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URBAN POPULATION OF PUNJAB (INDIA) AND ITS RELIGIOUS COMPOSITION (1881)

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Abstract

Based on census data, the paper attempts to understand the spatial pattern of urban population in Punjab in 1881. As is generally the case in areas of subsistence agriculture, the urban centres were mostly small-sized and widely spaced. However, their size was relatively bigger and spacing closer in areas of better agricultural conditions and those with relatively dense population. The Muslims had the highest proportion in urban population followed by the Hindus and the Sikhs.

Introduction

As per the 1881 Census, there were 917,967 urban dwellers in Punjab residing in 96 urban places. The population size of these urban centres varied widely ranging from 151896 in Amritsar to merely 709 in Kasohan (Table 1). Many of the towns were merely large villages which functioned as market places for the produce of local areas. Almost all the smaller towns contained extensive arable areas within their boundaries and also included considerable share of agricultural communities (Census of Punjab, 1881, p. 18). As such there was not much to distinguish them from villages except their large size and greater importance of non-farm activities. Thus, the distinction between small towns and villages was not of a kind but of degree only.

Significantly, 16 of the towns in the state had a population of less than 3000 persons each. Most of the smaller towns were in the native states where all places having an Octroi Post were identified as urban centres (Census of Punjab, 1881, p.18). It is noteworthy that collection of octroi in the native states was not always connected with the urban character of places. Thus, Punjab's 1881 urban population also included a significant section of those who were not essentially urban. This is also borne out by the fact that 29 of the towns in 1881 failed to come in the urban list even 100 years later in 1981.

Table 2 shows a heavy preponderance of small towns in the state in 1881. The number of urban centres with a population of less than 10,000 persons (Class V and VI) was as high as 79 constituting 82.29 per cent of total urban centres in the state. These towns were mainly engaged in handling the produce of their respective umlands. Class III and Class IV towns numbered 5 and 9 respectively.

There were only three urban places with a population of more than 50,000 persons each. Amritsar was the only Class I (population 100000+) city in the state in 1881 (Table 1). Apart from being the main religious centre of the Sikhs, this city had also become an *entrepot* of trade and commerce for Kashmir, Afghanistan and Central Asia. The city had made notable progress during 1800-1851, i.e., under the Sikh rule in Punjab.

Table - 1
PUNJAB: POPULATION OF URBAN CENTRES (1881)

Sr.No.	Urban centre	Population	Sr. No.	Urban centre	Population
Class I	**Population (100,000+)**		47.	Dera Baba Nanak	5956
1.	Amritsar	151,896	48.	Anandpur Sahib	5878
Class II	**Population (50,000-99,999)**		49.	Mahraj	5758
2.	Patiala	53,629	50.	Dinanagar	5589
3.	Jalandhar	52,119	51.	Khemkaran	5516
Class III	**Population (20,000-49,999)**		52.	Rurka Kalan	5492
4.	Ludhiana	44,163	53.	Baranala	5449
5.	Firozpur	39,570	54.	Vairoval	5409
6.	Batala	24,281	55.	Sirhind	5401
7.	Hoshiarpur	21,363	56.	Garhshankar	5275
8.	Malerkotla	20,621	57.	Sarhali Kalan	5197
Class IV	**Population (10,000-19,999)**		58.	Sur Singh	5104
9.	Nabha	17,116	59.	Bundala	5101
10.	Jagraon	16,873	60.	Bathinda	5084
11.	Kapurthala	15,237	61.	Pail	5077
12.	Bassi	12,896	**Class VI**	**Population (below 5,000)**	
13.	Sunam	12,223	62.	Kalanaur	4962
14.	Rahon	11,736	63.	Nawanshahr	4960
15.	Phagwara	10,627	64.	Dera Bassi	4907
16.	Rupnagar	10,326	65.	Gurdaspur	4706
17.	Urmar Tanda	10,295	66.	Banga	4565
Class V	**Population (5000-9,999)**				
18.	Samana	9,495	68.	Pathankot	4344
19.	Kartarpur	9,260	69.	Kharar	4265
20.	Raikot	9,219	70.	Sri Hargobindpur	4247

(Table 1 Contd.....)

21.	Sangrur	9,139	71.	Mukerian	4116
22.	Nakodar	8,486	72.	Fatehgarh (Gurdaspur Distt.)	4078
23.	Sultanpur	8,217	73.	Khanna	3988
24.	Nurmahal	8,161	74.	Alawalpur	3802
25.	Dhanaula	7,264	75.	Narot Jaimal Singh	3706
26.	Phillaur	7,107	76.	Zira	3492
27.	Longowal(Lalgarh)	7,011	77.	Gardhiwala	3438
28.	Bhadaur	6,912	78.	Taran Taran	3210
29.	Fazilka	6,851	79.	Mukatsar	3125
30.	Handiaya	6,834	80.	Rajpura	3031
31.	Banur	6,671	81.	Akalgarh	2907
32.	Bilga	6,634	82.	Bahlolpur	2842
33.	Faridkot	6,593	83.	Bahrampur	2682
34.	Jandiala(Amritsar)	6,535	84.	Adampur	2572
35.	Miani	6,499	85.	Hadiabad	2347
36.	Hariana	6,472	86.	Kallar	2155
37.	Moga	6,430	87.	Mansurpur	2140
38.	Patti	6,407	88.	Ballanwali	1932
39.	Jandiala(Jalandhar)	6,316	89.	Makhu	1658
40.	Kotkapura	6,196	90.	Maingan	1525
41.	Majitha	6,053	91.	Sahibnagar	1320
42.	Dasua	6,248	92.	Shahpur	1258
43.	Sujanpur	6,039	93.	Ghuram	1078
44.	Mahatpur	6,011	94.	Ghanaur	1099
45.	Dharamkot	6,007	95.	Bahadurgarh	1012
46.	Machhiwara	5,967	96.	Kasohan	709

Table – 2

Punjab: Urban Centres by Size Class (1881)

Size Class	Number	Percent of Urban Centres	Percent of Urban Population
I.	1	1.04	16.55
II.	2	2.08	11.52
III.	5	5.21	16.34
IV.	9	9.38	12.78
V.	44	45.83	31.19
VI.	35	36.46	11.62
Total	96	100.00	100.00

With a population of 53629 and 52119 respectively, Patiala and Jalandhar belonged to Class II of urban centres. The former had a large size due to its status as the capital of the largest and richest native state named Patiala. The latter owed its large population mainly to its nodal position in the agriculturally rich and densely populated tract of the Bist Doab.

The total number of urban centres belonging to Classes I, II and III was 8 only, but their combined share in urban population was as high as 44.41 per cent. It is noteworthy that one-sixth of the state's urban population was living in Amritsar city alone. On the other hand the 35 towns included in Class VI accounted for only 11.62 per cent of Punjab's urban population in 1881.

Distribution of Urban Centres

In tune with notable areal variations in population density, agricultural productivity and other socio-economic infrastructure in 1881, Punjab was characterized by considerable spatial variations in the size and spacing of urban centres. Besides, princely jealousy had also contributed to such variations since these often did not allow flourishing of neighbouring towns in the adjoining states. This factor led to some distortion in the spatial distribution of urban centres in the state.

In 1881, the closest spacing of urban centres was found in the Bist Doab region. This area had the densest population in the state, was characterized by a flourishing agriculture (Banga, 1978, p.4) and dense concentration of rural settlements. Consequently, it had both agricultural and demographic surplus which are essential to feed the process of urbanization. Since the towns had graduated from village status, the pre-existing close spacing of villages had made its own contribution in this connection.

Towns were also found closely spaced along the Grand Trunk Road which runs through the centre of the state. It need not be mentioned that the main roads provided most favourable conditions for promoting the growth of closely beaded urban places in the area.

Southwestern and southern Punjab had only a few and widely spaced towns in 1881. Low density of population and poor agricultural economy characterised the area which was also known for frequent rain failures and consequent food shortages. Under these circumstances the emergence and growth of a large number of towns was certainly out of question.

The flood plain tracts along the Satluj and the Beas rivers had very few towns. These flood-prone and malarial areas were quite thinly settled at that time, and were also characterized by poor agricultural economy.

The eastern Malwa region had a moderate spacing of towns which was in tune with its intermediate position in the state with regard to population density and economic development.

It follows from the above that spacing of urban centres in Punjab in 1881 was positively correlated with density of population and agricultural prosperity. The orientation of the main roads also had notably influenced the positioning of urban centres.

Religious Composition

Among various religious communities of urban Punjab in 1881, the Muslims were numerically the largest accounting for 48.42 per cent of total (917,967) urbanites in the state (Table 1). The Hindus were at number two (40.84 per cent) followed by the Sikhs (9.37 per cent), and the Jains (0.85 per cent). The Christians were the major constituents of the 1881 Census category titled 'others' and accounted for 0.51 per cent of the urban population. Thus, the Muslims, the Hindus and the Sikhs together constituted 98.63 per cent of the urban dwellers of Punjab in 1881.

The Muslims were relatively more concentrated in the urban certres in the state mainly due to two reasons: (i) political patronage during the Muslim rule prompted more conversions to Islam in urban centres;

Table - 3
Punjab: Religious Composition of Urban Population (1881)

Size Class of Towns	Per cent share of					
	Hindus	Jains	Muslims	Sikhs	Others	Diversifi-cation Index
Class I	40.34	0.006	49.96	9.14	0.56	0.58
Class II	41.11	0.76	49.59	7.06	1.47	0.58
Class III	36.60	1.65	57.92	2.44	1.39	0.53
Class IV	43.26	1.16	49.36	6.17	0.04	0.57
Class V	39.59	0.73	43.64	16.00	0.04	0.63
Class VI	47.94	0.98	43.52	7.50	0.06	0.57
Total	40.84	0.85	48.42	9.37	0.51	0.59

Source: Computed from Census of India, 1881, Report of the Census of Punjab, Vol. II & III.

Table - 4
Punjab: Per cent Distribution of Urban Population and Religious Groups by Size Class of Urban Centres (1881)

Population Group	Size Classes of Urban Centres						
	I	II	III	IV	V	VI	Total
Total	16.55	11.52	16.34	12.78	31.19	11.62	100
Hindus	16.34	11.60	14.64	13.54	30.23	13.64	100
Jains	0.12	10.40	31.80	17.46	26.82	13.41	100
Muslims	17.07	11.80	19.55	13.03	28.11	10.44	100
Sikhs	16.12	8.67	4.25	8.42	53.24	9.30	100
Others	17.97	33.00	44.19	1.10	2.44	1.30	100

Table - 5
Punjab: Number of Urban Centres by Percentage of Religious Communities (1881)

Percent Popultion	Number of Urban Centres			
	Hindus	Muslims	Sikhs	Jains
Above 70	4	3	-	-
60-69.99	8	18	-	-
50-50.99	15	17	1	-
40-49.99	20	19	2	-
30-39.99	32	19	11	-
20-29.99	16	13	6	1
10-19.99	1	6	12	-
5-9.99	-	1	20	2
1-4.99	-	-	28	22
0.01-1.00	-	-	14	25
Nil	-	-	2	46

and (ii) greater incidence of conversions to Islam among rural artisans many of whom found it more rewarding to settle in urban areas which guaranteed a better market for their products.

The proportion of the Hindus in urban population (40.84 per cent) was close to their share in the total population. It is important to note that much of the trade and commerce of the state was mainly in the hands of urban Hindus at that time. Significantly, commercial castes among the Hindus had been little affected by conversions to Islam and Sikhism.

Constituting 9.37 per cent of Punjab's urban population, the Sikhs were the least urbanized religious gruop in 1881. Their low level of urbanization mainly stemmed from the fact that large scale conversions to Sikhism had taken place in rural areas, and mostly among the agricultural castes. Besides, their strong attachment to agriculture, low literacy and largely subsistence economy provided little incentive for urbanization.

The religious composition of Punjab's urban population was marked by significant variations from one size-class of urban centres to another. Relative share of various religious communities in the population of the only Class I City, i.e. Amritsar, were almost at par with those of the total urban population (Table 3). In other size-classes, however, the proportion of Muslims varied from 43.52 per cent (Class VI) to 57.92 per cent (Class III), and that of the Hindus ranged from 36.60 per cent (Class III) to 47.94 per cent (Class VI). The highest percentage of Sikhs was found in Class V towns and the lowest in Class III towns. The proportion of Jain population did not reveal any particular relationship with different size classes of urban centres. However, it deserves mention here that the

Christians were mainly concentrated in larger urban centres. Thus, it follows that the proportion of major religious groups did not bear any precise relationship with urban centre size categories. This point is further confirmed by the index of religious diversification[1] which had highest value (0.63) in Class V towns while the lowest (0.53) was in Class III.

Constituting about 0.5 per cent of the total urban population of Punjab, the Christians were mostly British notwithstanding the fact that religious conversions to Christianity, particularly from the lower castes, had perceptibly picked up by this time in the state.

Table 4 reveals the per cent distribution of population of religious communities by various size classes of urban centres. In this respect the Hindus resembled the distribution of general population. The Muslim were also not much different in this regard except that their share in the population of Class III towns was notably higher i.e. 19.55 per cent as compared to 16.34 per cent of the general population which was related to the inclusion of Malerkotla town, the Capital of Muslim princely state of the same name, in this category. It is significant to note that 62.54 per cent of the Sikh urban dwellers were living in towns with a population of less than 10,000 each (Class V and VI). Their share in Class II, III and IV towns was much lower than the corresponding figures for the Muslims and the Hindus. In the only Class I urban centre, i.e. Amritsar, however, the proportion of Sikh population (16.12 per cent) was at par with the Muslims (17.07 per cent) and the Hindus (16.34 per cent). It accommodated about one-sixth of the urban Sikhs in the state due to its status as the main religious centre of this community.

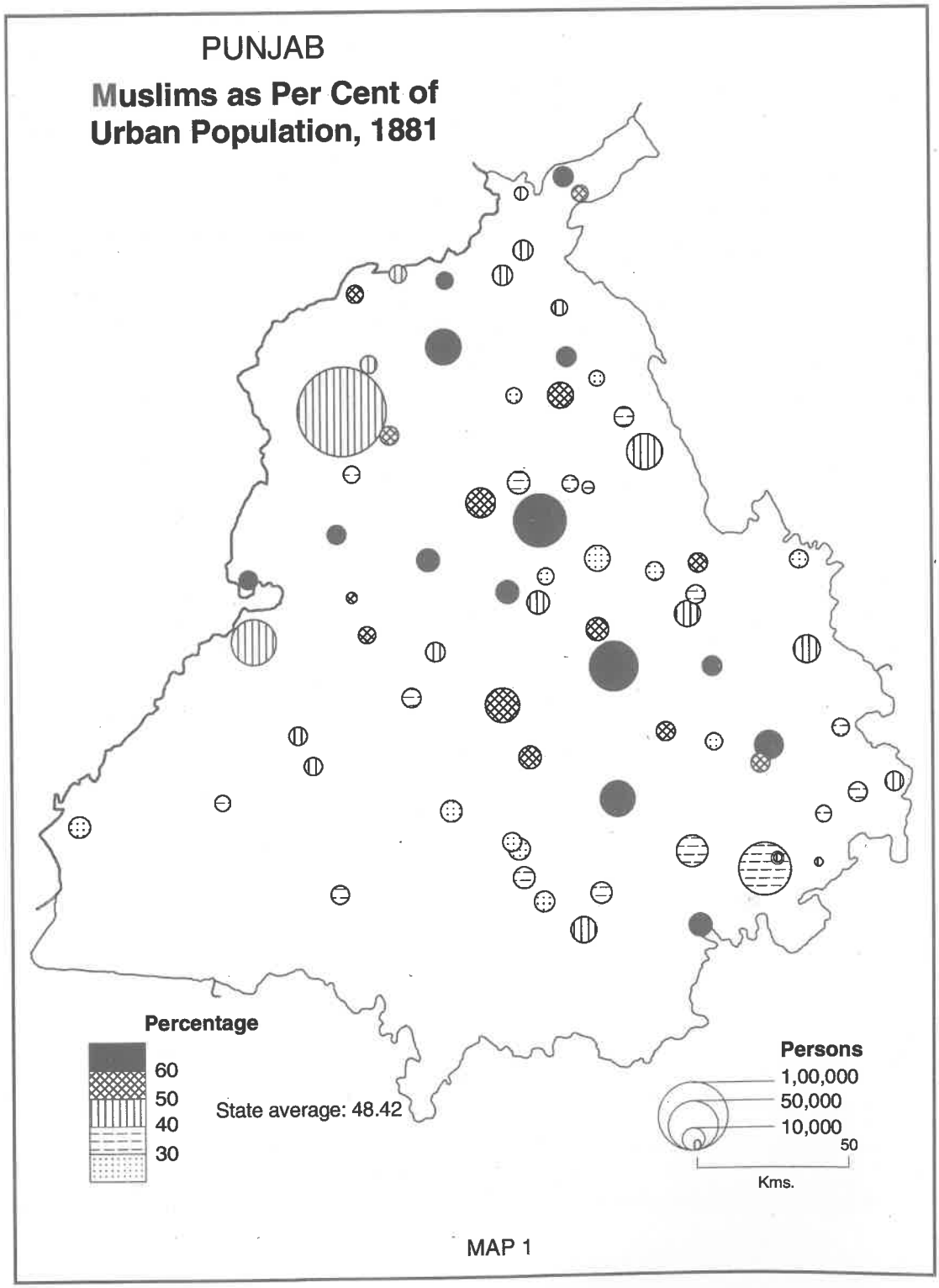
Accounting for 48.42 per cent of the State's urban population, the Muslims were in majority in 38 out of the total 96 urban centres in Punjab in 1881. Their proportion was more than 70 per cent in 3 urban places and in 18 others it was between 60 and 69.99 per cent (Table 5). Only in one town, the Muslims constituted between 5 to 10 per cent of the total population. The Hindus constituted more than 50 per cent of population in 28 urban centres and, in four of these their share was more than 70 per cent. In none of the towns their proportion was less than 10 per cent.

The Sikhs enjoyed a majority in only one town. It bears emphasis that their proportion was more than 10 per cent in only one-third of the urban centres, while in one-sixth it was even less than one per cent (Table 5).

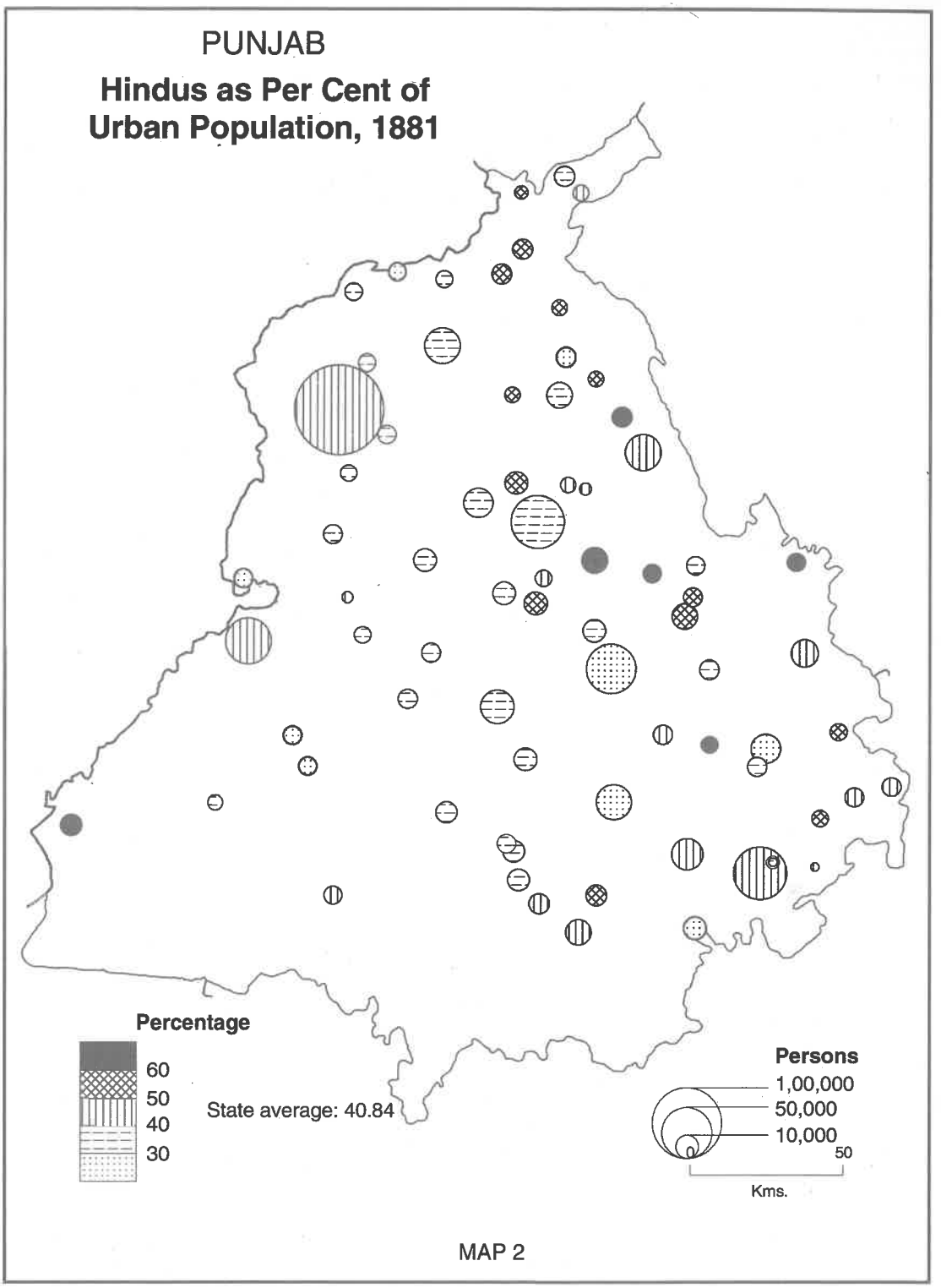
The Jains constituted more than 5 per cent of population in only 4 towns while their share was between one and 4.99 per cent in 23 towns and between 0.01 and 1.01 per cent in 25 towns. There was no Jain population in 45 urban centres. The census category of 'Other' religious communities did not figure at all in 66 urban centres, and in only three urban centres their share was between one and 4.99 per cent.

Spatial Pattern of Religious Communities

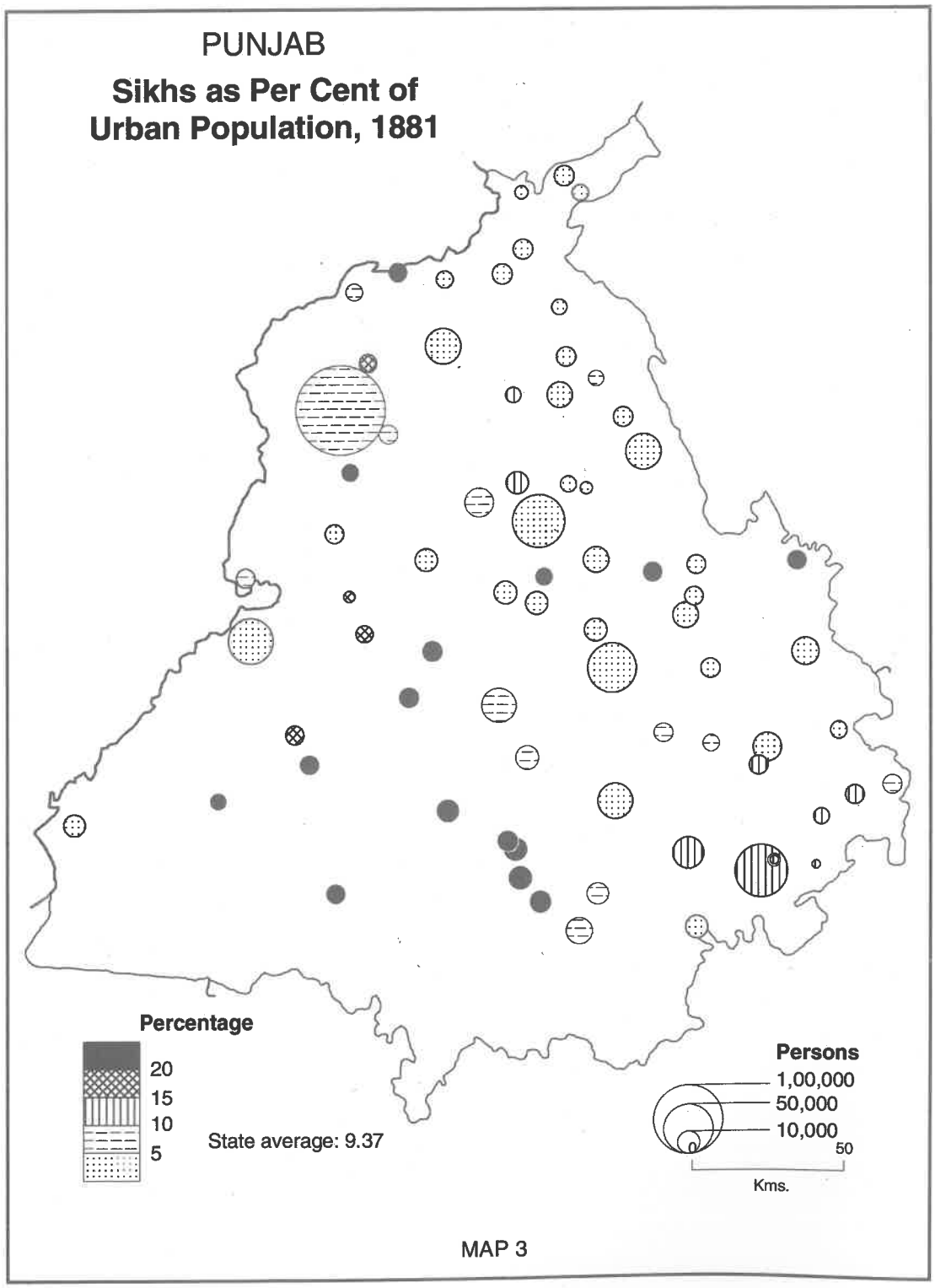
Constituting 98.63 per cent of Punjab's urban population in 1881, the Muslims, the Hindus and the Sikhs had distinct areas of their concentration. The Muslims accounted for more than 50 per cent of the population in most of the urban centres in central Punjab extending along the Grand Trunk Road (Map 1). During the long Muslim rule in the state, this tract had been under their most effective control as it was economically the most prosperous and densely populated region. It contained headquarters of the local Muslim chieftains also. The highest share of the Muslims was found in Malerkotla town, the capital of the Princely Muslim state at that time, besides being located along the main route from across the Hindukush to central India. This area had also witnessed a greater incidence of conversions to Islam. It also becomes clear from Map 1 that as one moves


PUNJAB
Muslims as Per Cent of Urban Population, 1881
Percentage
60
50
40
30
State average: 48.42
Persons
1,00,000
50,000
10,000
50
Kms.

