the decreasing size of families on one hand and to increasing importance of son in the family on the other side. However in both the decades half of the villages in this category have remained the same while other half have improved like Bakhlog, Sarla, Suhru-II, Ner, Pat, Rajnagar, shawar, Sahel, kothi etc. and in some condition have further deteriorated like Billing, Kand Kosri, Danin, Kuddal Upparli, Puling, Dandol etc. the spatial pattern of villages with low child sex ratio displays a sort of patch work in the middle and fringes of the study area.

**6. Zero or infinity Child Sex Ratio:** in both the decades there have been some villages which were either without females in the age group of 0-6 or were without males in the age group of 0-6. In the first case the sex ratio comes to be zero while in the latter one the child sex ratio comes to be infinity. In villages like Sapotha and Sokru there were only one families each with non-existence of population in 0-6 age group while in village Bolu there were four males in 0-6 age group girls were absent in this group due to which the ratio could not be worked out.

## **Conclusion**

Thus from the foregoing analysis it has been analyzed about the study area that although among all 15 C.D. Blocks of the study area Baijnath do not perform much better. However this is just

one side of the story as on the other when we try to investigate it is revealed that within the block the scenario is quite different. This difference can be attributed without any doubt to the geography of the study area, which causes regional variation in the socio-economic development of the villages. Sex ratio which was used as an indicator to measure social development registered an increase of approximately 5% in both the decades. This increase can be attributed to male selective migration to other places in search of employment. Child sex ratio which is a better measure of social development exhibited a slight decline of 3%. This clearly shows that the rural environment of the village has used the improvement in medical facilities in the other way round and has led to male selective births. Thus on the basis of village level analysis of sex ratio in the study area it can be summarized that the condition of females has not improved much in two decades and more needs to be done in this sector for bringing up social development. It can also be inferred from the present study that the pattern of sex ratio at regional level does apply to a smaller area like C.D. Block Baijanath as the villages in the higher elevation registered higher Child sex ratio while the villages in the lower altitude registered lower child sex ratio.

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