MAP 1


PUNJAB
Hindus as Per Cent of
Urban Population, 1881
Percentage
60
50
40
30
State average: 40.84
Persons
1,00,000
50,000
10,000
0
50
Kms.

MAP 2


PUNJAB
Sikhs as Per Cent of
Urban Population, 1881
Percentage
20
15
10
5
State average: 9.37
Persons
1,00,000
50,000
10,000
50
Kms.

MAP 3

away from this belt to both east and west, the proportion of this community decreases markedly.

Constituting 40.84 per cent of the state's urban population, the share of Hindu population was more than 50 per cent in a large number of towns in eastern part of the state (Map 2). Most of these urban centres were located in or close to the foot-hill zone known for poor agricultural conditions. These areas also had a lower share of Muslim population even in rural areas. It becomes clear from Map 2 that central Punjab was the main tract of relatively low share of the Hindus. Fazilka town, located in the western half of Punjab, was the only exception having a high proportion (71.77 per cent) of this community.

The Sikhs did not have a majority in any of the urban centres in 1881 (Map 3). Western Malwa was the main region where their share was more than 20 per cent in most of the towns at that time. This area had experienced considerable conversion to Sikhism quite early in the 18th century. It is significant to note that in all the capitals of the erstwhile Sikh princely states the proportion of Sikhs was less than 20 per cent. Their population was 18.60 per cent in Faridkot, while the figures for Nabha, Patiala, and Kapurthala were 14.76 per cent, 13.24 per cent, and 5.80 per cent respectively. In the rest of the state, the Sikhs constituted less than 10 per cent of the urban population. Most of the towns of the Bist Doab and northeastern part of the Malwa region had less than 5 per cent Sikh population.

The distribution of Jains did not present any distinct spatial pattern as their relatively high proportion and at the same time a complete absence of their population could be found in adjacent towns. For instance, their highest proportion (6.57 per cent) was recorded in Patti town, but this community was non-existent in the adjoining towns of Khemkaran and Taran Taran, and had a negligible proportion (0.01 per cent) in the neighbouring Amritsar city.

The 1881 Census did not have a separate category for Christians who constituted the major share of the population listed as 'others'. Persons belonging to this category had the highest share in Firozepur (4.24 per cent) followed by Jalandhar (2.96 per cent) ascribed mainly to the concentration of Britishers in these towns. In other urban places, their proportion was either nil or negligible.

With a state average of 0.59, the religious diversification index values vary widely ranging from 0.41 in Fazilka to 0.67 in several towns of the state. Relatively high values (above 0.60) of this index occur in most of the towns in the western and south-eastern parts of the Malwa tract. It is mainly attributable to the fact that most of these towns were just like villages and contained a higher share of Sikhs as was also the case in most of the rural settlements.

In other parts of the state the proportion of the Sikhs was generally very low resulting in a low index value of religious diversification. In quite a large number of urban centres in the Bist Doab and central Malwa, the index value is below 0.50 and between 0.50 and 0.60 in most of the towns in central part of Majha, Bist Doab and eastern Malwa region.

Sex Ratio

Urban Punjab was marked by an acute deficit of females as was also the case with the general population. Table 6 reveals that there were only 812 females per 1000 males in the urban population of Punjab. Apart from male-selective in-migration, it was also attributable to considerably higher female mortality

Table - 6
Punjab: Sex Ratio of Religious Communities by Size Class of Urban Centres (1881)

Size Class	Total	Hindus	Jains	Muslims	Sikhs	Others
I	752	791	No female population	732	699	692
II	768	751	901	860	451	255
III	808	740	904	892	383	335
IV	831	814	922	878	602	926
V	841	821	896	888	766	513
VI	855	857	871	871	750	1179
Total Urban Population	**812**	799	**898**	**854**	**688**	**374**

Sources: Compiled from: Census of India 1881, Punjab, Vol. II, Appendix A, and Vol. III, Appendix B.

particularly among the infants and the reproductive age-groups. Though female infanticide might have also been prevalent to some degree, higher death rate of female infants was mainly due to intentional neglect as the life of a girl was "less valued and worse cared for than that of a boy" (Census of Punjab, 1881, p.711). Females in general were also discriminated against in terms of food and medical care resulting in greater morbidity and mortality among them. Besides, repeated pregnancies, unskilled midwifery under unhygienic conditions and lack of due pre- and post-natal care also contributed to higher female mortality.

Female deficit was present among all the religious groups (Table 6). The highest sex ratio was recorded among the Jains (898) followed by the Mulsims (854), the Hindus (799), the Sikhs (688), and others (374). Relatively high sex ratio among the Jains could be associated with their greater exposure to urban living which diluted the prejudice against females. Extremely low sex ratio among the urban Sikhs (688) in 1881 cannot be explained simply in terms of male-selective in-migration. It is indicative of higher female mortality among them as compared to that among other communities. In case of the general population, urban centre size category and sex ratio were inversely correlated. The same was also true to a large extent for the Hindus. No such relationship can be identified for the category of 'other' religious groups.

Conclusions

In addition to having a very low level of urbanization, Punjab was characterized by a heavy preponderance of small towns in 1881. More than one-third of the total urban centres had a population of less than 5000 each, while in one-sixth this figure was even below 3000 persons. It is notable that smaller towns were more numerous in the native states where all places having Octroi Posts were treated as urban places. Many of the towns contained considerable arable areas within their jurisdiction and as such their distinction from rural settlements was more of a degree than of kind.

As expected, areas with higher agricultural productivity and greater population density were characterized by a closer spacing of urban centres. Transport nodality and socio-administrative status were the main determinants of the size of urban centres. Accordingly, towns were found closely spaced in the densely populated Bist Doab region and also along the Grand Trunk Road. Conversely, the agriculturally less developed and sparsely populated southern and southwestern Malwa region stood apart in having relatively wide spacing of urban centres. The flood plain tracts also had a nominal share in terms of urban centres.

The Muslims and the Hindus together constituted about nine-tenths of the urban population of the state in 1881. Higher proportion of Muslims in urban population was mainly due to religious conversions to Islam during the long tenure of Muslim rule in the state. The share of Hindus among urbanites was not much different from their percentage in the general population. On the other hand, the low proportion of the Sikhs reflected a lower rate of proselytism to this religion in the urban areas.

It is noteworthy that the proportion of Muslims was relatively high in the larger four urban population size classes. However, the percentage share of Hindus and Sikhs does not show any distinct pattern with respect to size categories. Consequently, the religious diversification index varies randomly from one size class to another.

The Muslims were in majority in 38 towns while the corresponding figure for the Hindus was 28 only. It merits attention that the proportion of each of these two communities was more than 20 per cent in most of the urban centres. However, the Sikhs' share was below 10 per cent in about two-thirds of the urban places. Similarly, commensurate with their very low proportion in Punjab's urban population, the Jains' share was below 5 per cent in all but three urban places.

The proportion of various religious communities was characterized by distinct spatial patterns. The Muslims enjoyed majority in most of the urban places in densely populated and more prosperous central Punjab. Being on the prime route from Central Asia to Delhi, this area had experienced greater conversions to Islam.

The Hindus were particularly more concentrated in the eastern part of the state which had distinctly lesser impact of religious proselytism to Islam as well as to Sikhism.

Western Malwa was the only area of notable concentration of the Sikhs. This was mainly due to considerable religious conversions to Sikhism at quite an early stage consequent upon the prolonged visit of Guru Gobind Singh to this area while on his way to the Deccan.

The proportion of urban Jains did not have any distinctive spatial pattern. However, the Christians were mainly concentrated in places where Britishers were stationed.

A distinctive feature of Punjab's urban population in 1881 was its very low sex ratio attributable mainly to higher female mortality, particularly during infancy and reproductive age-groups, reflecting the low status of females in society. Inter-religious variations in sex ratio were mainly the outcome of the differences in degree of male-selectivity in migration to urban areas.

Note

1. The paper employs the Gibbs-Martin Index of Diversification. The formula is $1-\sum x^2/(\sum x)^2$, where x is the number of persons from each religious community. As there were six religious communities for which census data were available, diversification index will range from 0 to 0.83.

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DIFFERENTIALS IN FERTILITY BY RELIGION IN DARJEELING DISTRICT

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Abstract

Though the study of fertility has traditionally been an exclusive filed of demographers and medical/bio-scientists, but in the recent years "Saffron Demographers" have utilized 'demographic data to achieve non-demographic objectives'. Population geographers have shown keen interest to study the problem under the prevailing environment. Fertility may be determined by several socio-economic, cultural, demographic and biological factors such as education and income literacy, work participation ratio, female work participation ratio, female literacy, tertiary sex ratio and age at marriage etc. Since the above attributes are not uniform across the religious groups, the differentials may exist between the communities. The present study deals with fertility differentials by religion in Darjeeling district. Understanding the nature, extent and determinants of such differentials are the primary objectives of the study. For this purpose 600 sample respondents, married females in the age group of 15-49 years, were interviewed with pre-designed survey schedule to collect primary data on fertility and their assumed determinants. The study shows that there exist differentials in fertility among the religious groups in the district and socio-economic factors do not work with the same effect across religious groups, so far as the reduction of fertility is concerned.

Keywords: *Total Fertility Rate (TFR), Crude Birth Rate(CBR), Primary Data, Secondary Data, Standard Deviation (SD), Coefficient of Variation (CV), Work Participation Rate (WPR), Linear Regression, Age At Marriage, Secondary Fertility.*

Introduction

Growth of population and replenishment of human society depends largely on human fertility, i.e. biological replacement, and therefore plays a positive role in the population dynamics. Human fertility has been traditionally investigated in two separate disciplines: Biology and Social Sciences. In Social Science, the study of human fertility is considered as one of the most important aspects of investigation.

In the population dynamics fertility plays both positive and negative roles. Very low fertility, particularly below the replacement level, may threaten the society by extinction. As pointed out by Morgan "Is low fertility a twenty-first century demographic crisis?" (Morgan, 2003, p. 589). On the other hand high fertility may create several economic, social and political problems of varied nature. This replacement is a very delicate and at the same time a complicated process. "Within the biological limits of human fertility, several social, cultural, psychological, as well as economic and political factors are found to operate, and these are responsible for determining the level

of differentials of fertility" (Bhende and Kanitkar, 2003, p. 241).

The present study deals with the comparative status of fertility among the four major religious groups found in the study area. There has been an attempt to rank the religious groups on the basis of the measures of fertility i.e. Total Fertility Rate (TFR) and Crude Birth Rate (CBR). Age Specific Fertility Rate (ASFR) has been calculated for all the religious groups. A comparison of ASFR of the religious groups has also been attempted.

Literature Survey

Human fertility has been a very interesting theme of discussion and research among demographers in particular and social scientists in general. From the studies conducted by the different scholars, it is clear that sterility primarily depends on number of physiological factors such as (i) adolescent sterility, (ii) Post-partum sterility and average interval between successive births, (iii) Primary and secondary sterility, (iv) Reproductive wastage as well as a few social and cultural factors termed by Davis and Blake as intermediate variables (Bhende and Kanitkar, 2003, pp. 249-254).

One of the pioneering works 'Techniques of Population Analysis' (Barclay,1985, p. 168-169) in the field of fertility points out that the problem of measuring fertility evolves due to the following:

a) Among the people who are "exposed to risk" of child birth, parenthood is an event that can occur more than once.

b) A birth involves two parents, but birth rates must be restricted to one or the other.

c) Parenthood is limited to a portion of a population.

d) A small proportion of births, perhaps in the range of one to two percent, produce more than one child (twin cases) and thereby creating confusion in fertility rates.

e) Personal choice and preference have a wide variety of influence on fertility.

Cain's study of relationship between landholding and fertility on the basis of land-security hypothesis and land-labour demand hypothesis in the context of Bangladesh could not conclusively establish the relationship between the two."Our discussion of the relationship between landholding and fertility, and the pertinence of the land-security and land-labour demand hypothesis, illustrates the potentially high cost of abstracting from the institutional context of individual and household behaviour" (Cain, 1985, p.15).

Bongaarts and Potter identified independent variables of fertility which they called 'Proximate Determinants'. According to them "the biological and behavioral dimensions of human fertility are linked through a set of 'Proximate Determinants' or 'intermediate fertility variables'. Age at the first marriage, the use of contraception, and the breast feeding duration and pattern are some of the Proximate Determinants" (Bongaarts and Potter, 1983, p. ix). Socio-economic factors and health and nutrition are the determinants of proximate variables but "...health and nutrition are, in general, relatively unimportant determinants of fertility. Socio-economic factors must therefore be the principal causes of fertility trends and differentials" (Bongaarts and Potter, 1983, p. 14).

McQuillan (2004) in his study "When Does Religion Influence Fertility?" suggested that religion may have influence on fertility only when following pre-conditions are fulfilled :

a) The religion in question must articulate behavioral norms that have linkages to fertility out-come.

b) A religious group must possess the means to communicate its teaching to its members and to enforce compliance.

c) Religious groups are more likely to influence the demographic choices of their followers when members feel a

strong sense of attachment to the religious community.

He further observed that "When these three attributes are present, it is very likely that religion will influence demographic behaviour. Nevertheless, the consequences of the religious influence are not uniform. For example, there is a general sense that religion tends to be pronatalist and thus encourages higher fertility. While this is true in most cases, it need not be so all the times. The case of Iran is an instructive current illustration of a situation in which a highly institutionalized religion has played an important role in the spread of family planning and, ultimately in reducing rates of fertility" (McQuillan, 2004, p. 51).

Bhagat has worked extensively on fertility differentials using 2001 census data. According to his 2001 study presenting data on births in a misleading manner creates confusion. "Census in independent India until 1991 hides more than it reveals. It is now obvious that the census of 2001 is more conscious of this fact and intends to publish the socio-economic data along with demographic data on religion" (Bhagat, 2001, p. 4356). Bhagat (2004) analysed the data on birth rates, decline in fertility in the wake of the claims that Hindus are going to become a dying race due to higher fertility among Muslims and at the same time infiltration (Muslim) from neighbouring Bangladesh. He emphasized that "Those who abuse demography for communal ends do not recognize the facts; in recent years rate of acceptance of family planning practices has been rising faster among Muslims than among Hindus and fertility has been falling more rapidly among the Muslims" (Bhagat, Sept., 2004, accessed from EPW website on 17/12/ 2007).

Hindu-Muslim fertility differential has been studied by Bhagat and Praharaj (2005) where they find that the population growth rate of Muslims is relatively higher as compared to Hindus and prevalence of family planning measures is a little low among the Muslims as compared to Hindus. They found sex selective abortion as one of the reasons for higher fertility as compared to Hindus since the child sex ratio is 950 among Muslims as compared to 925 among Hindus. Socio-economic and educational backwardness of Muslims is found to be a very important factor. However the study expresses optimism about declining fertility rates among Muslims. "It is true that a Hindu-Muslim differential in fertility persists in India's demographic reality, but it is no more than one child. It is not too large to swamp India's Hindu majority in the foreseeable future, nor is the gap likely to persist for a very long time as we find that the fertility level among Muslims declines with increasing level of education and standard of living. The faster increase in family planning among Muslims supports this conjecture" (Bhagat and Praharaj, 2005, p. 417).

Basu argues that it is the hidden agenda of the hard line Hindu communalists and their so called 'expert demographers' who advance the demographic arguments to initiate intervention in Muslim life through pressurizing the government and policy makers since "They do not even extend the demographic argument to consider other concomitants of religion-fertility relationship in the country, poverty and education in particular. If they did, the policy would be for increased resource into the socio-economic development of the Muslim minority. Instead the entire emphasis is on interventions in Muslim life which have at best a tenuous relationship with fertility" (Basu, 1997, p. 6).

Jeffery and Jeffery (2000) while analyzing the regional variations in fertility which has a great impact on over all fertility of Muslims opine that "part of the explanation for high Muslim fertility in India as a whole, merely reflects the fact that Muslims are a larger proportion of the population in North India (where the fertility rates are relatively high) than they are in the rest of India (where fertility rates are relatively low)" and that "Hindu fertility rates in much of North India are higher than Muslim fertility rates in South India".

Shariff's study finds that with respect to all indicators of socio-economic development, the Muslims are lagging behind the Hindus including work participation, employment and education causing higher fertility among Muslims as compared to Hindus. Further, "child mortality among both the urban and rural Muslims is comparatively low. A combination of a positive growth of population and low child mortality seems to have enabled a marginally higher growth of Muslim population in India". A simulation exercise in his study suggests that the Muslim population will not overtake the Hindu population in India during foreseeable future" (Shariff, 1995, p. 2953).

Mehta points out that "fertility in Muslims displays a consistent pattern of decline with socio-economic development in general and educational development in particular. Thus the population growth difference between Hindus and Muslims will ultimately narrow down. A more realistic assumption would, therefore, be to assume that population of both Hindus and Muslims decline at an accelerated pace so as to approach a stationary state by the mid-21st century" (Mehta, 2005, p. 160).

Objectives

The present study primarily aims at identifying the determinants of differentials in fertility in the study area. The extent to which these determinants control fertility is a basic question which needs to be investigated further. The objectives of the present study could, therefore, be outlined as follows:

1. To identify the extent of differentials in fertility by religions in the study area.
2. To understand the impact of educational attainment of husband and wife on fertility.
3. To understand the extent to which occupation of the couple (husband and wife) influences fertility.
4. To estimate the impact of income on fertility.
5. To evaluate the influence of age at marriage of women on fertility.

Methodology

The sample respondents in this study are married females in the age group of 15-49 years considered as the childbearing age group. The respondents have been selected out of the universe primarily following multi-stage random sampling. At the first stage six blocks and Siliguri Municipal Corporation have been selected (Table 1) using clustered random sampling. At the second stage a number of *mouzas* (revenue villages) and wards (urban municipal area) have been selected using simple random sampling with the help of random tables from the list of these units available in the C. D. Block-wise list of villages and wards in the Village and Town Directory of Census of India. At the third stage the list of households with married female in the age group of 15-49 years was collected from Integrated Child Development Scheme (ICDS) Centres i.e. Anganwari Centres and also from the ASHA (Accredited Social Health Assistants) workers. Using random table the respondents were selected randomly. Replacement was allowed only when the respondent was not available on the subsequent day of the survey also. The replacement was essentially the next available female in the list.

Following the sampling as stated above it was estimated that 100 Buddhists, 100 Christians, 200 Hindus and 200 Muslims would be satisfactorily representative of the religious groups in the district. The sample families have been interviewed with a pre-designed schedule. Before finalization of the schedule a pilot survey was carried out in the field. The respondents were interviewed directly by the author.

TFR and CBR have been calculated form the data collected from different primary and secondary sources. Mean, Standard Deviation (SD) and Coefficient of Variation (CV) of TFR and CBR have been calculated to examine the variation in fertility between different religious groups. Mean, S. D., and C.

Table – 1
Darjeeling District : Distribution of sample C. D. Blocks

C. D. Blocks	Sample C. D. Blocks	Remark
Darjeeling Pulbazar	Selected	Both Rural and Urban
Rangli Rangliot		
Kalimpong - I		
Kalimpong - II	Selected	Both Rural and Urban
Gorubathan		
Jorebunglow Sukiapokhri		
Mirik	Selected	Both Rural and Urban
Kurseong		
Matigara		
Naxalbari	Selected	Only Rural
Phansidewa	Selected	Only Rural
Kharibari	Selected	Only Rural
Siliguri (Municipal Corporation)	Selected	Only Urban

Table – 2
Darjeeling District : Age Specific Fertility Rates for Sample Religious Groups (2007-08)

Age group (years) (1)	No. of live births during last one year (2007-08) (2)	No. of females in the age group (2007-08) (3)	Age Specific Fertility Rate [(2)÷(3)]×1000=(4)
15-19	11	221	49.77
20-24	52	195	266.67
25-29	24	174	137.93
30-34	13	117	111.11
35-39	8	109	73.39
40-44	4	108	37.04
45 and above	2	49	40.82
All ages /Total	**114**	**973**	**716.73**
TFR = (716.73×5)÷1000 = 3.58			

Source: Computed from data collected in the field.

Table – 3

Darjeeling District : Total Fertility Rates by Religious Groups (2007-08)

Religious group	Total Fertility Rates (2007-08)
Buddhist	2.44
Christian	4.89
Hindu	2.98
Muslim	3.99
Average of all four religions	**3.57[#] (3.58)[$]**
Standard Deviation	**0.9045**
Coefficient of variation	**27.34**
Variance	**0.8180**

Source: Computed from data collected in the field.
 # Simple average of TFR of four religious groups.
$ calculated by taking number of live births in a year to females of specific age group and number of females in a specific age group of four religious groups taken together.

Table – 4

Darjeeling District : Crude Birth Rate (CBR) by Religious Groups(2007- 08)

Religion	No. of live births during 2007-08	Population (2007-08) during enumeration	Mid-year population (2007-08)	Crude Birth Rate (CBR)
Buddhist	11	430	419	26.25
Christian	23	505	482	47.72
Hindu	30	932	902	33.26
Muslim	50	1030	980	51.02
Total/Average	**114**	**2897**	**2783**	**39.56**
CBR for all religions	**CBR = (114÷2783)×1000 = 40.96**			

Source: Computed from data collected in the field.

V., for one religious group with different socio-economic background and also mean and C.V. for the same socio-economic strata of a population group with different religious background have been calculated to examine the difference of fertility. In order to reach in to the depth of the problem of number of births, the number of pregnancies too have been included to depict fertility and subsequently statistical analysis has been conducted.

Karl Pearson's Correlation Coefficient has been calculated between different income levels (per capita income) and fertility. Similarly, different educational attainment levels of the respondents, their parents and also husbands have been correlated with fertility level in order to find out correlation coefficient. Age at marriage is taken as one of the important determinants of fertility and hence it has been correlated with the fertility level.

Linear Regression (Least Square Method) analysis taking fertility (number of pregnancies) as dependent variable and per capita income, level of per capita expenditure, age at marriage, level of educational attainment of respondents, parents as well as husbands and also occupation as independent variables have been done to estimate the extent of influence of each explanatory variable on fertility.

Generalities

Demographic data reveals that Darjeeling district has experienced a population growth rate of 23.79 percent during 1991-2001 which is above the national and state average of 22.66 percent and 17.77 percent respectively. During this period the CBR and TFR for the Hindus were 19.50 percent and 2.20 percent respectively where as for Muslims the values were 34.80 percent and 4.70 percent respectively thereby indicating a differential in CBR & TFR. As such the CBR and TFR values for the district are higher than both the state and national figures. The multi-ethnic society with great diversity of religion, caste, culture, language etc. along with general backwardness in terms of socio-economic and educational development in the study area are the probable causes of higher fertility in the district.

The survey result of 600 respondents gives an average CBR of 40.96 per thousand per year. The TFR calculated for the district is 3.58. There is a large variation in fertility values among the religious groups. The age specific fertility rates of all the religious groups taken together are given in Table 2. Age specific fertility rate calculated for the area is found to be highest among the females in the age group of 20-24 years followed by 25-29 years and 30-34 years. A sharp decline is recorded for females above 34 years.

The analysis of TFR and CBR among the four religious groups reveals that both CBR and TFR are the highest among the Muslims followed by Christians, Hindus and Buddhists (Table 3). For all the communities CBR in Darjeeling district is found to be higher than all India average, but the gap is the highest in case of Muslims (20.22 percent) and the lowest for Hindus (8.16 percent). The TFR values are found to be slightly lower in Darjeeling district as compared to national average for all the communities but the difference is marginally higher in case of the Hindus (0.12) and lower for the Muslims (0.11).

It is observed from Table 4 that there exists a wide variation in the crude birth rates in the region among the religious groups. With a modest figure of 33.26, Hindus are closest to the average of all the religious groups where as the Muslims top the list with a moderately high figure of 51.02. Buddhists (26.25) hold the bottom position in the list of religious groups with respect to crude birth rates and the Christians (47.72) lie very close to Muslims having quite high CBR.

It is interesting to note that the values for all indicators of fertility such as number of pregnancies, number of births including still births and number of children during enumeration for the district are moderately high. Of the average for all the communities

Table – 5

Darjeeling District : Average Values of Fertility Indicators by Religion (2007- 08)

Religious group	Buddhist	Christian	Hindu	Muslim	Total/ Average
No. of pregnancies	1.67	2.56	2.65	3.03	2.48
No. of births including still births	1.59	2.28	2.33	2.78	2.25
Average no. of children during enumeration	1.55	2.16	2.24	2.56	2.23

Source: Computed from data collected in the field.

Table – 6

Darjeeling District : Distribution of Respondents by Number of Births including Still Births and by Religion (2007-08)

Religion	Number of children					
	No child (0)	1	2-3	4-5	?5	Total
Buddhist$	17	21	60	2	0	100
Christian$	14	10	67	5	4	100
Hindu#	11	51	108	27	3	200
Muslim#	9	52	81	48	10	200
Total	**51 (8.50)**	**134 (22.33)**	**316 (52.67)**	**82 (13.67)**	**17 (2.83)**	**600 (100.00)**

Source: Computed from data collected in the field.
$ Figures are out of 100 sample respondents. # Figures are out of 200 sample respondents.
Note: Figures in parenthesis indicate percentages to total.

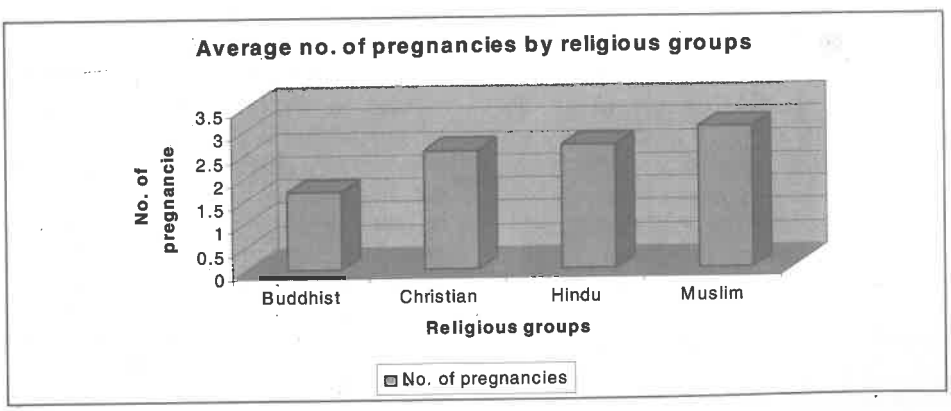

Fig. 1

Table – 7
Darjeeling District : Distribution of Respondents by Number of Children (2007-08)

No. of children,	Buddhist		Christian		Hindu		Muslim	
	R	C	R	C	R	C	R	C
Childless (0)	17	0	14	0	11	0	9	0
1	21	21	10	10	51	51	52	52
2	54	108	39	78	57	114	47	94
3	6	18	28	84	51	153	34	102
4	2	8	5	20	24	96	37	148
5	--	--	--	--	3	15	11	55
6	--	--	4	24	2	12	8	48
?7	--	--	--	--	1	7	2	14
Total	**100**	**155**	**100**	**216**	**200**	**448**	**200**	**513**

Source: Computed from data collected in the field.
Note: 'R' stands for number of respondents and 'C' stands for number of children.

2.48 pregnancies, 2.48-2.25 = 0.23 (Table 5) were lost due to induced abortion or natural termination of pregnancy. Even after average 2.25 births, 2.25-2.23 = 0.02 remains unaccounted during enumeration probably due to a number of still or death of a number of infants at different stages of life may be due to health problems or malnutrition.

A close observation of Table 5 further reveals a definite pattern of fertility attributes. These indicators are found to be the highest among the Muslims and the lowest among the Buddhists. An effort has been made to understand the reasons for such differences in fertility by religion in the subsequent sections.

There is a marked difference in the distribution of respondents by number of births including still births among the religious groups. It has been revealed during the survey that number of respondents having given no births (including still births) is the highest among the Buddhists which is 17 percent (Table 6) followed by the Christians (14 percent) and the Hindus (5.50 percent). The lowest percentage of respondents having no births including still births happens to be among Muslims which is estimated to be 4.5 percent. On the other hand, as high as 29 percent of the Muslim respondents had four or more than four births which is only one percent among the Buddhists, 4.50 percent among the Christians and 15.00 percent among the Hindu respondents.

It is interesting to note that number of pregnancies, number of births as well as number of children during enumeration were fairly high in case of Christians, Hindus and Muslims. All the above mentioned religious groups recorded higher indicators of fertility as compared to the average situation in the region. It is, therefore, obvious that the Buddhists have very low fertility indicators and therefore, low fertility too.

It is clear from Fig. 1 that most of the respondents irrespective of their religious affiliation have on an average around 2.5 children. There are only 9 respondents out of total 200 Muslim respondents who reported having no child during enumeration. Similarly, 11 respondents from among 200 Hindu respondents (Table 7) did not have any children during enumeration.

Buddhists and Christians are found to be better off as compared to their Muslim and Hindu counter parts from the point of view of number of children. While 14 out of total 100 Christian respondents registered themselves with any child, 17 Buddhist respondents out

of total 100 respondents did not have any child.

It is a fact that number of children recorded during the survey depends on several factors such as rate of termination of pregnancy, both natural and induced, infant mortality rate, child mortality rate, juvenile mortality as well as adult mortality rate. These factors in turn depend on overall health, socio-economic condition, condition of nutrition and also discrimination against girl child etc.

The gap in the number of children between religious groups is remarkable. It will be seen in Table 7 that as high as 92 percent of the Buddhist respondents had only two or less than two children and 63 percent of the Christian respondents had two or less than two children. An almost equal proportion of Muslims and Hindus had up to two children. The figure is only 54 percent in case of Muslims and 59.50 percent in case of Hindus.

Only 8 percent of Buddhist respondents reported of having three to five children which is 33 percent in case of Christians. The figure for Hindus is 39 percent and 41 percent for Muslim respondents. The number of respondents having six or more than six children is relatively small irrespective of religious affiliation. Only five percent of Muslim respondents reported having six or more children. It is interesting to note that no respondent belonging to Buddhist community reported having six or more children.

Fertility among Religious Groups

THE BUDDHISTS

It has been mentioned earlier that Buddhist community has got the lowest fertility among the four religious communities under consideration with a TFR of 2.44 as well as the lowest CBR of 26.25 (Table 3).

The age specific fertility rates for Buddhists present some interesting features. The ASFR for the age group of above 45 years is nil among Buddhists (Table 8 and Fig. 2). The age group of 15-19 years also has a very low ASFR of 0.06 per 1000. Most of the births have been recorded for the mothers in the age group of 20-39 giving an ASFR of 71.43 to 166.67 per 1000.

Table – 8

Darjeeling District : Age Specific Fertility Rates among Buddhists (2007- 08)

Age group (years) (1)	No. of live births during last one year (2007-08) (2)	No. of females in the specific age group (2007-08) (3)	Age Specific Fertility Rates [(2)÷(3)]×1000=(4)
15-19	1	17	0.06
20-24	3	18	166.67
25-29	2	23	86.96
30-34	2	15	133.33
35-39	2	28	71.43
40-44	1	33	30.30
45 and above	0	12	0.00
All ages /Total	**11**	**146**	**488.75**
TFR = (488.75×5)÷1000 = 2.44			

Source: Computed from data collected in the field.

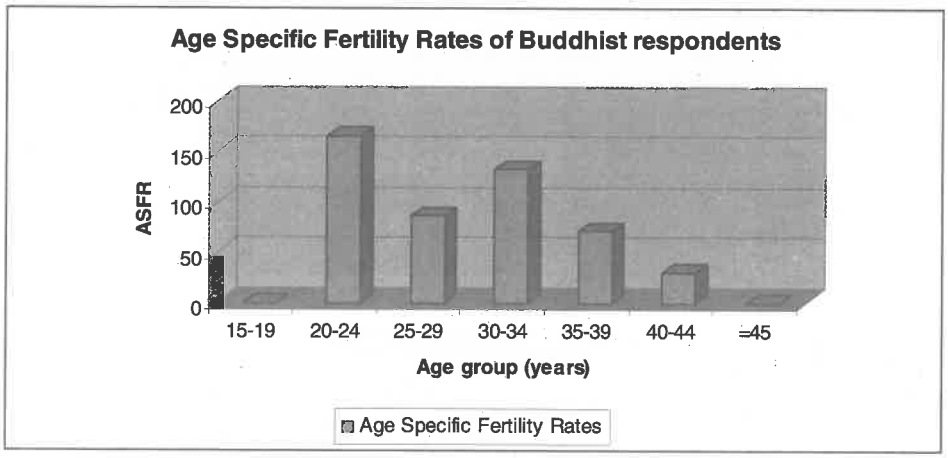

Fig. 2

Table – 9
Darjeeling District : Age Specific Fertility Rates among Christians (2007-08)

Age group (years) (1)	No. of live births during last one year (2007-08) (2)	No. of females in the age group (2007-08) (3)	Age Specific Fertility Rates [(2)÷(3)]×1000=(4)
15-19	3	31	96.77
20-24	5	32	156.25
25-29	8	38	210.53
30-34	3	24	125.00
35-39	2	21	95.24
40-44	1	22	45.45
45 and above	1	4	250.00
All ages /Total	**23**	**172**	**979.25**
TFR = (979.25×5)÷1000 = 4.89			

Source: Computed from data collected in the field.

THE CHRISTIANS

It has been observed earlier that fertility among the Christians in the district is higher than that of the Buddhists. The TFR of 4.98 calculated on the basis of data collected from the field is quite high and higher than the over all TFR of 3.58 for all the religious groups under consideration (Table 9).

The highest ASFR among Christian respondents is in the age group of 45 years and above (250.00) and the lowest in the age

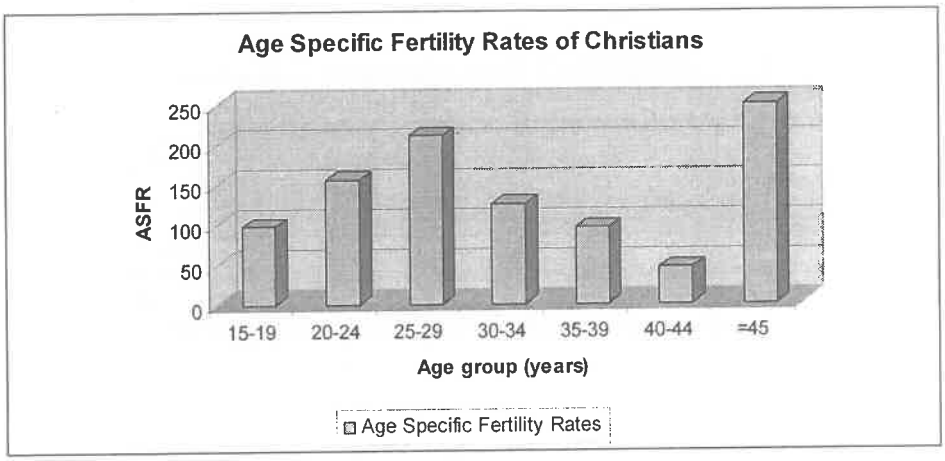

Fig. 3

Table – 10
Darjeeling District : Age Specific Fertility Rates among Hindus (2007- 08)

Age group (years) (1)	No. of live births during last one year (2007-08) (2)	No. of females in the age group (2007-08) (3)	Age Specific Fertility Rates [(2)÷(3)]×1000=(4)
15-19	2	84	23.81
20-24	16	59	271.19
25-29	6	48	125.00
30-34	3	39	76.92
35-39	2	36	55.56
40-44	1	22	45.45
45 and above	0	13	0.00
All ages / Total	**30**	**301**	**597.93**
TFR = (597.93×5)÷1000 = 2.98			

Source: Computed from data collected in the field.

group of 40-45 years i.e. 45.45 (Table 9). Since the number of females in the age group of 45 years and above is low, only four, even a single child has contributed to this very high ASFR value. Further, the highest number of children is recorded among females in the age group of 20-29 years resulting in high ASFR (Fig. 3).

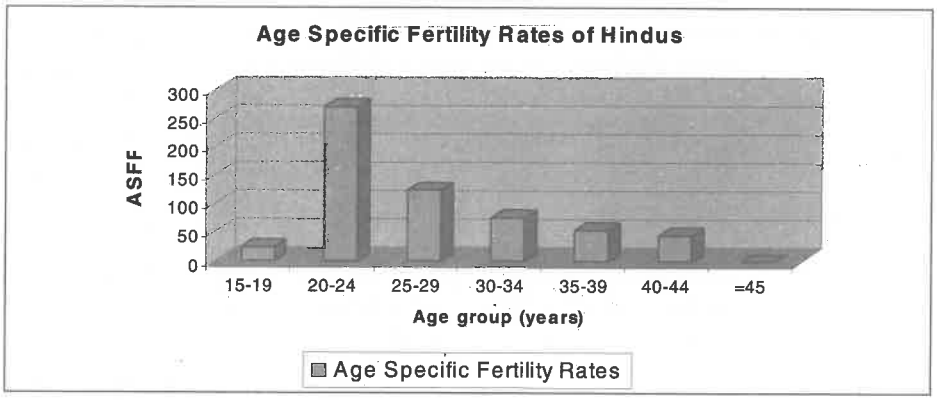

Fig. 4

Table – 11

Darjeeling District : Age Specific Fertility Rates among Muslims (2007- 08)

Age group (years) (1)	No. of live births during last one year (2007-08) (2)	No. of females in the age group (2007-08) (3)	Age Specific Fertility Rates [(2)÷(3)]×1000=(4)
15-19	5	89	56.18
20-24	28	86	325.58
25-29	8	65	123.08
30-34	5	39	128.21
35-39	2	24	83.33
40-44	1	31	32.26
45 and above	1	20	50.00
All ages/ Total	**50**	**354**	**798.63**
TFR = (798.63×5)÷1000 = 3.99			

Source: Computed from data collected in the field.

THE HINDUS

The extent of fertility among the Hindu respondents is moderately high. The TFR of 2.98 is higher than that of the Buddhists (2.44) but lower than that of the Christians (4.98), and the Muslims (3.99) (Table 3). Further, the CBR among the Hindu respondents (33.26) is higher than the Buddhists (26.25) and lower than the Christians (47.72) and Muslims (51.02).

The prevailing ASFR among the Hindus has been depicted in Table 10 and Fig. 4. It reveals that the ASFR among the respondents in the age group of 20-24 years and 25-29 years is quite high i.e 271.19 and 125.00 respectively. The age group of 15-19 has a

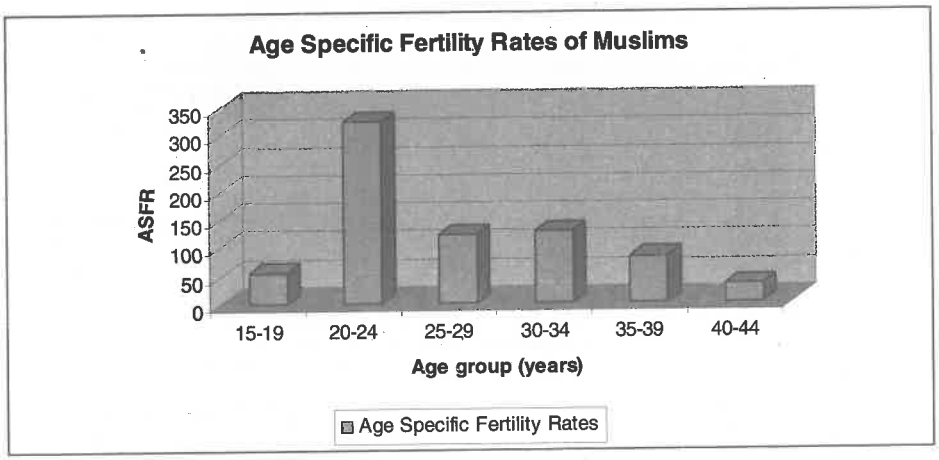

Fig. 5

considerably low ASFR of 23.81. In the relatively upper age group of 30-34 years onwards, there is a trend of a low ASFR ranging between 45.45 to 76.92.

THE MUSLIMS

It is evident from the study that among Muslims TFR is second highest i.e. 3.99 (Table 3) and CBR of 51.02 (Table 4) is highest compared to all the religious groups. Among the Muslim respondents, the highest ASFR is found to be in the age group of 20-24 years (Table 11 and Fig. 5) which is again highest among all the religious groups. In the age group of 25-29 years and 30-34 years, the ASFR is moderately high with value crossing 100. The females in the upper age group i.e. 40-44 years and 45 years and above have relatively low ASFR of 32.26 and 50.00 respectively (Table 11).

Determinants of Fertility: Socio-economic Correlates

It is generally believed that the Muslims have higher fertility as compared to other religious groups. This belief is generally not supported by either logic nor does any body try to analyse the reason of such religious differentials. An attempt has been made to understand why this difference in fertility exists across religious groups in the following discussion.

(A) FERTILITY AND EDUCATION

Both measures of fertility i.e. TFR and CBR and average number of years spent in school are presented in Table 12. It will be seen from this table that the over all educational attainment among the respondents in the study area is quite low. Only Buddhists have completed nearly 10 years of education. All other respondents belonging of different religious groups have completed only about five and half years of education. As a matter of fact the lowest fertility is observed among the Buddhists. It is not only the educational achievement of the respondents which is relatively higher in case of Buddhists but also the education of husbands as well as education of their parents too. Compared to other groups the Christians are lagging behind. Educational attainment has a negative impact on fertility but the extent of influence varies from one religious community to other as their socio-economic conditions vary. Among all the respondents the number of years of schooling of the respondents is higher than the parents but lower than the husbands. The strongest relation of educational attainment is found among the Muslims ($r = -0.2415$) and the weakest among the Buddhists ($r = -0.1041$).

Table – 12
Darjeeling District : Fertility and Schooling by Religion(2007-08)

Religious group	Fertility Rates		No. of years of schooling@			
	TFR	CBR	Respondent's (self)	Husband's	Father's	Mother's
Buddhist	2.44	26.25	9.73	10.82	5.99	3.86
Christian	4.89	47.72	5.28	7.12	3.74	0.72
Hindu	2.98	33.26	5.84	7.31	5.12	2.21
Muslim	3.99	51.02	5.56	6.24	4.59	1.73
Average/ Over all	**3.57**	**39.56**	**6.35**	**7.87**	**4.86**	**2.13**

Source: Computed from data collected in the field.
@ No. of years of schooling including the years for which the students were detained in the same class for consecutive two or more than two years.

Table – 13
Darjeeling District : Sector-wise Distribution of Respondents by Occupation & Religion (2007-08)

Occupation	Religious Group				Total	Percent
	Buddhist	Christian	Hindu	Muslim		
Domestic (Housewife)	88	66	157	181	492	82.00
Primary sector	--	3	--	--	3	0.50
Secondary Sector	2	9	10	2	23	3.83
Tertiary Sector	10	22	33	17	82	13.67
Total (percent)	100 (16.67%)	100 (16.67%)	200 (33.33%)	200 (33.33%)	600 (100.00%)	(100.00)

Source: Computed from data collected in the field.

(B) FERTILITY AND OCCUPATION

It is suggested that the nature of occupation influences fertility. If prospecting mother is employed then there is lesser likelihood that she will afford to have many children. Moreover, the government has framed different policies and provisions that are ante-natal e.g., four months' maternity leave is applicable to employed women in case of first two babies only. Bringing up of more children for a working mother is therefore, quite difficult. The over all expenditure involved in bringing up of children, particularly for their education and health care etc. will also be a consideration while deciding on the number of children desired. Therefore, occupation has been taken as one of the controlling factors of fertility in the present study.

In this study the occupation of the respondents has been classified in to four classes namely, a) Domestic work (housewife), b) Primary sector occupation, c) Secondary

sector occupation and d) Tertiary sector occupation. The husband's occupation has been classified into three groups namely a) Primary sector occupation, b) Secondary sector occupation and c) Tertiary sector occupation. In order to identify an activity for a particular class, the criteria of Census of India have been followed. The domestic work of women is however an extra class which has been introduced in the present study (Table 13).

From the data collected in the field the following broad observations may be made regarding this aspect of fertility:

1. There is no definite trend of relationship between fertility and sector of economic activity in which the respondents are engaged;
2. Working females have relatively less number of children as compared to the housewives but the difference is not significant;
3. There is no significant difference in fertility among respondents across religious groups employed in the same sector of occupation;
4. Even among the employed respondents, only a few are gainfully employed and therefore, nothing remarkable is observed on fertility behaviour.

(C) FERTILITY AND INCOME

It will be pertinent to examine the impact of income of the spouse on the fertility behaviour. In this study, the estimation of income has been done on the basis of information provided by the respondents and the material evidence observed by the author during the survey. While taking the data on income, total income of the household has been calculated taking all sources into consideration. Care has been taken to collect accurate data on income as far as possible. However, a certain degree of inaccuracy in estimation can not be ruled out.

Per capita income is calculated taking the total income of all the members of the household divided by the total number of members in the household including earning as well as dependent members. On an average, the per capita income of the families is Rs. 1776.50. It is found to be the highest among the Buddhists (Rs. 3077.00) and the lowest among the Christians (Rs. 1200.00). In comparison the per capita income of the Muslim and Hindu households is found to be marginally different with Rs. 1413.00 and Rs. 1416.00 respectively (Table 14). It is interesting to note that the average figure for savings does not exceed even one thousand rupee mark (Rs. 738.75). It is the lowest among the Muslims (Rs. 482.00) and the highest among the Buddhists (Rs. 1374.00).

The distribution of number of respondents by income category (Table 15) shows that nearly half (46.34 percent) of the respondents have a per capita monthly income below Rs. 1000.00. Nearly 1/4th (27.50 percent) have per capita monthly income varying between Rs. 1000.00 and Rs. 2000.00 and another 1/4th has per capita monthly income of Rs. 2000.00 and above. It is clear from the data that the respondents are at their subsistence level of living. The reason could be attributed to the low level of savings, the average per capita savings being only Rs. 738.75. The highest monthly per capita savings is among the Buddhists (Rs. 1374.00) followed by Christians (Rs. 586.00), Hindus (Rs. 513.00) and Muslims (Rs. 482.00). It is important to note that it is again the Muslims who have the lowest per capita income and are in the lowest rung of the ladder in terms of savings.

A comparison of per capita income with fertility rates shows that there is a strong negative relationship between the two. With increasing income there is a tendency of decline in fertility rates. Table 14 reveals that communities with higher income have low fertility and *vice-versa*. The lowest level of TFR of 2.44 is found among the Buddhists who have the highest per capita monthly income of Rs. 3077.00. In comparison the lowest per capita monthly income of the Christians i.e. Rs. 1200.00 and the community has the highest TFR of 4.98. Hindus and Muslims are in the same rank in terms of income and fertility rates.

Table – 14
Darjeeling District:Fertility and Per Capita Monthly Income & Savings by Religion (2007-08)

Religious group	Fertility Rates		Per capita monthly income and savings (Rs.)	
	TFR	CBR	Income (Rs.)	Savings (Rs.)
Buddhist	2.44	26.25	3077.00	1374.00
Christian	4.89	47.72	1200.00	586.00
Hindu	2.98	33.26	1416.00	513.00
Muslim	3.99	51.02	1413.00	482.00
Average/ Over all	3.57	39.56	1776.50	738.75

Source: Computed from data collected in the field.

Table – 15
Darjeeling District : Distribution of Respondents by Number of Births and Monthly Per capita Income (2007-08)

Income group (Rs)	Number of children						Total	Percent
	0	1	2	3	4	5 and above		
Up to 500	2	5	34	33	13	25	112	18.67
500-1000	5	33	57	37	21	13	166	27.67
1000-2000	13	29	66	33	13	11	165	27.50
2000-5000	19	47	36	15	9	2	128	21.33
Above 5000	8	3	14	1	3	--	29	4.83
Total (percent)	**47** (7.83%)	**117** (19.50%)	**207** (34.50%)	**119** (19.83%)	**59** (9.83%)	**51** (8.50%)	**600** (100.00%)	**100.00**

Source: Computed from data collected in the field.

In order to find out the relationship of fertility with income, Pearson's Correlation Coefficient has been calculated separately for the four religious groups under consideration. The results show that there exists a negative relation between income and fertility. The correlation coefficients among the variables range from (-) 0.0495 to (-) 0.3236. It is interesting to note that the strongest negative relationship between the two variables exists among the Christians (-0.3236) and the weakest relationship is observed between the variables among the Muslims (-) 0.0495. The Hindus and Buddhists have correlation coefficients of -0.171 and -0.3036 respectively. This points to the fact that despite increasing income Muslims are prone to higher fertility rates. From the correlation between income and fertility, it can be said that the increase in income has a weaker impact on fertility among the Muslims. This may be because of the fact that even the meager amount of income that the Muslims are earning is spent for fulfilling the bare necessities of life such as 'food, shelter and clothing' and the higher needs of life such education, health care etc. are neglected. The income, expenditure and savings are found to be the lowest among the Muslims.

The distribution of respondents by monthly per capita income and the number of births represented in Table 15 shows that as high as 58.44 percent of the respondents giving birth to three or more than three children have a monthly per capita income of only up to Rs. 1000.00 where as only 18.10 percent of the respondents have monthly per capita income of Rs. 2000.00 and above. About 1/4th (23.46 percent) of the respondents having three or more than three children have a monthly per capita income between Rs. 1000.00 and Rs. 2000.00. This conforms to the fact that higher income groups exhibit lower fertility rates.

The number of births and income among the Buddhists shows an interesting trend which seems to be different from the general trend. Only 12 percent of the respondents belonging to Buddhist religion have given birth to three or more than three children. Of the total respondents belonging to the above category as many as 83.33 percent have a monthly per capita income of Rs. 1000.00 to Rs. 2000.00. Similarly, of the total respondents 50 percent have given birth to two children. Out of total 50 respondents in this category as many as 35 respondents have a monthly per capita income of Rs. 1000.00 to Rs. 5000.00. Similarly, nine respondents have monthly per capita income of Rs. 5000.00 and above.

The relation of fertility to income is found to be the strongest in the case of Christians. Out of 39 respondents having given birth to three and more than three children, as high as 25 have a per capita income below Rs. 1000.00. Further, only two percent of the respondents having a high per capita monthly income of Rs. 2000.00 and above have given birth to three or more than three children.

In case of Hindu respondents as high as 41 percent of the respondents have given birth to three or more than three children where as only 22.00 percent of the respondents had two children. Of the total 82 Hindu respondents in this group, 50 respondents i.e. 60.98 percent have a per capita income up to Rs. 1000.00. Thus, this trend among the Hindu respondents also shows a negative relationship between fertility and income. It is clear that as income goes up fertility declines among the Hindus.

The distribution of Muslim respondents by number of births and income shows that as high as 16.00 percent of the total respondents have given birth to five or more than five children. Of the total 96 respondents in the category of having 3 or more children, as high as 65 i.e. 67.71 percent have a per capita income up to Rs. 1000.00. In comparison only 15 out of 96 i.e. 15.63 percent respondents have a per capita income of Rs. 2000.00 and above. It is interesting to note that only 4.50 percent of the Muslim respondents with per capita income of Rs. 2000.00 and above have given birth to three or more than three children.

Broadly therefore (a) there exists a negative relationship between fertility (number of births) and income (per capita monthly income); (b) income has strongest negative relation with fertility among the Christians and weakest among the Muslims. The correlation coefficient calculated between fertility (number of births) and income (per capita monthly income) varies between -0.0495 and -0.3236.

(D) FERTILITY AND AGE AT MARRIAGE

Age at marriage in this study refers to 'age at first marriage'. While choosing this indicator it was expected that the age at marriage will have an influence on fertility. Since duration of conjugal life as well as duration of child bearing period also increase with increasing age at marriage these may result in increase in fertility. An early marriage means longer duration of both conjugal life and fertile period and hence there is a possibility of higher fertility.

Recording of correct age as well as date of marriage and thus estimation of age at marriage and subsequently duration of conjugal life were found to be rather difficult particularly for rural areas and for illiterate and uneducated respondents. Whenever there was an absence of documentary evidence,

Table – 16
Darjeeling District: Fertility and Age at Marriage by Religion (2007-08)

Religious group	Fertility Rates		Average age at marriage (years)
	TFR	CBR	
Buddhist	2.44	26.25	20.99
Christian	4.89	47.72	19.03
Hindu	2.98	33.26	16.94
Muslim	3.99	51.02	16.54
Average	**3.57**	**39.56**	**18.38**

Source: Computed from data collected in the field.

statement by person concerned, parents' statements as well as statement of the elderly neighbour etc. have been considered. Every precaution was taken to cross check and verify the age as well as age at marriage of the respondents. In the absence of any of the above estimation by the author thorough observation along with statement of the respondents was the final basis for recording age as well as age at marriage.

While planning and formulating the study one of the propositions was that the age at marriage will have negative impact on fertility. The data on fertility and average age at marriage (Table 16 and Fig. 6) shows that average age at marriage is the lowest among the Muslim respondents (16.54 years) and the highest among the Buddhists (20.99 years). The average age at marriage for all the religions is 18.38 years. It is inferred from the data that the lowest fertility i.e. TFR is found among the Buddhists and the highest fertility rate is found among the Muslims. It will be difficult to draw a simple conclusion in this regard. But when one examines the extent of CBR it is found that there is a strong relationship between fertility and age at marriage. The Buddhists have the highest age at marriage (20.99 years) and the lowest CBR (26.25) and the Muslims have the lowest age at marriage (16.54 years) with the highest CBR i.e. 51.02 among all the religious groups under consideration.

The distribution of respondents by age at marriage shows that as high as 50.00 percent of the respondents from all religious groups got married before the completion of 18 years of age i.e. the legal age of marriage. This finding is a matter of great concern. Only 27.33 percent of all the respondents got married at the age of 20 years and above and the remaining 22.67 percent between 18 to 20 years of age.

On an average 38.16 percent of all the respondents have given birth to three or more than three children. Out of the total as high as 53.33 percent of the respondents got married before the age of 18 years and gave birth to three or more than three children. Only 19.50 percent of the respondents who got married at the age of 20 years and above gave birth to three or more than three children, 34.50 percent gave birth to two children and the remaining 46.90 percent had one or no child till the day of survey.

Thus age at marriage is related to fertility and this is valid for all the respondents irrespective of their religious allegiance. In order to ascertain this relation and its extent across the religious groups, correlation coefficients were calculated taking the number

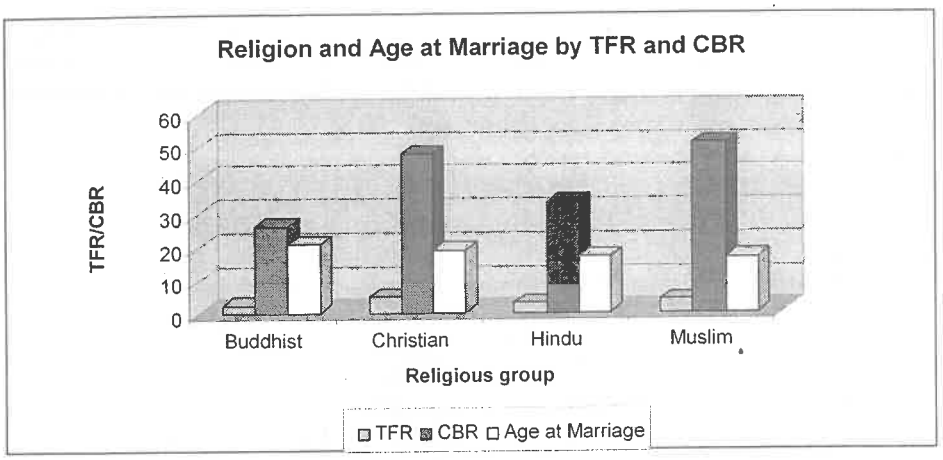

Fig. 6

of births including still births i.e. 'secondary fertility' and 'age at marriage' into consideration. The result shows that age at marriage is negatively related to fertility when it is calculated for all the religious groups, but the extent to which fertility varies with varying ages at marriage is not same for all the religious groups.

The strongest relationship between fertility (birth) and age at marriage is found among the Buddhists (correlation coefficient -0.2783) and the weakest among the Hindus (correlation coefficient -0.2370). The other religious groups i.e. Christians and Muslims have coefficient values of -0.2725 and -0.2529 respectively. When one examines correlation coefficient between fertility (number of pregnancies) and age at marriage it is found that the strongest negative relationship exists among the Buddhists (-0.3213) and the weakest among the Muslims (-0.2113) suggesting tht increase in age at marriage is a cause of relatively low fertility among the Buddhists, where as the phenomenon has no significant influence on Muslim fertility.

The distribution of respondents by age at marriage and religion shows that half of the Buddhist respondents have given birth to two children which is the highest among all the religious groups. At the same time, a low proportion of respondents (27.50 percent) among Muslims have given birth to two children. The other two groups i.e. Christians and Hindus have 30.00 percent and 31.50 percent of the respondents giving birth to two children each respectively.

There is a larger variation in the proportion of respondents giving birth to three or more children among different religious groups. The Muslims lead the list with 44.16 percent of the respondents and the Buddhists hold the bottom position with only 12.00 percent of the respondents giving birth to three or more than three children. The Christians and Hindus are observed to have maintained moderate level with respect to births. An analysis of data on age at marriage and number of births reveals that the highest proportion of Christian respondents (19.00 percent) married at an age of 18 years and above have given birth to three or more than three children. This value for the other three religious groups is 10.00 percent each.

Thus, broadly there exists a negative relationship between fertility and age at marriage. This relationship also holds true in case of both the rate of pregnancies and births. The relationship between fertility and age at marriage is negative for all the religious groups but the magnitude differs across the religious groups. The strongest relationship

between the variables is found among the Buddhists and the weakest among the Hindus.

Summary and Conclusions

The CBR and the TFR for all the religious groups taken together are 40.96 and 3.58 respectively. However, the religious groups have different fertility rates. The data on number of pregnancies, number of births and also fertility in general show that on an average, maximum number pregnancies have occurred among the Muslims (3.03) and minimum among the Buddhists (1.67). The maximum number of children ever born is among the Muslims (2.62) and the lowest (1.57) among the Buddhists. It is seen that on an average maximum number of surviving children is among the Muslims (2.62) and minimum among the Buddhists (1.57). The study reveals that the CBR is the highest among Christians (51.02) and the lowest (26.25) among the Buddhists. The highest TFR is found among Christians (4.89) and the Buddhists have the lowest TFR (2.44). The percentage of respondents giving birth up to two children is the maximum among the Buddhists (88) and minimum among the Muslims (51). However, a maximum percentage of Muslims (48) has given birth to more than two babies where as only 12 percent of Buddhist respondents given birth to more than two children.

Fertility and religion in the study have been discussed and analysed in terms of such variables as educational attainment, income level, occupation, and age at marriage. The results of correlation and regression analysis of fertility, in the light of the above variables suggest that educational attainment helps in reducing fertility but the extent of influence varies from one religious community to the other as their socio-economic conditions vary. It is observed that the impact of educational attainment of the respondents is much more effective as compared to the educational attainment of the husbands and the parents. There is no definite trend of relationship between fertility and different sectors of economic activities in which the respondents are engaged. Working females have relatively lesser number of children as compared to the housewives but the difference is not significant. There is no significant difference in fertility across religious groups in the same sector of occupation. Even among the employed respondents only a few are gainfully employed and therefore no significant impact of occupation on fertility is observed. Very low income generated from employment has not contributed significantly in enhancing the social status of the respondents.

There exists a negative relationship between fertility (number of births) and income (per capita monthly income). Income generated has been invested for education, health and nutrition which has probably influenced fertility behaviour of the respondents. The per capita monthly income has the strongest negative relation with fertility among the Christians and the weakest among the Muslims. The correlation coefficient calculated between number of births and per capita monthly income varies between -0.0495 and -0.3236 for different communities. There exists a negative relationship between fertility and age at marriage. The above relationship also holds good in case of pregnancy and births. Enhanced age at marriage means a number of fecund females are out of child bearing system, thus it influences fertility negatively. The relation between fertility and age at marriage is negative for all the religious groups but the magnitude differs across the religious groups. The strongest relationship between the above variables is found among the Buddhists and the weakest among the Hindus.

The analysis of fertility *vis-a-vis* its determinants reveals that there exist considerable differentials in fertility among the religious groups in the study area. Muslims have the highest CBRfollowed by Christians, Hindus and Buddhists. The TFR is the highest among the Christians, followed by Muslims, Hindus and Buddhists. The differentials are primarily due to differences in socio-economic and educational status of these communities. With increasing education, income and occupational shifts from primary to secondary and tertiary sectors, fertility is found to be

decreasing with the lone exception of increasing fertility with income among the Muslims. It seems that with increasing income, social consciousness has not improved to the desired level among the Muslims. The reason for such a phenomenon requires a more intensive and separate probe.

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SPATIAL PATTERNS OF STRUCTURE OF IN-MIGRANT WORKERS ACCORDING TO INDUSTRIAL AND OCCUPATIONAL CATEGORIES IN PUNJAB (2001)

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Abstract

Migration is one of the three basic determinants of population change. It refers to movement of people from one administrative unit to another. One of the important reasons of male migration is employment or economic activity. An attempt has been made to study the occupational structure of in-migrants to Punjab from other States and Union Territories of India in terms of industrial categories and occupational divisions. The analysis is based on the 2001 D-8 & 9 Migration Tables of Punjab released by the Census of India. The study reveals that in addition to agriculture the migrants were engaged in other categories also including urban based activities.

Introduction

The number of bread winners and their proportion to total population, their educational attainments, the regularity of their employment and the amount they earn are some of the basic questions for understanding the economic and social well-being of a population. The occupational composition of the bread winners and their age and sex structure provide further insight into the life of the population. There is a direct reciprocal relationship between demographic and economic forces. The size of the labour force and its age composition are conditioned in a large part by demographic trends during the preceding several decades (Bogue, 1969, p. 213). The size of work force in a population at a given point of time depends upon a variety of demographic, social and economic factors (Chandna, 2006, p.321).

A major proportion of the migrant labour force working in the industrial and agriculture sectors of Punjab hail from Uttar Pradesh, Bihar and Rajasthan. They are attracted to Punjab because of better employment opportunities and higher wages as compared to the states of their origin. The migrants are not only employed in agriculture and industrial sectors, but also in other occupations such as building and road construction, brick making and rickshaw pulling, etc. Most of these migrants are males. It needs special mention that a large number of these migrants are permanent settlers in Punjab residing in urban as well as rural settlements. Those who migrate seasonally and continue to shift their residence and remain in circulation are not recorded in the census data. Therefore, this segment of migrants remains unrecorded.

Avasthi (1997, pp. 1-2) estimated that out of the 14.33 lakh agricultural labour force about 2.5 lakh are migrant workers; 84,000 out of one lakh workers engaged in brick kilns are migrant workers; and in the

construction sector out of 1.56 lakh workers nearly 1.10 lakh are migrants. Employment of inter-state migrants in the industrial sector too is substantial. Such migrants are estimated to number about six to seven lakh. This in-migration has posed important issues not only for the socio-economic and political environment of the state, but also for settlement patterns, wage rates, single unit migration and above all the newly evolved forms of exploitation of in-migrants to Punjab from other backward states (Chand, 1998, p.3). Thus, migrant labour plays a major role in the economic development of a state.

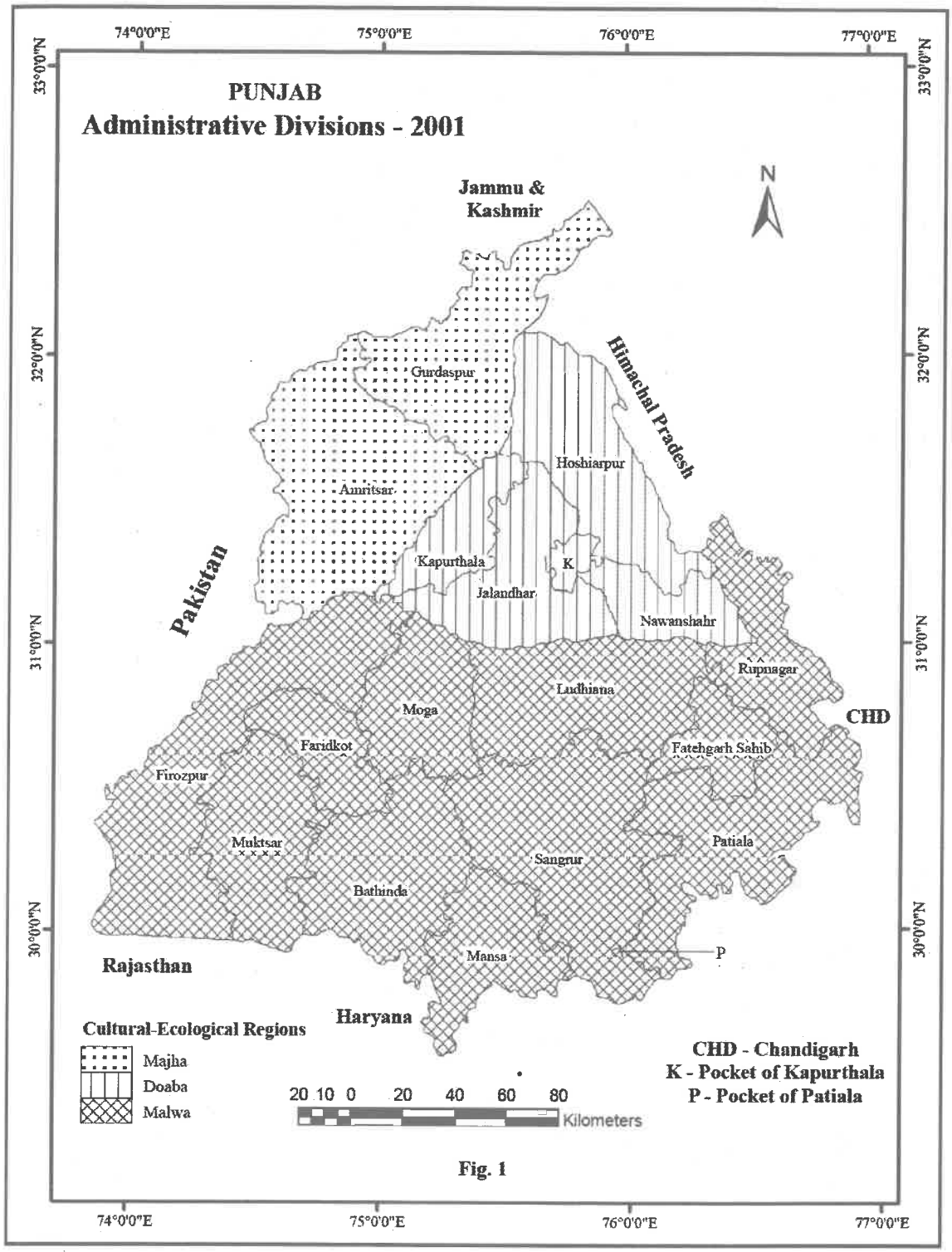
An understanding of the occupational structure of a population's work force is basic not only for knowing its socio-economic life but also for learning its demography. The two aspects are closely inter-related. In 2001 the migrant workers were classified in to seventeen categories which were grouped into twelve categories, viz., from A to Q. Category A comprised of Agriculture, Hunting and Forestry. Agriculture had further two subdivisions which included Cultivators and Agricultural Labourers. Category B included Fishing; C- Mining and Quarrying; D- Manufacturing and Repairs which had two sub-groups i.e., Household Industry and Other than Household Industry; Category E included Electricity, Gas and Water Supply; F- Construction; G- Wholesale and Retail Trade; H- Hotels and Restaurants; I- Transport, Storage and Communications; J- Financial Intermediation; K- Real Estate, Renting and Business Activities; L- Public Administration and Defence and Compulsory Social Security; M- Education; N- Health and Social Work; O- Other Community, Social and Personal Service Activities; P- Private Households with Employed Persons; and Q- Extra-Territorial Organisations and Bodies.

Objective and Methodology

This paper focuses on the occupational structure of in-migrant workers to Punjab. Census data on Industrial Categories (Table D-8) and Occupational Divisions (Table D-9) for 2001 for Punjab have been used to identify the occupational structure of in-migrant workers to the state from other states and union territories of India. District has been taken as the spatial unit for analysis. The data have been tabulated, represented and analysed through choropleth maps. Reference to earlier Censuses and studies already published on this theme has also been made for understanding the patterns of occupational structure.

Study Area

The state of Punjab is one of the most prosperous agricultural states of India. It is located in the north-western part of the country and forms the western component of the Great Northern Plain or the Satluj-Ganga Plain of India. The study area lies within the latitudinal extension of 29° 30′ north to 32° 32′ north and the longitudinal extension of 73° 55′ east to 76° 50′ east. It is divided into three cultural-ecological regions of *Majha*, *Doaba* and *Malwa* (Fig. 1). According to 2001 census, nearly, 70 per cent of its total population lived in 12278 inhabited villages of seventeen districts. Almost 84.18 per cent of its total geographical area is under plough. Agricultural workers constitute about 39 per cent of the total workers in the state. Punjab's industrial structure is dominated by small scale and unregistered tiny units. In 2008 Punjab had 17349 registered factories and 593462 workers, but the number of small scale industries was a staggering 167722 and the number of workers in these was 954769. The industrial sector in Punjab contributed 22.74 per cent of the total Gross Domestic Product in 2008 (Punjab Statistical Abstract, 2009). Migrants have been coming to Punjab ever since opportunities in agriculture were created by the state's agricultural leap forward under the Green Revolution which also resulted in a higher general prosperity and increased household income. The new agricultural development created additional demand for labour which was met by states across northern and central India (Government of Punjab, 2004).


PUNJAB
Administrative Divisions - 2001
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Fatehgarh Sahib
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Muktsar
Sangrur
Patiala
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Mansa
P
Cultural-Ecological Regions
Majha
Doaba
Malwa
20 10 0 20 40 60 80
Kilometers
CHD - Chandigarh
K - Pocket of Kapurthala
P - Pocket of Patiala

Fig. 1

Table - 1
Punjab: Distribution of Workers by Residence (2001)

Workers		Total (per cent)	Rural (per cent)	Urban (per cent)
Migrant	Persons	48.24	49.38	47.55
	Males	75.27	74.31	75.64
	Females	23.94	35.75	13.71
Total Population	Persons	37.47	39.51	33.49
	Males	53.60	53.88	53.06
	Females	19.05	23.37	10.44
Non-migrant	Persons	36.64	39.09	31.36
	Males	52.13	53.31	49.60
	Females	18.62	22.63	9.95

Source: Computed from:-
(i). Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD.
(ii). Census of India (2001): PCA, Punjab, data available on CD.

Table – 2
Punjab: Proportion of Migrant Workers by Industrial Categories (1971)

Industrial Categories	Percentage of migrant workers	
	Males	Females
I	6.23	0.13
II	4.79	0.24
III	1.10	0.03
IV	0.09	.....
V (a)	1.58	0.17
V (b)	19.33	0.94
VI	2.93	0.10
VII	10.30	0.14
VIII	5.41	0.05
IX	16.47	1.53

Source: Census of India (1971): Statement No. 6, p. 5 Migration Tables, Part II-D, Series 17, Punjab.
Note: I-Cultivators, II-Agricultural Labourers, III-Livestock, Forestry, Fishing, Hunting, Plantations, Orchards and allied activities, IV-Mining and Quarrying, V (a)-Manufacturing, Processing, Servicing and Repairs in household industry, V (b)- Manufacturing, Processing, Servicing and Repairs in other than household industry, VI-Construction, VII-Trade and Commerce, VIII-Transport, storage and Communications, IX-Other Services.

Table – 3
Punjab: Proportion of Migrant & Non-migrant Workers by Industrial Categories (2001)

		Percentage of migrant workers			Percentage of non-migrant workers		
Category		Persons	Males	Females	Persons	Males	Females
Cultivators	T	5.14	2.16	13.57	24.41	32.45	2.84
	R	12.54	6.87	18.98	27.61	38.32	2.99
	U	0.48	0.35	1.35	13.99	16.42	2.00
Agricultural Labourers	T	10.07	7.07	18.54	16.96	21.90	3.71
	R	22.21	19.53	25.26	16.73	22.45	3.59
	U	2.40	2.25	3.38	17.71	20.41	4.41
Household Industry Workers	T	3.35	2.41	5.99	3.69	3.48	4.24
	R	3.28	1.94	4.80	2.58	2.17	3.53
	U	3.39	2.59	8.67	7.28	7.06	8.38
Other Workers	T	81.44	88.36	61.90	54.95	42.17	89.21
	R	61.97	71.66	50.95	53.08	37.06	89.90
	U	93.73	94.81	86.61	61.02	56.11	85.22

Source: Computed from:(i) Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD, (ii) Census of India (2001): PCA, Punjab, data available on CD.

Results and Discussion

As per 2001 census, 48.24 per cent of the migrants were workers as compared to 36.64 per cent among the non-migrant population. The relatively low percentage of workers in the migrant population is largely attributable to lesser participation of females in the work force (Table 1). The reason for their lower participation in work force is that a very small proportion of females migrate for economic reasons.

The difference between the work participation rates of male migrants and non-migrants is very large. The higher work participation rate among male migrants is understandable because they move to another place in search of employment and they must work to survive in the new environment. An overwhelming majority of the migrant workers found employment in agriculture in rural areas and unorganized sector in urban areas which could engage females as well as children, without any educational or literacy requirements. More migrants were enumerated as workers in the rural as well as urban areas as compared to non-migrants. The proportion of male migrants enumerated as workers is almost 20 per cent more in rural as well as urban areas as compared to male non-migrants. Similarly the work participation rate of female migrants is almost 13 per cent more in rural areas and 4 per cent more in urban areas as compared to female non-migrants. The resource areas, from where they migrate, force the migrants to join the economic struggle at an early age. These compulsions also force their families to disregard any inhibition for joining outdoor activities which is characteristic of migrant population in any part of the world.

OVERVIEW

There appears to be a shift of male migrant workers as cultivators since their proportion declined from 6.23 per cent in 1971 (Table 2) to 2.16 per cent in 2001 and that of agricultural labourers increased from 4.79 per cent in 1971 to 7.07 per cent in 2001 (Table 3). At the same time in both categories there has been a significant increase in the participation of female migrant workers which

was just 0.13 and 0.24 per cent in 1971 which increased to 13.57 per cent and 18.54 per cent in 2001. The increase in female participation rates in agricultural labour category suggests that the migrants in 2001 came with their families and allowed their females to work as agricultural labour. Table 3 also suggests that the work participation rate of female agricultural labour in rural areas was more than the male migrants. There has been a considerable shift in the working pattern of migrant workers between 1971 and 2001. In 1971 female work participation rates in all the categories was negligible whereas in 2001 the agriculture sector had an overwhelming majority of females. One of the reasons for the higher work participation rates of females is the change in the census definition of work regarding females. At the same time a large proportion of male migrants was engaged in 'other workers' category rather than agriculture and household industries.

As per 2001 Census, 10.07 per cent of the migrant workers were agricultural labourers, and an additional 5.14 per cent were cultivators. Thus, a total of 15.21 per cent of migrant workers were engaged in agriculture. Household industry employed 3.35 per cent. The category of 'other workers' accounted for 81.44 per cent of migrant work force. It includes new workers seeking employment, workers reporting occupations unidentifiable or inadequately described and workers not reporting any occupations. In comparison, the corresponding breakup of the non-migrant work force is: cultivators 24.41 per cent, agricultural labourers 16.96 per cent, household industry 3.69 per cent and 'other workers' 54.95 per cent. It reveals a general imprint of the state's overall economic structure on the migrant work force, their initial association with agriculture notwithstanding. In other words, in addition to their earlier agricultural activities, most of the migrant workers were overwhelmingly enumerated in 'other services'.

MALE-FEMALE DIFFERENTIAL

An analysis of the data relating to occupational structure of the migrant work force for males and females reveal certain occupational activities having a marked male-female differential. The category of cultivators engaged 5.14 per cent of male workers in 2001. The corresponding figure for female workers was 13.57 per cent. On the other hand, agricultural labour employed 18.54 per cent of the female workers as against 10.07 per cent of male workers. In household industry also more females (5.99 per cent) were employed than males (3.35 per cent). In 'other activities' 81.44 per cent males and 61.90 per cent of females were enumerated. In relative terms, outdoor farm labour appears to be a favourable avenue of employment for the female migrant workers, especially in the rice and cotton growing areas. Rice transplantation, certain operations relating to rice harvesting and winnowing and cotton picking are especially suited to women workers (Mukerji and Mehta, 1975, p.107). These jobs require less physical strength but more of patience and meticulous working which the women are known to be capable of providing. The harder, hazardous and strenuous jobs, on the other hand, attract more male workers. Accordingly, the women folk are generally absorbed in agricultural labour, while the men take up more remunerative jobs in the non-agricultural sector (Mehta, 1967, p.54). In many of the 'other services' occupations some amount of education and technical skill is required and the migrant male workers seem to have a sizeable edge over their female counterparts. Thus, there was a wide variability in the suitability of various vocations for male and female workers among the migrants, as in other sections of the society. It may be noted that this differentiation was more in relative than in absolute terms. The migrant females often took up work as agricultural labour which was earlier performed by female scheduled caste workers in Punjab. Due to increase in educational attainments and reservation in services available to the scheduled castes, and a relatively free social environment, female members of this group find employment in a variety of activities in rural as well as urban areas.

Table - 4

Punjab: Proportion of In-migrant Workers in Industrial Categories by Sex and Residence according to Cultural-ecological Regions (2001)

	Person	Male	Female	Rural	Urban
			Punjab		
Total migrant workers	**843,842**	**623,412**	**220,430**	**326,484**	**517,358**
Cultivators	5.14	2.16	13.57	12.54	0.48
Agricultural Labourers	10.07	7.07	18.54	22.21	2.40
Household Industry	3.35	2.41	5.99	3.28	3.39
Other Workers	81.44	88.36	61.90	61.97	93.73
			Majha		
Total migrant workers	**73,418**	**55,985**	**17,433**	**25,648**	**47,770**
Cultivators	3.07	1.94	6.69	7.97	0.44
Agricultural Labourers	5.59	3.98	10.76	12.69	1.78
Household Industry	4.74	2.37	12.32	7.19	3.42
Other Workers	86.60	91.70	70.23	72.15	94.36
			Doaba		
Total migrant workers	**152,198**	**121,248**	**30,950**	**65,602**	**86,596**
Cultivators	4.73	2.77	12.41	10.49	0.36
Agricultural Labourers	13.24	12.62	15.67	26.69	3.05
Household Industry	2.57	1.88	5.27	2.43	2.67
Other Workers	79.47	82.74	66.65	60.39	93.92
			Malwa		
Total migrant workers	**618,226**	**446,179**	**172,047**	**235,234**	**382,992**
Cultivators	5.49	2.03	14.47	13.60	0.51
Agricultural Labourers	9.82	5.95	19.85	22.00	2.33
Household Industry	3.37	2.56	5.48	3.09	3.55
Other Workers	81.32	89.46	60.20	61.30	93.61

Source: Computed from Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD.

RURAL-URBAN DIFFERENTIAL

When viewed in the rural and urban perspective separately, the occupational structure of Punjab's in-migrant work force presents different scenarios because of contrasting socio-economic conditions characteristic of Punjab's rural and urban areas. In the rural areas, as much as 34.75 per cent of the migrant workers were engaged in agriculture (12.54 per cent as cultivators and 22.21 per cent as agricultural labourers) in 2001. Another 3.28 per cent were engaged in household industry and the remaining nearly 61.97 per cent were in 'other' economic activities (Table 3). In marked contrast to this

93.73 per cent of the migrant workers in urban areas were in 'other activities' while only 2.88 per cent were in agriculture (0.48 per cent as cultivators and 2.40 per cent as agricultural labourers). The remaining 3.39 per cent were in household industry. The intensive cultivation on the limited farmlands included in the municipal limits of towns and cities, producing vegetables and other special crops, demand considerable manual labour which is provided by the migrant workers.

The overwhelming emphasis on secondary and tertiary activities in the urban areas presents a qualitatively different picture of the occupational structure of migrant workers as compared to the countryside. The secondary and tertiary sectors in urban areas require some level of education and technical skills for employment. With a gradual increase in educational attainments, both male and female migrant workers, find placement in a variety of secondary and tertiary activities in towns and cities. The urban areas also provide ample opportunities for female migrant workers to take up domestic jobs. Thus, the occupational structure of the migrant work force characterized by their overwhelming preoccupation with agriculture in the rural areas stands in marked contrast to their predominant association with secondary and tertiary activities in the urban areas.

SPATIAL PATTERNS

The spatial pattern of migrant workers according to major occupational categories based on maps made from district level census data for 2001 is given below.

The distribution of in-migrant workers according to cultural-ecological regions of Punjab reveals that in each region the proportion of male in-migrant workers is almost three times of the female in-migrant workers (Table 4). In all the three regions more in-migrant workers were enumerated in urban areas than the rural areas, the highest proportion of 65 per cent was in *majha* region and the lowest in *doaba* region (56.90 per cent). The distribution of in-migrant workers is not uniform in all the three regions; *malwa* region has nearly three-fourths of all the in-migrant workers coming to the state either in rural or in urban areas. This is because, *malwa* region is one of the most industrially and agriculturally developed regions of the state. It has the state's only metropolitan city viz., Ludhiana which is the hub of various industrial activities like bicycle manufacturing, hosiery and sports goods industries. Mandi Gobindgarh town in this region has a number of steel rolling mills. Steel rolling and linked industries are so highly developed in this town that it is known as the Steel City of Western India (Kundu & Bhatia, 2002, p. 2). The size of land holdings is also very large in this region which is on an average more than 2 hectares (Gaurav, 2008, p.247). That is why this region has attracted such a large number of migrant workers. In comparison *majha* region had just 8.70 per cent of the total in-migrant workers of the state. The reason being that it has only two districts which are border districts sharing their boundaries with Pakistan resulting in a general neglect in their development activities. Also this region lacks substantial industrialisation. Earlier there had been a large number of woollen cloth manufacturing units in the border town of Amritsar, cast iron foundries in the adjoining city of Batala and pipe and conveyer belt factories in Dinanagar. But in 1980's due to the disturbed socio-political conditions majority of these industrial units shifted to Faridabad and Panipat in Haryana. This led to a smaller proportion of in-migrant workers coming to this region of the state. The *doaba* region has a long history of emigration particularly of males. At the same time its woollen cloth manufacturing industry at Phagwara and Rail Coach Factory at Kapurthala are a natural pull factor for migrants.

In these three regions the combined proportion of 'other workers' is more than 80 per cent of all the in-migrants. The proportion of male in-migrant workers enumerated in this category is almost 90 per cent in *majha* and *malwa* region and about 83 per cent in *doaba* region. The proportion of cultivators is less than 5 per cent in *majha* (3.07 per cent) and *doaba* (4.73 per cent) while it is just above 5

Table - 5
Punjab: Cultivators as per cent of Total In-migrant Workers (2001)

	Cultivators				
District	**Person**	**Male**	**Female**	**Rural**	**Urban**
Punjab	**5.14**	**2.16**	**13.57**	**12.54**	**0.48**
Gurdaspur	4.98	3.76	7.01	7.62	0.44
Amritsar	1.88	1.11	6.19	8.76	0.44
Kapurthala	2.01	1.59	4.85	5.03	0.39
Jalandhar	1.81	1.60	3.17	7.04	0.27
Hoshiarpur	9.89	4.91	21.12	15.01	0.51
Nawanshahr	4.85	4.62	5.43	6.04	0.92
Rupnagar	6.67	2.33	16.22	13.52	0.55
Fatehgarh Sahib	2.10	1.90	2.94	4.42	0.24
Ludhiana	0.68	0.56	1.74	2.75	0.26
Moga	3.67	2.61	6.21	6.39	0.67
Firozpur	14.57	7.10	21.91	21.58	0.82
Muktsar	9.64	5.63	13.15	13.58	0.94
Faridkot	4.18	3.12	6.35	10.25	1.01
Bathinda	9.82	3.14	17.90	20.35	0.62
Mansa	17.54	10.74	20.96	23.95	2.53
Sangrur	11.37	3.05	23.70	19.83	1.65
Patiala	7.20	3.45	12.62	13.55	0.68

Source: Computed from Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD.

per cent in *malwa* (5.49 per cent). The proportion of agricultural labourers is highest in *doaba* (13.24 per cent) and the lowest in *majha* (5.59 per cent). However more female migrant workers are enumerated as agricultural labourers in all the three regions of the state. Besides cultivator and agricultural labour category the least number of migrant workers are enumerated in household industry in all the three regions of the state.

CULTIVATORS

Cultivation is an important occupation for migrant workers because it depicts their social vertical mobility i.e. change of occupation from agricultural labourers to cultivators. It employs 5.14 per cent of the total migrant workers (Table 5). Cultivation is done by migrant workers on small rented pieces of land. In 2001, 2.16 per cent of the male and 13.57 per cent of the female in-migrant workers were enumerated as cultivators. It may be clarified that all workers in cultivation are not necessarily owner cultivators. As per 2001 Census a person has been considered as a cultivator if he or she was engaged as employer, single worker or family worker in cultivation of land owned or held from government or private persons or institutions for payment in money, kind or share of crop including supervision or direction of cultivation. In Mansa District more than 10 per cent of the total male in-migrants were engaged as cultivators. Majority of the female cultivators are found in *malwa* region. The districts which have higher proportion of female migrants as cultivators lie in the vicinity of neighbouring states of Haryana and Rajasthan. Majority of the

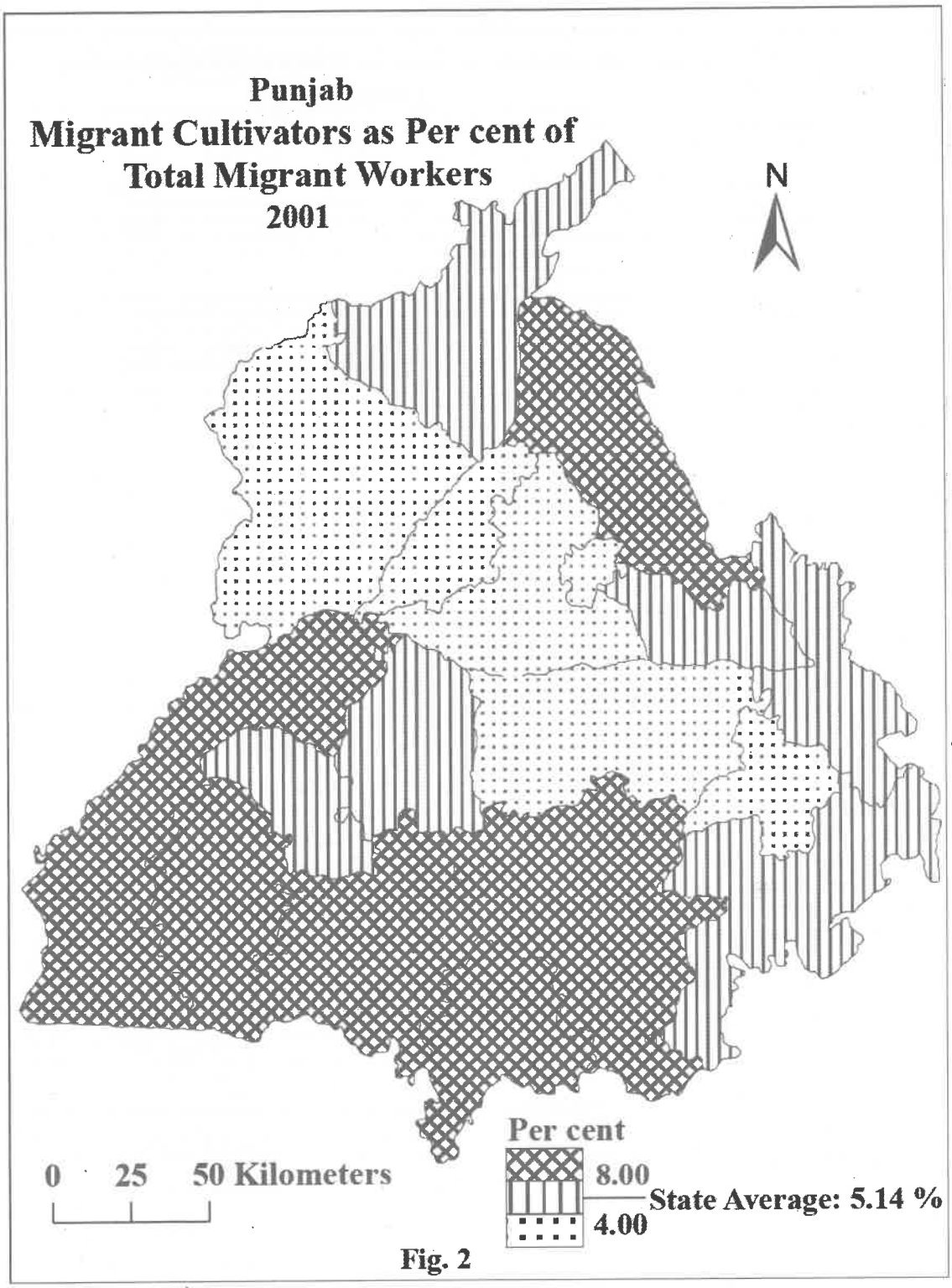
Punjab
Migrant Cultivators as Per cent of
Total Migrant Workers
2001
N
Per cent
8.00
4.00
State Average: 5.14 %
0 25 50 Kilometers

Fig. 2

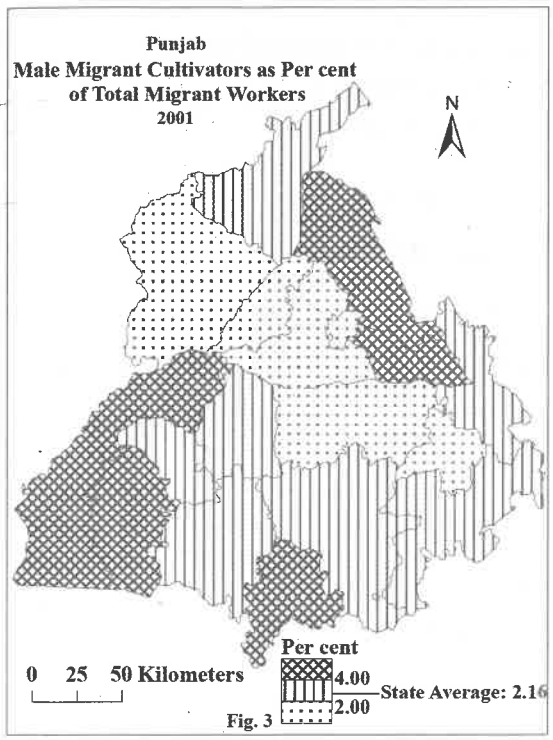

Fig. 3

Fig. 4

Fig. 5

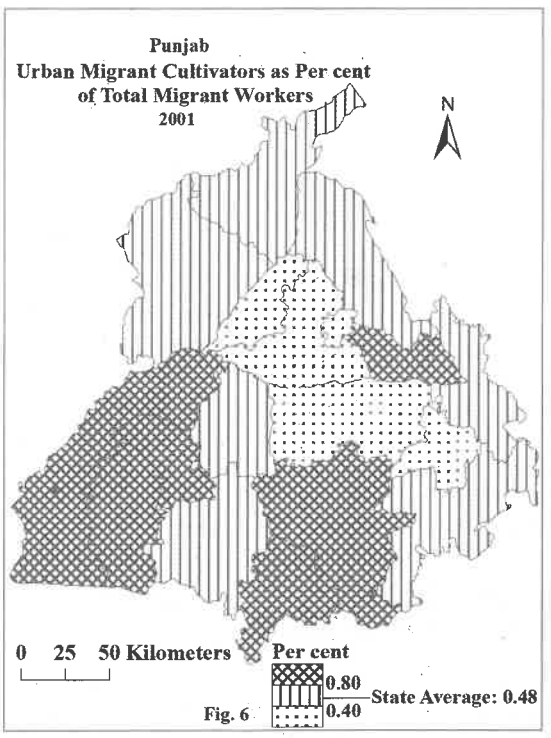

Fig. 6

Table - 6
Punjab: Agricultural Labourers as per cent of Total In-migrant Workers (2001)

	Agricultural Labourers				
District	**Person**	**Male**	**Female**	**Rural**	**Urban**
Punjab	**10.07**	**7.07**	**18.54**	**22.21**	**2.40**
Gurdaspur	8.63	6.10	12.83	12.18	2.53
Amritsar	3.70	3.01	7.55	13.83	1.57
Kapurthala	10.04	9.44	14.14	22.18	3.53
Jalandhar	9.42	9.30	10.17	31.40	2.94
Hoshiarpur	18.65	17.93	20.27	27.31	2.76
Nawanshahr	17.64	20.06	11.37	21.84	3.87
Rupnagar	5.15	5.54	4.30	9.61	1.16
Fatehgarh Sahib	8.94	9.41	6.93	16.73	2.70
Ludhiana	4.04	3.78	6.43	14.88	1.81
Moga	10.35	10.13	10.89	16.57	3.49
Firozpur	26.55	16.85	36.09	37.85	4.40
Muktsar	24.47	16.07	31.83	33.28	5.06
Faridkot	12.07	11.47	13.30	26.44	4.58
Bathinda	14.53	6.75	23.93	26.04	4.48
Mansa	23.81	12.67	29.41	32.01	4.59
Sangrur	12.42	7.56	19.61	19.71	4.03
Patiala	13.65	5.73	25.12	24.56	2.45

Source: Computed from Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD.

females in these districts had migrated due to marriage and are the registered owners of land. Since cultivation is a rural phenomenon a substantial proportion of migrant workers (12.54 per cent) in rural areas of the state are engaged in cultivation, in urban areas the corresponding figure is only 0.48 per cent. This small percentage of urban cultivators is due partly to the fact that some of the villages have been included in the territorial jurisdiction of expanding urban centres (Table 5 and Figs. 2 to 6).

Only those pieces of land which are economically unviable for cultivation by local farmers are given for cultivation to migrants. This is especially true of the *doaba* region, a traditional area of out-migration, where entire families have migrated to foreign countries leaving only old parents behind who rent it to the migrants either on *'theka'* or *'batai'* which means land tenancy or share cropping. Further, commercial tenancy is becoming a new feature of the agrarian economy of Punjab and even large farmers are taking small farms on rent for increasing their productivity.

The important districts where migrant workers are engaged in cultivation in significant proportion are Mansa (17.54 per cent), Firozpur (14.57 per cent), Sangrur (11.37 per cent), Hoshiarpur (9.89 per cent), Bathinda (9.82 per cent) and Muktsar (9.64 per cent). In these the size of land holdings is large with the exception of Hoshiarpur district which forms part of *doaba* region. The other districts have some amount of arid and semi-arid climate which is not suitable for cultivation

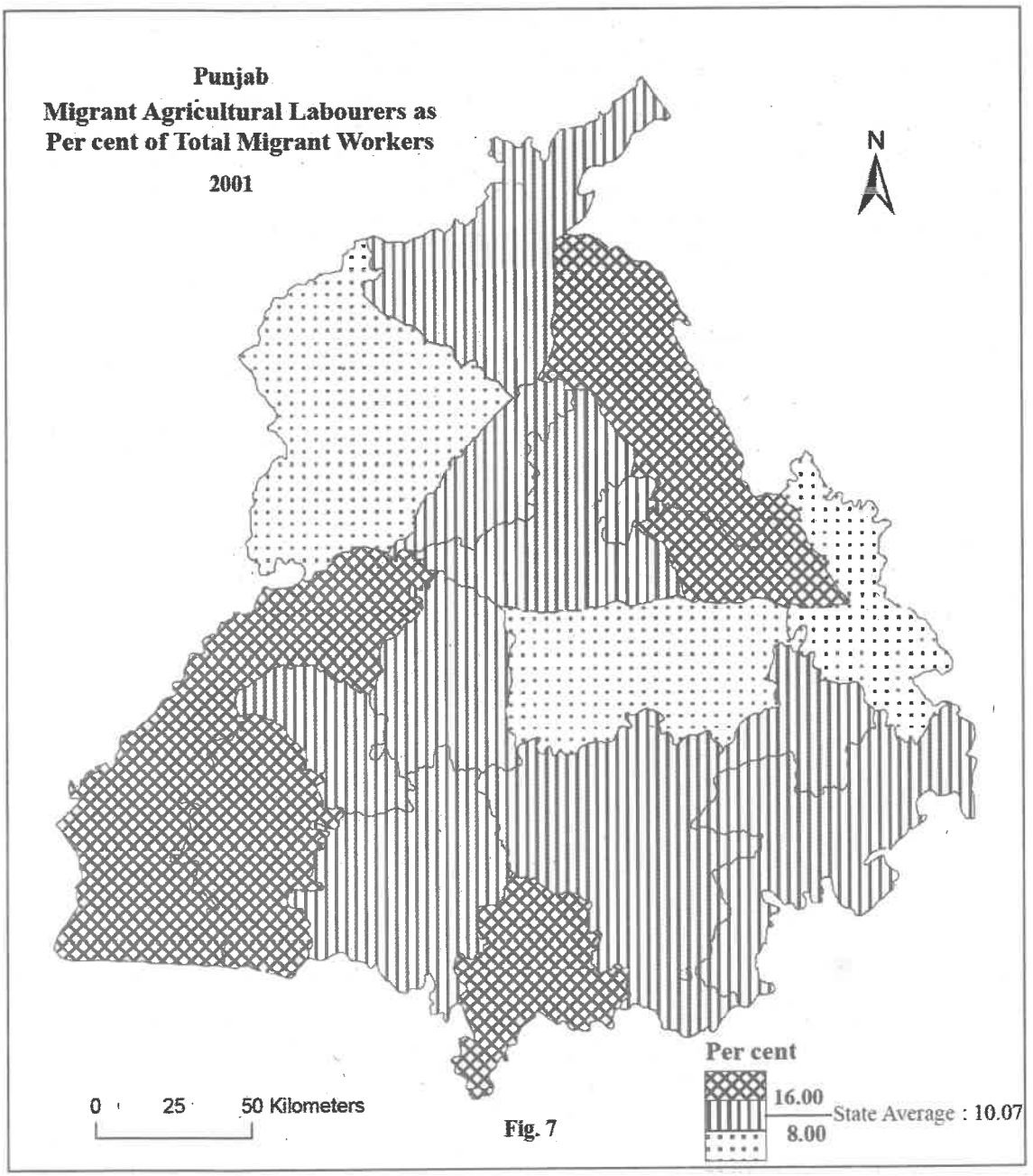

Fig. 7

and this is the land which is given on rent to the migrants. In these six districts the proportion of female cultivators also is very high. Many of the females are registered owners of land and had migrated from neighbouring states after marriage.

In other districts forming part of *doaba* region the land is fertile and not much land is given on rent for cultivation and farmers themselves engage in cultivation with hired agricultural labour. In Amritsar, Jalandhar and Ludhiana districts for example, the proportion

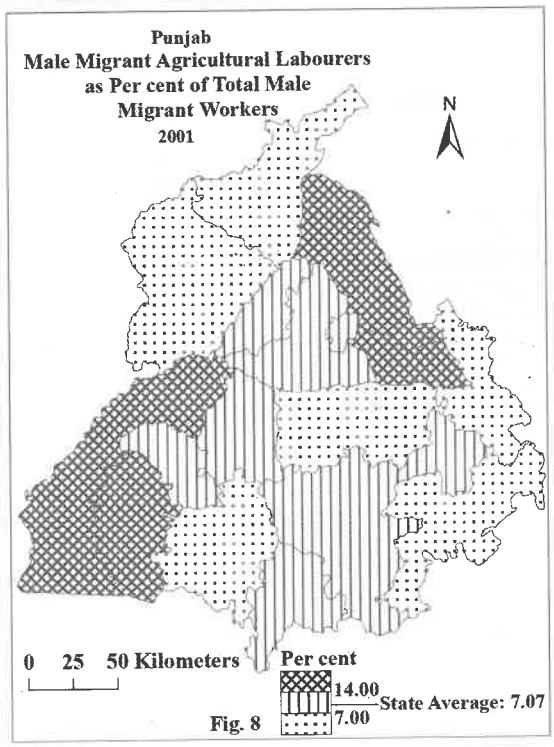

Fig. 8

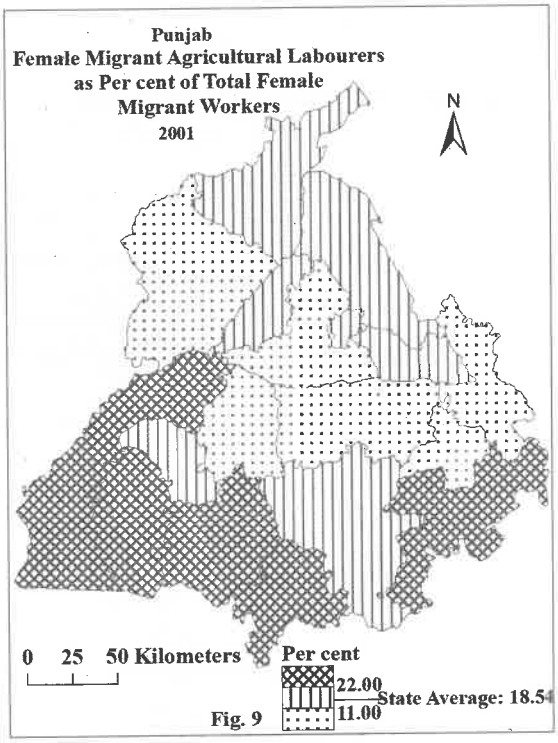

Fig. 9

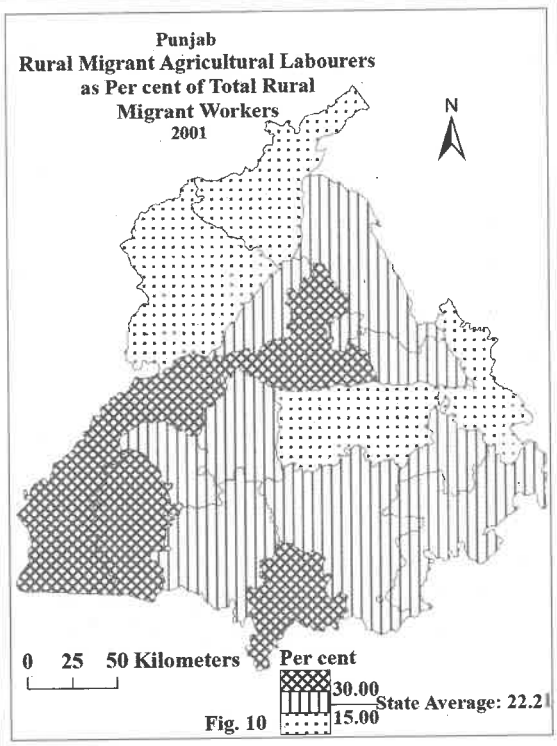

Fig. 10

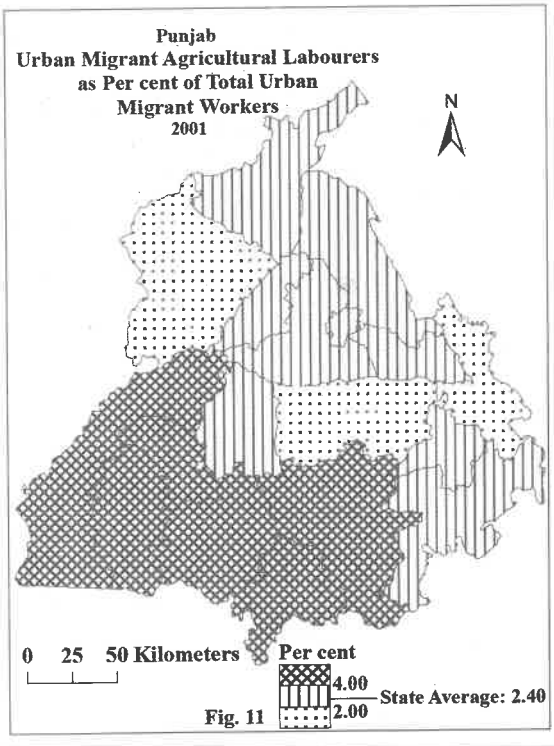

Fig. 11

of migrant workers as cultivators is quite low due to self cultivation by the farmers. In other districts also the proportion of migrant workers as cultivators is low due to the same reason.

AGRICULTURAL LABOURERS

Agricultural labour is not only the most important activity among the migrant workers from the point of view of employment, both in absolute and relative terms, but is also spatially the most widespread. The migrant agricultural labourers harvest the wheat crop, prepare the fields for cultivation of rice and transplant the paddy seedlings in the flooded fields.

Table 6 and Figs. 7 to 11 depict the spatial distribution of migrant workers engaged as farm labour. In as many as eleven districts out of 17, more than 10 per cent of migrant workers were engaged as agricultural labour. Among these, the proportion of female workers engaged as farm labourers to total female workers is distinctly higher than the corresponding figure for males in all districts of the state except three districts Nawanshahr, Rupnagar and Fatehgarh Sahib in which the proportion of male agricultural labourers is more than females. It indicates the suitability of agricultural labour to the female workers particularly. Also, the concentration of agricultural labourers is far more in rural areas than in urban areas because the rural economy

Table - 7

Punjab: Household Industry Workers as per cent of Total In-migrant Workers (2001)

	Workers in Household Industry				
District	**Person**	**Male**	**Female**	**Rural**	**Urban**
Punjab	**3.35**	**2.41**	**5.99**	**3.28**	**3.39**
Gurdaspur	6.87	3.00	13.29	8.74	3.65
Amritsar	3.41	2.09	10.83	3.69	3.35
Kapurthala	1.68	1.31	4.25	1.68	1.68
Jalandhar	3.16	2.24	8.93	2.78	3.27
Hoshiarpur	2.28	1.63	3.75	2.57	1.75
Nawanshahr	2.38	1.91	3.62	2.12	3.23
Rupnagar	2.06	1.55	3.19	2.37	1.79
Fatehgarh Sahib	1.16	0.87	2.44	1.18	1.15
Ludhiana	3.74	3.17	8.83	2.40	4.01
Moga	5.65	3.56	10.66	7.03	4.12
Firozpur	2.51	2.08	2.94	1.67	4.17
Muktsar	1.87	1.17	2.48	1.78	2.06
Faridkot	4.11	2.49	7.44	5.21	3.53
Bathinda	3.67	2.13	5.53	4.90	2.60
Mansa	6.97	5.85	7.54	4.27	13.31
Sangrur	2.70	1.91	3.87	2.29	3.17
Patiala	3.69	1.69	6.59	4.71	2.64

Source: Computed from Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD.

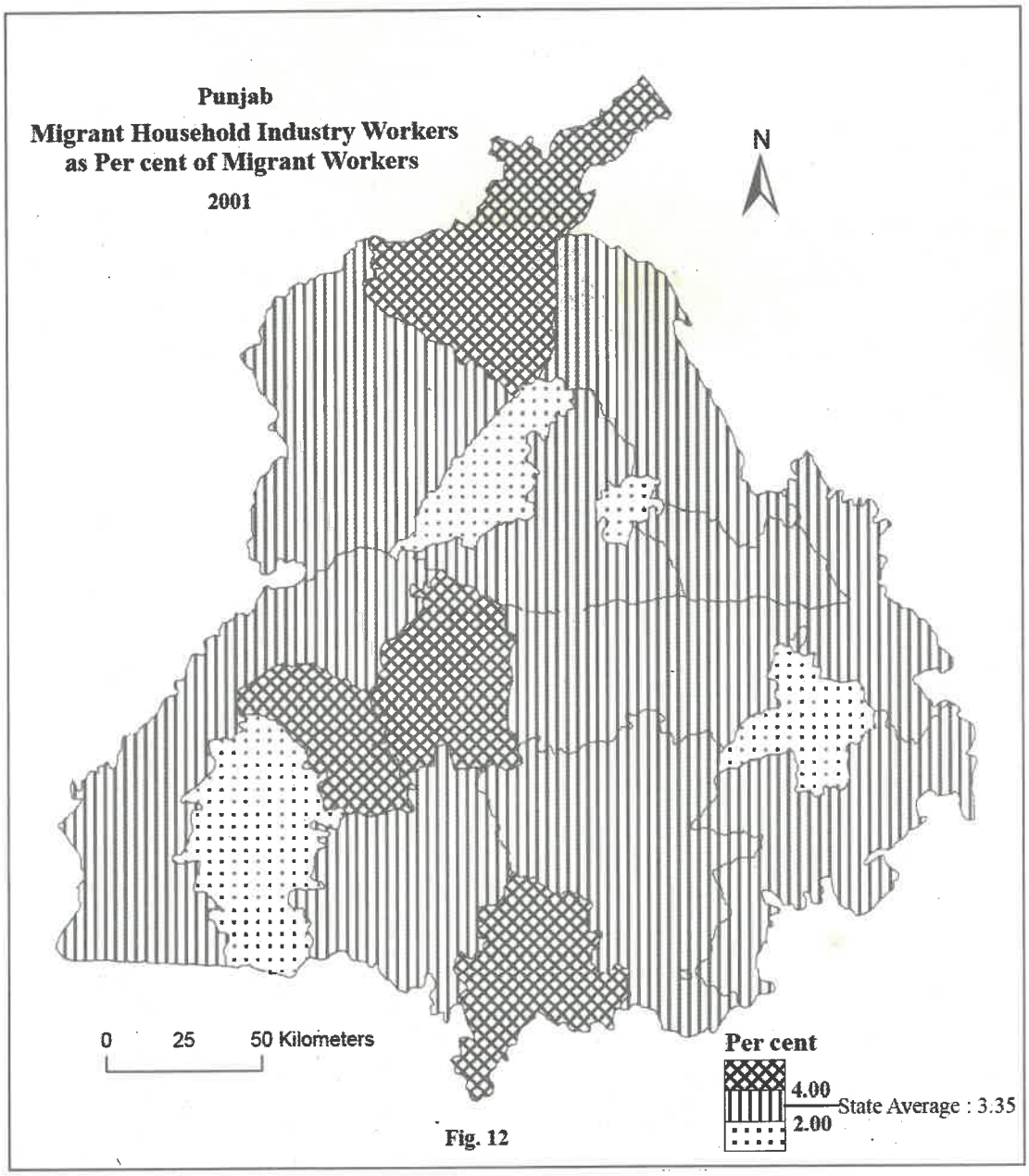

Fig. 12

is overwhelmingly based on agriculture. It may be noted that proportion of agricultural labourers is more in the southern districts comprising *malwa* region than in the northern districts of Punjab. It is because more cash crops are cultivated in southern Punjab than in northern Punjab. Further the size of landholdings i.e. above 2 hectares is also large in the *malwa* region of Punjab. Therefore, the distribution of agricultural labourers is positively related with size of land holdings. Larger the size of land holdings, larger the proportion of agricultural labourers and *vice-versa.*

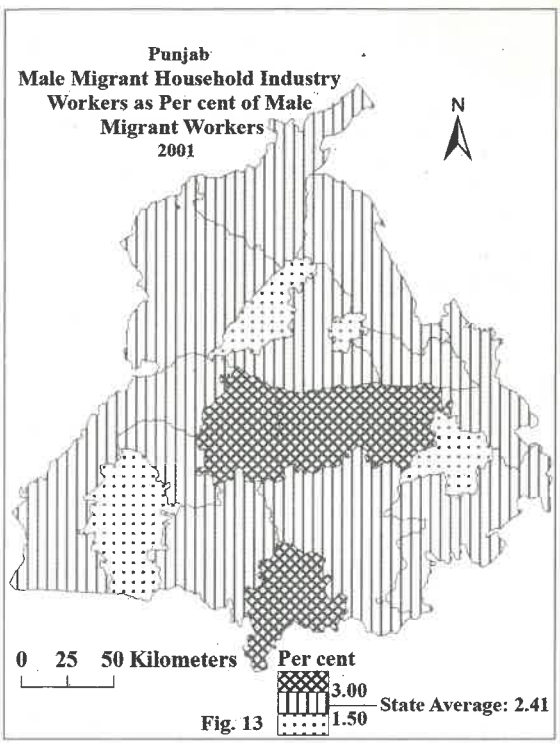

Fig. 13

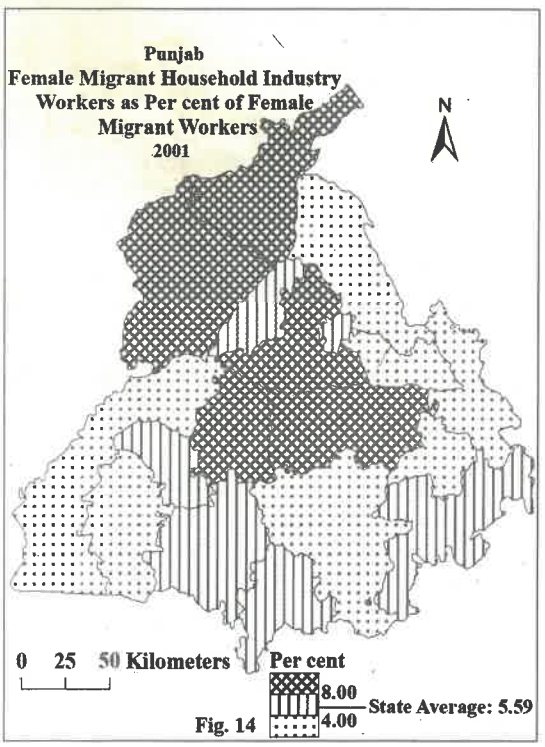

Fig. 14

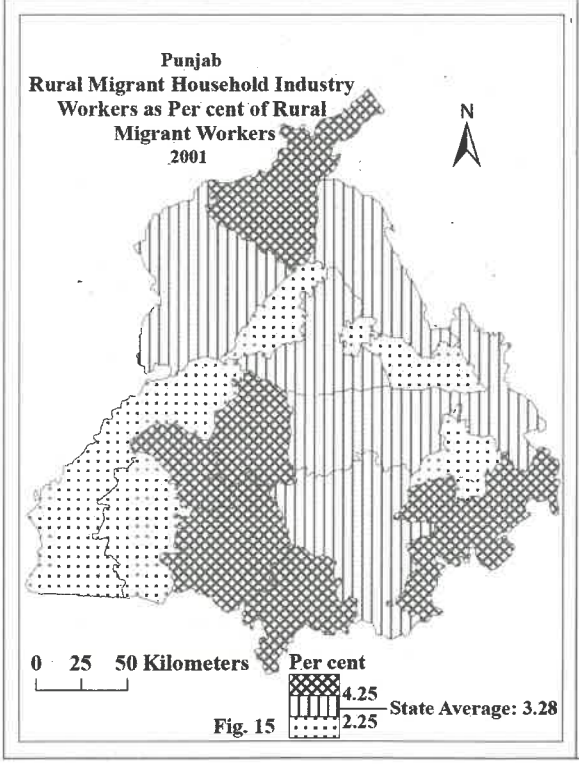

Fig. 15

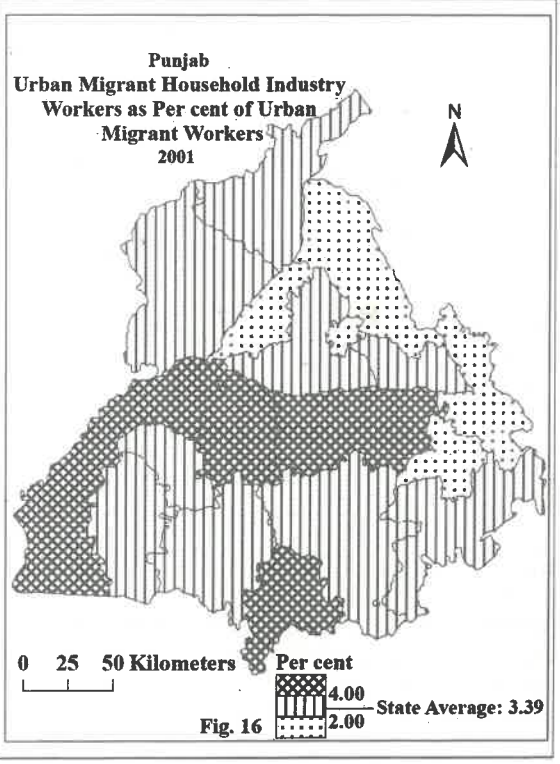

Fig. 16

HOUSEHOLD INDUSTRY

Household industry is one of the limited areas of economic activity for the migrant workers and is mostly part-time, seasonal and sporadic, and an avenue for supplementing income from whole-time vocations. As per 2001 Census only 3.35 per cent of migrant workers were employed in household industry with 2.41 per cent of male and 5.99 per cent of the female workers (Table 7). Though of small magnitude, the household industry forms an integral part of the migrant economy all over the state. In all the districts, the percentage of female migrant workers is higher than the male migrant household industry workers, but in three districts of Gurdaspur, Amritsar and Moga, the percentage of female migrant workers engaged in household industry is highest. The *majha* region has the highest proportion of female migrant workers engaged in household industry. Together the two districts of *majha* viz. Amritsar and Gurdaspur have nearly one-fourth of the total female household industry workers of the state. The predominance of females in this activity is because it can be carried out inside the house in addition to the domestic work. In relative terms, the migrant participation in household industry is slightly more in urban areas (3.39 per cent) than in rural areas (3.28 per cent) (Table 7 & Figs. 12 to 16). The activities related with females in this category are stitching of clothes, beauty parlor, washing, ironing and dry cleaning of clothes and sale of garments, etc.

The districts with a relatively high proportion of migrant workers engaged in household industry are Mansa (6.97 per cent),

Table - 8

Punjab: Other workers as per cent of Total In-Migrant workers (2001)

	Other Workers				
District	**Person**	**Male**	**Female**	**Rural**	**Urban**
Punjab	**81.44**	**88.36**	**61.90**	**61.97**	**93.73**
Gurdaspur	79.52	87.14	66.87	71.46	93.38
Amritsar	91.01	93.79	75.44	73.72	94.64
Kapurthala	86.27	87.66	76.76	71.11	94.40
Jalandhar	85.62	86.87	77.74	58.78	93.52
Hoshiarpur	69.18	75.54	54.86	55.12	94.98
Nawanshahr	75.13	73.41	79.58	69.99	91.98
Rupnagar	86.11	90.58	76.29	74.51	96.50
Fatehgarh Sahib	87.80	87.82	87.69	77.68	95.90
Ludhiana	91.54	92.49	83.00	79.97	93.92
Moga	80.33	83.70	72.24	70.01	91.72
Firozpur	56.36	73.98	39.06	38.90	90.61
Muktsar	64.02	77.14	52.54	51.36	91.95
Faridkot	79.65	82.91	72.91	58.11	90.87
Bathinda	71.97	87.98	52.63	48.71	92.31
Mansa	51.68	70.74	42.09	39.77	79.57
Sangrur	73.51	87.48	52.82	58.17	91.16
Patiala	75.47	89.13	55.67	57.18	94.23

Source: Computed from Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD.

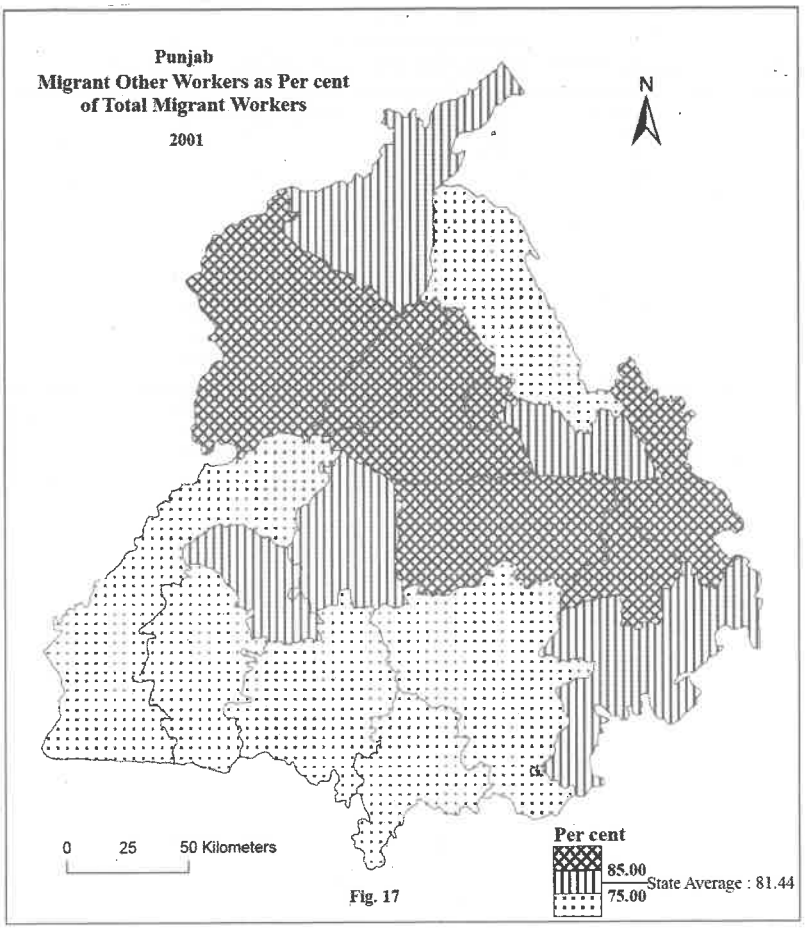

Fig. 17

Gurdaspur (6.87 per cent), Moga (5.65 per cent) and Faridkot (4.11 per cent). Broadly, the distribution of household industry workers coincides with conditions of socio-economic backwardness and sparse distribution of population. This is probably associated with two factors, first, prevailing poverty and backwardness of the areas giving rise in demand for household industry products among the local people and second, the general socio-economic backwardness leading to inadequacy of employment opportunities in other economic pursuits, resulting in migrant workers to continue with traditional household vocations. The lowest percentage of migrant workers engaged in household industry to total migrant workers is in Ludhiana district, which is dominated by large scale industrial activity.

Thus, there appears to be a direct association between the level of industrial development and distribution of migrant workers in household industry. Districts which are industrially highly developed have lower proportion of migrant workers engaged in household industry than those which are industrially less developed.

OTHER WORKERS

This category in the 2001 Census includes a large number of diverse vocations like mining, fishing, forestry, plantations, trade, commerce, transport, construction, manufacturing industry and miscellaneous services. All these activities put together provide work to 81.44 per cent of the migrant (88.36 per cent male and 61.90 per cent female)

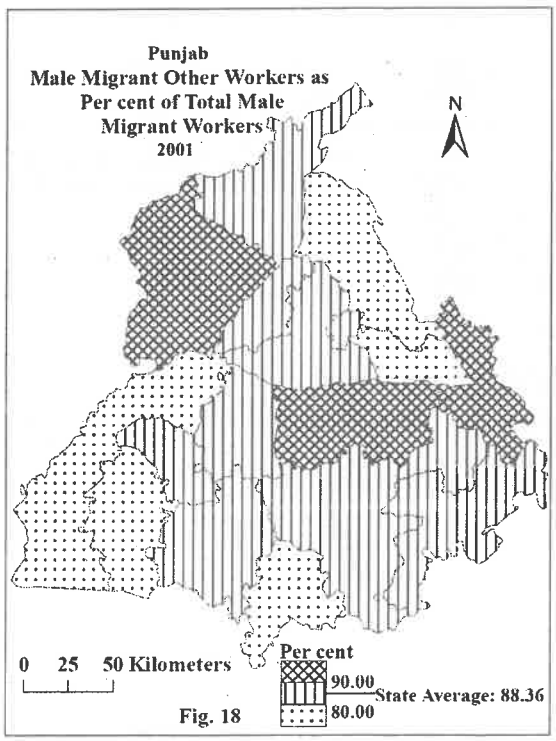

Fig. 18

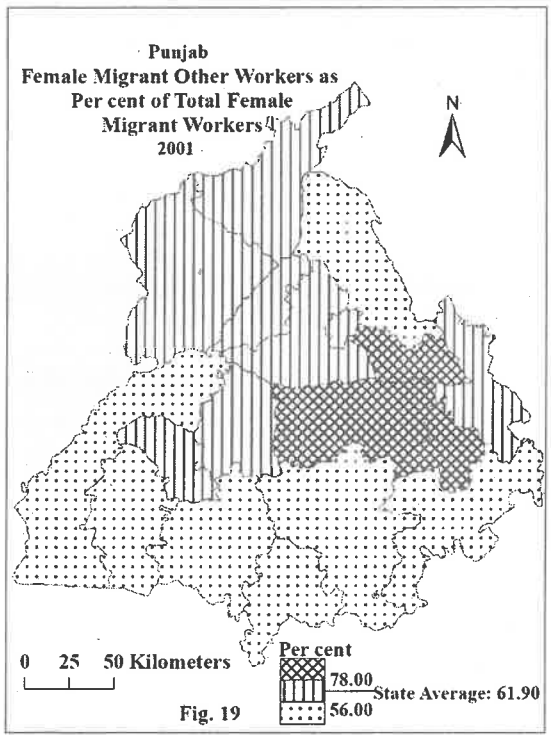

Fig. 19

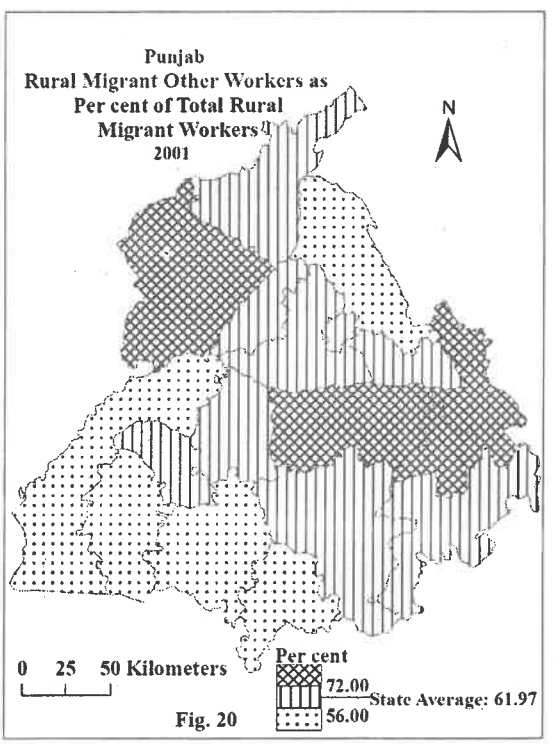

Fig. 20

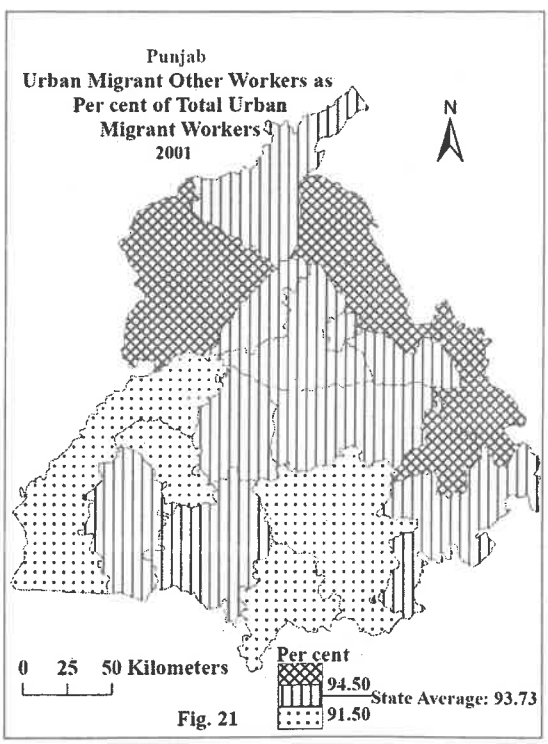

Fig. 21

workers (Table 8). Most of these activities are concentrated more in urban than in rural areas. As many as 93.73 per cent of the migrant workers in urban areas were included in this category as compared to 61.97 per cent of rural areas. The top ranking districts in 'other activities' (in rural and urban areas together) are Ludhiana (91.54 per cent), Amritsar (91.01 per cent), Fatehgarh Sahib (87.60 per cent) and Kapurthala (86.27 per cent).

Amritsar and Ludhiana cities are industrially well developed, whereas Gurdaspur district has some small scale industry located at Batala. Fatehgarh Sahib has been carved out of Ludhiana district and

Table - 9

Punjab: Proportion of In-migrant Workers in Industrial Categories of Other Workers (2001)

	Industrial Categories									
District	PLF FH	C	OTH HI	E	F	G	H	I	J and K	L to Q
	Persons									
Punjab	**7.53**	**0.39**	**37.84**	**1.82**	**9.00**	**12.51**	**1.16**	**4.59**	**4.48**	**20.68**
Gurdaspur	12.37	0.13	16.10	7.10	9.59	10.34	1.03	3.28	3.74	36.32
Amritsar	2.24	0.09	31.06	0.91	11.38	16.62	1.54	6.53	4.17	25.45
Kapurthala	4.04	0.07	46.29	0.85	11.06	10.05	0.63	4.97	3.50	18.54
Jalandhar	2.49	0.12	28.52	0.86	13.10	15.80	1.41	8.64	5.07	24.00
Hoshiarpur	12.33	0.16	38.42	3.50	11.23	11.10	0.66	2.87	3.19	16.54
Nawanshahr	17.55	0.02	25.32	0.97	14.43	12.22	1.05	3.79	2.13	22.52
Rupnagar	11.06	0.09	25.57	5.18	8.02	12.03	1.24	4.03	6.61	26.16
Fatehgarh Sahib	8.21	0.07	48.91	0.88	8.44	12.30	1.52	2.92	3.45	13.30
Ludhiana	1.85	0.69	53.31	0.44	7.57	11.88	1.13	4.28	4.57	14.28
Moga	4.47	0.02	34.88	1.63	7.62	16.83	1.61	5.70	3.49	23.75
Firozpur	20.86	2.32	20.27	1.73	8.14	12.69	1.32	4.73	3.01	24.92
Muktsar	19.08	0.10	34.12	1.29	7.11	11.00	1.19	2.01	5.97	18.12
Faridkot	8.81	0.00	18.08	0.77	14.53	15.40	1.47	4.09	3.90	32.96
Bathinda	15.42	0.10	16.90	5.86	9.88	14.79	1.18	5.85	4.61	25.41
Mansa	30.79	0.02	20.46	0.76	6.46	14.96	0.80	1.92	5.84	17.98
Sangrur	15.01	0.16	37.71	0.68	6.38	12.46	1.00	3.01	3.18	20.41
Patiala	10.35	0.25	30.73	2.11	9.01	10.25	1.11	4.36	4.26	27.57

Source: Computed from Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD.
Note:
PLFFH: Plantation, Livestock, Forestry, Fishing, Hunting and allied activities
C: Mining and Quarrying
OTHHI: Other than Household Industry which includes Manufacturing and Repairs
E: Electricity, Gas and Water Supply F: Construction G: Wholesale and Retail Trade
H: Hotels and Restaurants I: Transport, Storage and Communications
J: Financial Intermediation K: Real Estate, Renting and Business Activities
L: Public Administration and Defence, Compulsory Social Security
M: Education N: Health and Social Work
O: Other Community, Social and Personal Service Activities
P: Private Households with Employed Persons
Q: Extra-Territorial Organisations and Bodies.

has a higher proportion of 'other workers' which were engaged in the industrial units particularly in iron and steel industry of Mandi Gobindgarh. Kapurthala has rail coach factory and some industry particularly textile industry at Phagwara. All migrants are not directly employed in industries but the location of industry at one place creates a large number of jobs in ancillary units related to a particular industry. In comparison, the proportion of migrant workers in 'other services' is comparatively low in Mansa (51.68 per cent) and Firozpur (56.36 per cent) districts which have almost negligible industrial activity.

Irrespective of these overall inter-district variations, two-thirds to more than four-fifths of the migrant workers in urban areas in all the districts are engaged in activities included in this category (Table 8 and Figs. 17 to 21) which are predominantly urban centric.

OTHER WORKERS BY INDIVIDUAL CATEGORIES

Since this category includes a wide range of activities there is a need for analysing it in detail. Table 9 depicts the details of various industrial categories included in 'other workers' in which migrant workers are engaged. The highest proportion of migrant workers is engaged in the category 'other than household industry' which includes activities like manufacturing and repairs viz. production, processing, servicing, repairing or making and selling of goods. The highest proportion of migrant workers engaged in this category is in Ludhiana district (53.31 per cent), followed by Fatehgarh Sahib (48.91 per cent) and Kapurthala (46.29 per cent) whereas the lowest value is in Gurdaspur district (16.10 per cent). The second highest proportion of migrant workers (20.68 per cent) is working in the combined category of L to Q which includes a host of services like L: Public Administration and Defence, Compulsory Social Security; M: Education; N: Health and Social Work; O: Other Community, Social and Personal Service Activities; P: Private Households with Employed Persons; Q: Extra-Territorial Organisations and Bodies and those migrants who are fresh entrants to labour force and not affiliated to any particular industry.

Category G which includes wholesale and retail trade has 12.51 per cent of migrant workers. The highest proportion (16.83 per cent) of total migrant workers in this activity was enumerated in Moga district. Other districts of importance are Amritsar and Jalandhar which employed 16.62 and 15.80 per cent of migrant workers in this category. Amritsar has a large number of textile and other industries which produce consumable products which the migrants purchase directly from the factories and sell them in different parts of the district. Similarly Jalandhar city has a number of sports, shoes and cycle factories. Category F which pertains to construction activities has 9.00 per cent of the migrant workers in the state. These were enumerated in districts where development in housing or urban facilities have been taking place, viz. Faridkot (14.53 per cent), Nawanshahr (14.43 per cent), Jalandhar (13.10 per cent), Amritsar (11.38 per cent), Hoshiarpur (11.23 per cent) and Kapurthala (11.06 per cent). Category PLFFH which includes plantation, livestock, forestry, fishing, hunting and allied activities employs 7.53 per cent of migrant workers in the state. Their proportion is higher in districts where industrialisation and urbanisation is of a low level, for example Mansa (30.79 per cent), Firozpur (20.86 per cent), Muktsar (19.08 per cent) and Nawanshahr (17.55 per cent). The category of Transport, Storage and Communications (Category I) has 4.59 per cent of migrant workers in the state. These include such low level transport activities, as rickshaw and cart pulling, etc. Their proportion was higher in Jalandhar (8.64 per cent) and Amritsar (6.53 per cent) districts which have important rail and road transport routes passing through these carrying goods to Punjab and other northern states requiring workers for transporting and storing of goods e.g. in case of Amritsar the goods which are coming to India from Pakistan at Wagah and Attari borders are transported by porters and then stored in various ware houses near Amritsar city. The industrial categories J

and K which include services like financial intermediation, real estate, renting and business activities engaged 4.48 per cent migrant workers in the state. The inclusion of migrants in these categories depicts the vertical mobility of migrants in the state. The proportion of migrant workers in these categories is higher in three districts of the state *viz.* Rupnagar (6.61 per cent), Muktsar (5.97 per cent) and Mansa (5.84 per cent). The categories of electricity, gas and water supply (1.82 per cent), hotels and restaurants (1.16 per cent) and mining and quarrying (0.39 per cent) engaged smaller proportions of migrant workers.

The smallest proportion of migrant workers was enumerated in mining activities in the state reflecting the virtual absence of minerals in the state except for sand and gravels primarily found in the dry river beds in Hoshiarpur, Gurdaspur, Firozpur and Jalandhar districts (Manku, 2006, p. 113). Table 9 shows that majority of workers in this activity are in Firozpur, Ludhiana, Patiala, Sangrur, Hoshiarpur and Gurdaspur districts. In Firozpur district the confluence of rivers Beas and Sutlej is a major area of quarrying of sand and gravel; in Ludhiana district the river bed and flood plain of Sutlej are quarried for sand and gravels; in Gurdaspur large scale quarrying of sand takes place from Chakki Khad located in Dhar Kalan and Pathankot blocks of Pathankot tehsil; in Hoshiarpur

Table - 10
Punjab: Proportion of In-migrant Workers Employed in Industrial Categories of Other Workers by Sex and Residence (2001)

Industrial Categories	Male	Female	Rural	Urban
PLFFH	2.03	29.76	22.68	1.22
C	0.48	0.05	0.16	0.49
OTHHI	42.17	20.38	36.33	38.47
E	2.02	1.00	1.48	1.96
F	10.17	4.27	6.86	9.89
G	13.86	7.09	6.70	14.94
H	1.37	0.31	0.60	1.40
I	5.54	0.75	2.40	5.50
J and K	4.44	4.63	2.67	5.23
L to Q	17.93	31.76	20.14	20.90

Source: Computed from Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD.
Note:
PLFFH: Plantation, Livestock, Forestry, Fishing, Hunting and allied activities
C: Mining and Quarrying
OTHHI: Other than Household Industry which includes Manufacturing and Repairs
E: Electricity, Gas and Water Supply
F: Construction
G: Wholesale and Retail Trade
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M: Education N: Health and Social Work
O: Other Community, Social and Personal Service Activities
P: Private Households with Employed Persons
Q: Extra-Territorial Organisations and Bodies.

district quarrying is done in the highly dissected *kandi* area and the adjoining Siwalik Hills; in Patiala and Sangrur districts quarrying is carried out in the dry beds of seasonal streams called *choes*. This category of migrant workers is male dominated though a very insignificant proportion of female migrant workers is also engaged in this activity in a few districts like Ludhiana, Patiala and Firozpur.

From the above analysis, it can be generalized that in each district of Punjab the migrant workers were engaged in a particular activity which was quite characteristic of that particular district. Amritsar is traditionally known as a centre of trade and commerce therefore the migrant workers had also picked up those traits and started to work in those occupations where the locals had been working. Similarly Ludhiana, Kapurthala and Fatehgarh Sahib are industrially developed districts and here also the distribution was quite similar to that of Amritsar district. In Bathinda, Firozpur and Jalandhar districts the majority of big transporters are located here and therefore the proportion of migrant workers engaged in such activities is large here.

MALE-FEMALE DIFFERENTIAL IN OTHER WORKERS

The male-female differential in the distribution of migrant workers in various industrial categories reveals a very contrasting scenario. A larger proportion of male migrant workers (42.17 per cent) are enumerated in 'other than household industry', whereas more females (31.76 per cent) are enumerated in L to Q which includes a host of services. The proportion of male migrant workers is more in seven industrial categories out of ten. The three industrial categories where the proportion of female migrant workers is more are PLFFH, J and K and L to Q, these industrial categories include activities which are most suitable for female migrant workers. In the category of PLFFH only 2.03 per cent of male migrant workers are employed whereas almost one-third of total female migrant workers are employed in this category. In 'mining and quarrying' there is a virtual absence of female migrant workers (Category C). Although the proportion of male migrant workers is the highest in the category of 'other than household industry', but here also almost one-fifth of the total female migrants are employed (Table 10).

The distribution of male migrant workers follows the same pattern as that of general distribution of total migrant workers. The only difference is in their specific proportions. The pattern of distribution of female migrant workers is quite different from those of male as well as total migrant workers. More female migrants are engaged in L to Q services. The next occupation in which the females are employed in higher proportion (29.76 per cent) is plantation, livestock, forestry, fishing, hunting and allied activities. These vocations are generally carried out by females in addition to the daily household chores e.g. they look after the cattle, maintain kitchen gardens, etc. The category having second highest proportion (20.38 per cent) of female migrant workers is 'other than household industry' in which female migrants are employed in unskilled services in the manufacturing and repairs industry, shops, etc. Next category in which comparatively more female migrants (7.09 per cent) are enumerated is 'trade and commerce' in which retail trade of commodities seems more dominant than whole sale trade. Another 4.63 per cent of female migrant workers are engaged in financial intermediation, real estate, renting and business activities in the state which reflects the vertical mobility of females in the migrant society. An additional 4.27 per cent of female migrant workers are employed in construction mostly as unskilled labourers hired at lower wages than male labourers. Only 0.75 per cent of the total female in-migrant workers were employed in Category I i.e. transport, storage and communications mainly in services incidental to transport, storage and warehousing of agricultural products and communication services. Categories E, H and C include activities like electricity, gas and water supply (1.00 per cent), hotels and restaurants (0.31 per cent)

and mining and quarrying (0.05 per cent) in which an insignificant proportion of female migrant workers are engaged.

RURAL-URBAN DIFFERENTIAL IN OTHER WORKERS

The rural and urban areas present an almost similar proportion of occupational structure of migrant workers irrespective of the contrasting socio-economic conditions in the rural and urban areas. In the rural areas, as much as 36.33 per cent of the migrant workers were engaged in 'other than household industry', whereas in urban areas the proportion was 38.47 per cent. These migrant workers were engaged in manufacture of food products, beverages, tobacco and related products, cotton textiles, wool, silk and man-made fiber textiles, textile products (including wearing apparel), wood and wood products, furniture and fixtures, paper and paper products and printing, publishing and allied industries, leather and products of leather, metal products and parts, machinery and equipment other than transport equipment, transport equipment and parts, manufacturing industries, repair of capital goods, etc. Many of these activities are more characteristic of urban areas. It is not surprising therefore that the highest proportion of migrant workers engaged in these activities was enumerated in Ludhiana district (54.73 per cent) which is the most urbanised district of the state.

In comparison 22.68 per cent of migrant workers were enumerated in livestock, forestry, fishing, hunting, plantations, orchards, and allied activities in rural areas but in urban areas their proportion was a meager 1.22 per cent. The reason being that majority of services included in this category are more characteristic of rural areas. Another 20.14 per cent are in L to Q services in rural areas, whereas in urban areas their proportion increased slightly to 20.90 per cent.

Table - 11

Punjab: Ranking of Industrial Categories of Migrant Workers (2001)

Ranking	Industrial Category
First	Other than Household Industry (OTHHI)
Second	L to Q L: Public Administration and Defence, Compulsory Social Security M: Education, N: Health and Social Work O: Other Community, Social and Personal Service Activities P: Private Households with Employed Persons Q: Extra-Territorial Organisations and Bodies.
Third	Wholesale and Retail Trade (G)
Fourth	Construction (F)
Fifth	Plantation, Livestock, Forestry, Fishing, Hunting and allied activities (PLFFH)
Sixth	Transport, Storage and Communications (I)
Seventh	(J and K) J: Financial Intermediation K: Real Estate, Renting and Business Activities
Eighth	Electricity, Gas and Water Supply (E)
Ninth	Hotels and Restaurants (H)
Tenth	Mining and Quarrying (C)

Source: Computed from Census of India (2001): Table D 8, Migration Tables, Punjab, data available on CD.

Construction related activities employed 6.86 per cent of migrant workers in rural areas and 9.89 per cent in urban areas. Commercial activities engaged 6.70 per cent in rural areas and 14.94 per cent in urban areas. The proportion of migrant workers earning their livelihood by some financial intermediation, real estate, renting and business activities were 2.67 per cent in rural areas and 5.23 per cent in urban areas. Transport, storage and communication related services provided employment to 2.40 per cent of rural migrant workers and 5.50 per cent of urban migrant workers. The services in electricity, gas, water supply, hotels and restaurants found fewer takers in both rural and urban areas and the proportion of migrants who earned their livelihood from mining and quarrying in rural as well as urban areas was negligible (Table 10).

Likewise if the ranking of occupations according to the proportion of migrant workers is done then the first ranking occupations are 'other than household industry', followed by L to Q services, wholesale and retail trade, construction, plantations, livestock, forestry, fishing, hunting, and allied activities, transport, storage and communications, financial intermediation, real estate, renting and business activities, electricity, gas and water supply, hotels and restaurants, and at the lowest ranking is mining and quarrying (Table 11).

Occupational Divisions (2001)

The study of structure of in-migrant workers remains incomplete without a reference to their occupational composition. The occupation of an individual refers to his

Table – 12
Punjab: Proportion of In-migrant Workers according to Occupational Divisions (2001)

Occupational Divisions	Persons	Males	Females	Rural	Urban
Div. 0-1	2.21	2.56	0.85	0.70	2.84
Div. 2	3.89	3.49	5.41	2.25	4.59
Div.3	3.66	2.90	6.55	2.00	4.37
Div. 4	2.78	2.99	2.01	1.38	3.38
Div. 5	11.86	13.29	6.47	9.41	12.91
Div. 6	7.37	2.47	25.90	20.75	1.70
Div. 7-8-9	63.53	69.02	42.79	57.03	66.29
Div. 10	2.18	1.62	4.31	3.26	1.72
Unspecified	2.52	1.66	5.71	3.22	2.20
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Computed from Census of India (2001): Table D 9 Migration Tables, Punjab, data available on CD.
Note:
Div.0-1: Professional, Technical and Related Workers
Div.2: Administrative, Executive and Managerial Workers
Div.3: Clerical and related workers
Div.4: Sales Workers
Div.5: Service Workers
Div.6: Farmers, Fishermen, Hunters, Loggers and Related Workers
Div.7-8-9: Production and related workers, Transport Equipment Operators and Labourers
Div.10: Workers not Classified by occupations

trade, profession, type of work etc. The Census of India has been classifying the workers according to Industrial Categories and Occupational Divisions since 1971 following the United Nations principles and recommendations for the 1970 population census for standardization of data sheets of different countries for easy comparability. According to the United Nations the industrial classification refers to the activity of the establishment or enterprise in which the individual works and the occupation classification to the type of work done by the individual (United Nations, 1968, p.3). The Indian census followed this criterion and evolved two schemes for classifying the workers into industrial categories and occupational divisions wide National Industrial Classification-1970 and National Classification of Occupations-1968 which were issued by Central Statistical Organisation and Directorate General of Employment & Training respectively. At the time of 2001 census National Industrial Classification-1998 was used for classifying industrial categories and National Classification of Occupations-1968 was used for classifying occupational divisions.

The 2001 Census provides data on occupational structure of migrant workers using eight occupational subdivisions following the National Classification of Occupations-1968 issued by the Directorate General of Employment & Training. However operationally there were only seven occupational divisions, Division 10 includes workers not classified by occupations which further had two types of workers; (i) new workers seeking employment and (ii) workers reporting occupations which were unidentifiable or inadequately described. In 2001 there was another category 'unspecified' which included those workers who did not report any occupations.

63.53 per cent of the total migrant workers were enumerated in Division 7, 8 and 9 which include about twenty occupations related to production and related works, transport equipment operators and labourers. Highest proportions of both male and female migrant workers in rural as well as urban areas are engaged in this occupation division (Table 12). More male migrant workers (69.53 per cent) are enumerated in this division than female workers (42.79 per cent).

The remaining 36.47 per cent of the migrant workers were enumerated in other seven categories. Among these, Divisions 5 (Service workers) and 6 (Farmers, Fishermen, Hunters, Loggers and Related Workers) had 11.86 and 7.37 per cent migrant workers respectively. The remaining 17 per cent were shared by the other six divisions. These migrant workers earn their livelihood by selling their skills more in the urban areas (12.91 per cent) as compared to rural areas. The proportion of male migrants is higher (13.29 per cent) as compared to female workers (6.47 per cent) in this division. In all other divisions the migrants form less than 5 per cent of total migrant workers. More male migrant workers are enumerated in Division 0-1 because majority of occupations listed in it are more specifically suited for males, and are mostly urban based. Divisions 2, 3 and 6 have more female migrant workers in administrative, executive, managerial services and clerks. The occupations listed in Division 6 are mostly related to rural areas and are generally performed by females which are left behind in the rural areas by the male in-migrants who have moved on to urban areas of the state seeking better employment opportunities (Kalotra, 2010, p.75). In Division 4 the proportion of male migrants is slightly more, particularly in urban areas, than females. This division includes services related to commercial sector including wholesale and retail trade, manufacturing and agents, sales person, shop assistants etc. which require both male as well as female workers. In Division 5 which broadly includes service workers the proportion of male migrant workers is almost double than female workers. In rural and urban distribution of migrant workers the patterns are quite similar to general distribution.

The data on occupational divisions reveal that out of nearly 0.7 million in-migrant

Table - 13

Punjab: Occupational Structure of Male In-migrant Workers in Per cent (2001)

	Div. 0-1	Div. 2	Div. 3	Div. 4	Div. 5	Div. 6	Div. 7-8-9	Div. 10	Unspe-cified	Total
Punjab	**2.56**	**3.49**	**2.90**	**2.99**	**13.29**	**2.47**	**69.02**	**1.62**	**1.66**	**100.00**
Gurdaspur	2.08	4.68	2.95	4.99	23.33	6.86	49.78	2.77	2.56	100.00
Amritsar	1.80	3.38	2.59	2.98	19.68	2.39	64.48	1.37	1.33	100.00
Kapurthala	1.42	4.32	4.60	2.71	10.82	2.78	69.89	1.66	1.80	100.00
Jalandhar	2.54	3.40	2.50	3.95	14.11	2.76	67.99	1.35	1.40	100.00
Hoshiarpur	2.00	4.41	2.76	3.18	8.64	6.02	69.20	1.99	1.80	100.00
Nawanshahr	1.39	3.17	2.60	2.42	9.73	8.50	70.39	0.93	0.87	100.00
Rupnagar	6.14	7.70	6.34	6.04	13.67	2.69	54.90	1.13	1.39	100.00
Fatehgarh Sahib	3.04	2.84	2.00	1.51	8.95	1.69	77.27	0.68	2.02	100.00
Ludhiana	2.24	2.03	1.91	1.94	10.69	1.27	76.72	1.75	1.45	100.00
Moga	1.35	2.64	1.92	2.26	16.18	3.62	67.25	2.54	2.24	100.00
Firozpur	1.71	3.89	2.76	3.04	17.61	3.93	63.62	1.60	1.84	100.00
Muktsar	1.16	3.42	2.43	2.87	11.68	2.84	71.65	1.49	2.46	100.00
Faridkot	1.38	3.12	2.70	2.74	23.15	2.24	60.02	1.74	2.91	100.00
Bathinda	2.83	4.26	3.83	3.20	15.46	2.88	62.09	2.41	3.04	100.00
Mansa	1.61	3.57	2.80	1.66	15.18	4.07	62.62	4.72	3.77	100.00
Sangrur	1.78	3.98	2.50	2.41	10.62	3.49	71.72	1.48	2.02	100.00
Patiala	3.06	4.64	4.46	4.02	19.22	1.82	59.94	1.05	1.79	100.00

Source: Computed from Census of India (2001): Table D 9, Migration Tables, Punjab, data available on CD.
Note:
TMW: Total migrant workers
Div.0-1: Professional, Technical and Related Workers
Div.2: Administrative, Executive and Managerial Workers
Div.3: Clerical and related workers
Div.4: Sales Workers
Div.5: Service Workers
Div.6: Farmers, Fishermen, Hunters, Loggers and Related Workers
Div.7-8-9: Production and related workers, Transport Equipment Operators and Labourers
Div.10: Workers not Classified by occupations

workers in Punjab, almost 79 per cent were males and 21 per cent were females. Further, 70 per cent of the total workers were enumerated in urban areas and the rest in rural areas. In urban areas almost 87 per cent were male workers and in rural areas their value was 60 per cent. Thus it can be safely stated that majority of in-migrant workers were males. Since the proportion of females in the workforce is quite small the occupational divisions of only male in-migrants have been discussed in detail in the following discussion.

The highest proportion of in-migrant male workers (69.02 per cent) was enumerated in occupational Division 7, 8 and 9. The remaining 31 per cent were in the other seven Divisions. 13 per cent of the total in-migrant workers were engaged as service workers in Division 5. Another 3.49 per cent were in administrative, executive and managerial

occupations in Division 2. Almost 3 per cent were working as sale workers in Division 4. Clerks and related activities in Division 3 employed 2.90 per cent of migrant workers. 2.56 per cent of the total male in-migrant workers were working in Division 0-1 i.e. as professionals, or in technical and related activities. The occupation of only 1.62 per cent of the total in-migrant workers could not be covered in the NCO's-1968 scheme of classification.

Almost 2.5 per cent of the in-migrant male workers were engaged in Division 6 which includes occupations related to vast natural resources like forests and rivers. Although Punjab is called land of five rivers only two rivers traverse through it and the third one lies on its boundary and fishery is not much developed in the state. In case of forest resources not much area is under forests in Punjab. During 2008-09 only 6.07 per cent of the total area of the state was under forest cover. Thus there were almost negligible loggers in the state. Therefore there is little scope for commercial lumbering and logging of trees in Punjab and consequently the number of loggers in the in-migrant workers is the least.

The district wise distribution of in-migrant male migrants reveals that 39.14 per cent of the total male in-migrant workers in Punjab were enumerated in Ludhiana district alone and almost 77 per cent of them were engaged in activities grouped in Division 7, 8 and 9 (Table 13). In other districts also fifty to seventy seven per cent of the total in-migrant workers were engaged in the same category. The next important division which employed significant numbers of in-migrant workers was Division 5 which includes service workers like cooks, waiters, bar tenders, domestic maids, servants, sweepers, *dhobis*, barbers, *chowkidars* (watchmen), etc.. In this division the lowest proportion of male in-migrant workers were enumerated in Hoshiarpur district (8.64 per cent) and highest in Gurdaspur district (23.33 per cent). This division has 8 to 23 per cent of the total migrant workers employed in various districts of Punjab. Another important occupational group is Division 2 which relates to administrative, executive and managerial workers. The highest

Table - 14

Punjab: Ranking of Occupational Divisions according to Employment of Male In-migrant Workers (2001)

Ranking	Occupational Divisions	
First	Div.7-8-9	Production and related workers, Transport Equipment Operators and Labourers
Second	Div. 5	Service Workers
Third	Div. 2	Administrative, Executive and Managerial Workers
Fourth	Div. 4	Sales Workers
Fifth	Div. 3	Clerical and related workers
Sixth	Div. 0-1	Professional, Technical and Related Workers
Seventh	Div. 6	Farmers, Fishermen, Hunters, Loggers and Related Workers
Eighth	Div. 10	Workers not Classified by occupations

Source: Computed from Census of India (2001: Table D 9, Migration Tables, Punjab, data available on CD.

proportion of migrant workers in this division was enumerated in Rupnagar district (7.70 per cent) and the lowest in Ludhiana district (2.03 per cent). The highest proportion of male migrant workers in Division 4 consists mainly of sales workers. This division employed 1.5 to 6 per cent of the total male migrant workers in various districts of the state. The highest proportion of migrants employed in this division was in Rupnagar district (6.04 per cent) and the lowest in Fatehgarh Sahib District (1.51 per cent). The occupational Division 0-1 which includes technicians, photographers, sculptors, performing and composing artists, etc. engaged 1 to 6 per cent of the total male migrant workers in various districts. The highest proportion of these workers was in Rupnagar district (6.14 per cent) and the lowest in Muktsar district (1.16 per cent). The other three divisions also provided employment to some of the male migrant workers but their proportion was very small.

On the basis of data presented in Table 13 the relative ranking of various occupational divisions in Punjab has been presented in Table 14 which reveals that Division 7, 8 and 9 is the first ranking occupation division. This is followed by Division 5, Division 2, Division 4, Division 3, Division 0-1, Division 6 and Division 10 in decreasing order of proportion of male in-migrant workers in Punjab in 2001.

RURAL-URBAN DIFFERENTIAL

The data presented in Table 15 reveals that generally there were no significant

Table - 15
Punjab: Proportion of In-migrant Male Workers in Occupational Divisions by Residence(2001)

Occupational Divisions	Rural	Urban
Div. 0-1	0.97	3.03
Div. 2	2.64	3.74
Div. 3	1.81	3.22
Div. 4	2.10	3.25
Div. 5	12.38	13.56
Div. 6	5.93	1.46
Div. 7-8-9	70.08	68.71
Div. 10	1.70	1.59
Unspecified	2.39	1.44
Total	**100.00**	**100.00**

Source: Computed from Census of India (2001): Table D 9, Migration Tables, Punjab, data available on CD.
Note:
TMW: Total migrant workers
Div.0-1: Professional, Technical and Related Workers
Div.2: Administrative, Executive and Managerial Workers
Div.3: Clerical and related workers
Div.4: Sales Workers
Div.5: Service Workers
Div.6: Farmers, Fishermen, Hunters, Loggers and Related Workers
Div.7-8-9: Production and related workers, Transport Equipment Operators and Labourers
Div.10: Workers not Classified by occupations

differences in the distribution of male in-migrant workers in rural and urban areas of Punjab in various occupational divisions. Some small differences are discernible in occupational Division 6 and Division 0-1. The former includes jobs which are basically rural in nature. The proportion of male in-migrant workers is low in urban areas as compared to the rural areas of the state. Division 0-1 deals with professional, technical and related workers. Since traditionally urban areas are associated with professional and technical activities the opportunities in this division are more in the urban areas consequently the workers are more in urban areas than in rural areas.

Conclusions

In 2001 out of five every four male and three female migrant workers were engaged in 'other activities' apart from agriculture and household industry. The jobs which required less physical strength but more of patience and meticulous working were done by female migrant workers. The hazardous and strenuous jobs, on the other hand, attracted more male migrant workers. In several of the services listed in industrial category L to Q which needed some amount of education and technical skill, the migrant male workers had a sizeable edge over their female counterparts. Thus, there was a wide variability in the suitability of various vocations to male and female workers among the migrants, as in other sections of society. It may be noted that this differentiation was more in relative than in absolute terms.

Commercial tenancy is becoming a new feature of the agrarian economy of Punjab. Even big farmers are taking small farms on rent for increasing the productivity and income. The proportion of female cultivators is very high in five districts of *malwa* region because they are the registered owners of land and majority of them had migrated from neighbouring states after marriage. The proportion of female workers engaged as farm labourers to total female workers was distinctly higher than the corresponding figure for males in majority of districts of the state. It indicates greater suitability of agricultural labour work to female workers particularly. It may be noted that the proportion of agricultural labourers is more in the southern districts (*malwa* region) than in the northern districts of Punjab because more cash crops are cultivated in southern Punjab.

Household industry is an integral part of the migrant economy all over the state. In all the districts, the percentage of female migrant household workers is higher than the male migrant household industry workers mainly due to the reason that this activity is carried out within the household and women can do it in addition to their domestic work. In relative terms, the migrant participation in household industry is slightly more in urban areas than in rural areas. In Punjab there exists a direct relationship between the level of industrial development and distribution of migrant workers in household industry. Districts which are industrially highly developed have lower proportion of migrant workers engaged in household industry than those which are industrially less developed.

The largest proportion of migrant workers is engaged in 'other' category. One of the sub-groups in this category is 'other than household industry' which includes activities like manufacturing and repairs including production, processing, servicing, repairing or making and selling of goods. The industrial category L to Q pertains to a large number of services. Another important industrial category is 'wholesale and retail trade' activities. These three categories provide employment to about 70 per cent of in-migrant workers in the state, largely in urban areas where these activities are concentrated.

An analysis of the occupational structures reveals that majority of the migrants are engaged in 'other than household industry', which covers manufacturing and repairs of goods.

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LEVELS OF EDUCATION AND AGE AT MARRIAGE AMONG RURAL FEMALES OF PATIALA DISTRICT (PUNJAB)

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Abstract

Women in large numbers are educationally backward in India and do not have access to education due to certain socio-economic reasons. This can be well understood from the fact that the overall literacy rate in India in 2001 was 64.83 percent, where as the male and female literacy were 75.26 percent and 53.67 percent respectively. The rural female literacy at the national level was 46.13 per cent. The comparative figure for rural female literacy for Punjab was 57.72 per cent. Though higher than the national average it reflected the enormous scope for further improvement, especially in a developed state such as Punjab. Of the total 94 developing countries, the position of India is 76th so far as educational development index is concerned. *(The State of World Children,2004)*. It is in this back drop that the present paper investigates the education level among rural females of Patiala district of Punjab (India) and the female mean age at marriage, which is considered an important aspect for improving female literacy and an important determinant of their social status. The paper is based on primary data collected from twenty sample villages in different *tehsils* of the district covering twenty per cent female population from each of these villages.

Introduction

Education is rated as the most essential indicator of human development. It is a source of opportunity in any society as it helps to broaden the outlook of an individual. Therefore, it is essential for the harmonious development of both males and females. "In the contemporary world, much of the economy and prosperity is knowledge based. New ideas, new technologies, new innovations and new and better skills, apart from quality – oriented education, are what is needed to evolve an ever improving and dignified mode of living in every sphere of human activity in this era of globalization. In view of this perspective, universal elementary education, not just literacy, and higher-level of liberal and professional education are both indispensable, of course at internationally comparable levels of quality", (Gosal, 2005). Education as a qualitative aspect of human life has a strong social, cultural, economic and political bearing. Although literacy in not equivalent to education it is an important factor for both males and females to achieve all-round development.

There exist wide disparities across geographic regions and across countries in male-female educational attainments. Female deprivation is particularly acute in the developing countries with high levels of poverty. Biologically, life-expectancy at birth favours females. Yet, the proportion of females to males varies greatly across different regions of the world. For example, the proportion of females is 52.5 percent in the industrialized world but in sub-Saharan Africa, women account for only 51 percent of the population. The figures are 48 percent of the population in East Asia and less than 47 percent in South Asia (Amartya Sen, 1989). Differential mortality is the most dramatic manifestation

of systematic discrimination against females in terms of their nutrition, health care, education and welfare measures. Women account for roughly half the world's population, perform two-thirds of the hours worked, receive one-tenth of the world's income, and have less than one hundredth of the world's property registered in their names (Mommsen, 1991). It is advocated that reducing gender-imbalances in education will enhance women's capacity to contribute to economic progress since welfare economics of a region advocates for equality of sexes to command over resources, health, and in terms of freedom to develop their potential. Specifically, female education has a powerful effect on the total fertility rate and hence on population growth, infant mortality rate, and on child health and nutrition in any geographic region. A basic factor in this process is the age at which women get married. Rise in women's education level, increase in the age at marriage and an increase in the age at which they have their first child are key features of demographic transition in any country (Strauss *et al.*, 1995).

Studies on diet, nutrition and health in India suggest that in some Indian states, such as West Bengal, Orissa, Bihar, Assam and Arunachal Pradesh between 63 to 85 percent of married women suffer from anemia. The average Indian woman bears her first child before she is 22 years and has little control over her own fertility and reproductive health. More than 570 women die per 100,000 births, an indication towards lower access of females to health care centers. It is expected that an increase in level of female education and age at marriage can provide a means for improving their condition.

Source of Data and Methodology

The paper is based on primary data collected from twenty villages located in different *tehsils* of Patiala district. From each village a sample of 20 per cent of the total female population of the village was taken. In all 1732 females were covered. Out of these 39 per cent were below 15 years of age, 28 per cent between 16 to 24 years, 15 per cent 25 to 34 years, 9 per cent between 35 to 44 years and the remaining 9 per cent above 45 years of age. The data were collected through a questionnaire. The data thus collected have been aggregated and presented in the form of tables which form the basis of discussion.

Overview of Literacy, Mean Age at Marriage by Education level and Female Mean Age at Marriage by Residence

The comparative data on literacy (India, Punjab and Patiala district), mean age at marriage by educational level for males and females (India and Punjab), and mean female age at marriage by residence (India, Punjab and Patiala Distirct) for 2001 Census are presented in Tables 1, 2, and 3 respectively. Table 1 shows that the total literacy in Punjab as well as Patiala district was above the national average of 64.83 per cent. A similar pattern can be identified for male and female literacy except for total female as well as rural female literacy values which were lower than the state average but higher than the value for the country as a whole.

Table 2 shows that the mean age at marriage for general female population for Punjab (20.5 per cent) is higher than the comparative figure for India (18.3 years). Similarly the value for literate female population in Punjab (21.6 years) is again higher than the value at the national level (20.2 years). Both these values are higher than the values for the general female population indicating that the female mean age at marriage is higher among the literate females. Interestingly, the female mean age at marriage below primary level of literacy is quite close to the values for the general female population at the national as well as state levels. This suggests that female literacy below primary level does not have any significant bearing on increasing the mean age at marriage. Further, although the female mean age at marriage between above primary and up to secondary level literacy shows a trend of slight increase, however, as compared to the values

Table - 1
Punjab: Literacy Rate by Sex and Residence (2001)

State/District	General population	Literacy Rate (%)					
		Male			Female		
		Total	Rural	Urban	Total	Rural	Urban
India	64.83	75.26	70.70	86.27	53.67	46.13	72.86
Punjab	69.65	75.23	71.05	83.05	63.36	57.72	74.49
Patiala	69.9	76.1	70.2	86.1	62.9	55.2	76.8

Source: Census of India, 2001.

Table - 2
India: Mean Age at Marriage by Education Level (2001)

Country/State	India		Punjab	
	Male	Female	Male	Female
Mean Age at Marriage (General population)	22.6	18.3	23.4	20.5
Educational Level (%age)	-	-	-	-
Total	23.5	19.6	23.9	21.3
Literate	23.8	20.2	24.1	21.6
Literate below Primary	22.5	18.7	23.0	20.7
Above Primary but below Middle	22.6	19.9	23.2	20.8
Above Middle but below Matric/Secondary	23.0	19.7	23.4	20.9
Above Matric/Secondary but below Graduation	24.3	20.9	24.3	21.7
Above Graduation	27.0	24.0	26.6	23.7

Source: (1).Census of India, 2001, Marital Status and Age at Marriage, Table 8.

Table - 3
India : Mean Female Age at Marriage by Residence(2001)

Country/ State/District	Total	Rural	Urban
India	18.3	17.9	19.4
Punjab	20.5	20.4	20.6
Patiala	20.1	19.8	20.5

Source: Census of India, 2001, Marital Status and Age at Marriage, Table 11.

Table - 4
Patiala District: Education Level of Females in Sample Villages

Age Group	Education level of Literates by Age Structure (%)			
	Up to 5th Class	5th _ 10th Class	10th _ 12th Class	Graduates and above
< 15 years	88	12	Nil	Nil
16-24 years	45	47	8	Nil
24-34 years	Nil	Nil	Nil	2
35-44 years	Nil	Nil	Nil	1
>45 years	Nil	Nil	Nil	Nil

Source : Field Work

for below primary level literacy, the increase is not very significant. In this range of female literacy the values for Punjab state are higher than those for the country as a whole. A marked increase in the female mean age at marriage can be seen for female literates above graduation level, by three years at the national average figure and two years at the state level. The above figures clearly establish that female mean age at marriage increases with higher levels of education.

Another factor which results in differences in the mean age at marriage is the area of residence i.e. rural or urban. Table 3 shows that the female mean age at marriage is lower for the rural areas as compared to the urban areas at the national, Punjab state and Patiala district levels. Again the values for the rural females in Punjab as well as Patiala district are higher than the national average. Broadly therefore, it can be suggested that lower levels of literacy and residence in rural areas in the case of females tend to lower the mean age at marriage.

Female Education Levels in Sample Villages

Table 4 presents the data for female levels of education in sample villages by age group of sample female population. Broadly, a very small proportion of females above the age of 24 years in the sample studied beyond 12th class. Only two percent in the age group of 24 to 34 years are graduates, and only one per cent above the age of 35 to 44 years have this level of education. In comparison majority of females (88 per cent) in the age group of less than 15 years have studied up to 5th class, an additional 12 per cent between 5th to 10th class. In other words, all the females below the age of 15 years in sample villages have studied up to 10th class only. Among the females aged between 16 to 24 years 45 per cent have studied up to 5th class, an additional 47 per cent had education between 5th to 10th class and the remaining 8 per cent were between 10th to 12th class. Broadly therefore an almost equal proportion of females in 16 to 24 years age group have studied up to 5th and between 5th to 10th class.

In Punjab, as in north-western India as a whole, the birth of a son is perceived as an opportunity for upward mobility whereas the birth of a female is believed to result in downward economic mobility. Females are

Table - 5
Patiala District : Educational Attainments and Female Mean Age at Marriage in Sample Villages

Tehsil/ Village	Mean age at Marriage	Level of Female Education				
		Up to 5th Class (%)	5th to 10th Class (%)	10th to 12th Class (%)	Graduate and above (%)	Illiterates (%)
Samana						
Alampur	15.8	20.9	5.8	2.6	2.0	68.7
Taipur	19	21.8	30.2	9.0	6.0	33.0
Bhedpuri	16	18.5	19.8	4.2	Nil	57.5
Nabha						
Dewangarh	19	17.7	Nil	16.7	4.8	60.8
Rajpura	17.5	20.5	20.0	14.1	2.0	43.3
Patiala						
Tarain	16.5	25.7	11.3	6.7	Nil	56.7
Bhathlan	16.5	38.2	16.7	Nil	Nil	45.1
Chapar	19	15.0	12.8	20.1	4.0	48.1
Daulatpur	17	17.1	20.6	16.0	2.5	43.8
Ganaur	18	11.7	22.2	6.5	Nil	59.6
Dealwal	18	19.9	20.5	17.2	Nil	42.4
Mitho-Majra	19.5	17.4	12.9	8.8	4.2	56.7
Noor kherian	19	13.6	14.5	16.0	8.7	47.2
Partapgarh	17	22.0	17.3	10.2	Nil	50.5
Patiala(Urban,1	19.5	16.6	14.5	20.1	22.5	26.3
Rajpura						
Safdarpur	17.5	26.9	21.6	11.3	3.5	36.7
Shamashpur	17	19.7	13.0	14.2	1.0	52.1
Dhindsa	17.5	13.4	14.6	10.2	3.0	58.8
Dera Bassi						
Sheikhpur	20	21.1	9.0	40.5	4.8	24.6
Mehmadpur	18.5	10.8	10.0	16.2	Nil	63
Total	-	19	13	7	3	58

Source: Field Survey2008-09.
Note: Names in bold letters indicate Tehsils

perceived as burdens (Desai, 2001). According to the Institute for Human Development (CIHD) based at Chandigarh during 2002 – 2003, every ninth household in the state acknowledged sex selective abortion with the help of antenatal sex determination tests. People in general and in rural areas in particular perceive low social and economic returns from a girl child once she is married and hence hesitate on spending money on her education. Prejudice against the mobility of females also come in way of their education. Some families who are ruled by orthodoxy and conservatism do not allow their daughters to move out of their houses and thus they are confined within the four walls of the house and do not get the opportunity to attain formal education – a feeling revealed by most of girls during field survey. Another factor

associated with low educational pursuits of females is out migration of Sikhs from Punjab which has tilted demographic balance negatively in their favour registering negative population growth rate since last census decades from 1981 onwards. Firstly in absence of males the females have to shoulder the responsibilities of their families and households, secondly for sake of their protection in view of political instability in Punjab post 1984, they had to restrict their mobility (Gill, 2005).

Table 5 shows the village wise educational levels and mean age at marriage for the female sample population. On an average 58 per cent of females in the sample villages are illiterate. The proportion of illiterates in these villages varies from 68.7 per cent in Alampur village in Samana *tehsil* to 24.6 per cent in Sheikhpur village of Dera Bassi *tehsil.* Out of the 20 surveyed villages in as many as ten the proportion of illiterate females is above 50 per cent, in an additional six villages it is above 40 per cent and only the remaining four villages less than 40 per cent females are illiterate.

The proportion of females having studied up to 5th class in sample villages varies from 38.2 per cent in Bathlan village in Patiala *tehsil* to 10.8 per cent in Mehmadpur in Dera Bassi *tehsil.* On an average only 19 per cent of females in the sample belong to this level of education. Out of the twenty surveyed villages only ten have values above this average. In comparison only 13 per cent of the sample females had studied between 5th to 10th class. Out of twenty surveyed villages thirteen have values above this figure. The highest proportion of females in this category was in Taipur village (30.2 per cent) in Samana *tehsil* and the lowest of 5.8 per cent was in Alampur village also in the same *tehsil.* Only 7 per cent of the sample females had studied between 10th and 12th class. An exceptionally high value of 40.5 per cent in this category was in Sheikhpur village in Dera Bassi *tehsil.* Out of the total twenty villages in as many as twelve villages the values were between 10 per cent and 20 per cent. Only 3 per cent of the sample population were educated up to graduation and above level. The highest proportion of females in this category, as expected, was in Patiala (urban). In eight out of twenty villages the values ranged between 3 per cent in Dhindsa village in Rajpura *tehsil* to 8.7 per cent in Noor Kherian village in Patiala *tehsil.* The distribution of sample females in different educational categories does not indicate any definite pattern. This suggests that local factors at the village level need to be investigated to understand the different levels of education among the sample female population.

Educational Attainments and Female Mean Age at Marriage

The mean age at marriage in the sample villages varies from 20 years to 15.8 years. The most clear association between educational attainment and female mean age at marriage can be identified in terms of proportion of illiterate females in individual villages. Alampur village which had the highest proportion of illiterate females (68.7 per cent) had the lowest mean age at marriage (15.8 years). In comparison Sheikhpur village in Dera Bassi *tehsil* had the lowest proportion of illiterate females (24.6 per cent) had the highest (20 years) mean age at marriage. In only nine out of the total twenty villages the mean age at marriage was above eighteen years i.e. the legal age for marriage. In an additional seven villages it was between 17 to 18 years and in the remaining four it was less than 17 years. There is no clear cut relationship between proportion of females educated up to 5th class and the mean age at marriage e.g. in Bhathlan village the proportion of females educated up to 5th class was the highest (38.5 per cent) and the mean age at marriage was 16.5 years; at the same time the lowest proportion of females in this education category was in Mehmadpur (10.8 per cent) and the mean age at marriage in this village was 18.5 years; Alampur village had 20.9 per cent females educated up to class 5 and the mean age at marriage was 15.8 years, the lowest in the sample. A somewhat similar trend can also be identified for the education category of 5th to 10th class. Though a general

trend of increasing mean age at marriage with a decrease in the proportion of females in this education category can be identified the extreme values do not support this generalization e.g., Sheikhpur village has the second lowest proportion of females in this education category (9 per cent) and the mean age at marriage is the highest in the sample (20 years), at the same time Alampur has the lowest proportion of females in this education category (5.8 per cent) and the lowest mean age at marriage (15.8 years). A more clear pattern of relationship between level of education and mean age at marriage can be identified in the case of females educated up to 12th class. Once again except for extreme values and five isolated cases, the mean age at marriage tends to increase with an increase in the proportion of females in this education category. This suggests that education at this level i.e. 12th class has the effect of increasing mean age at marriage. Although female graduates were not identified in seven out of the total twenty villages, except for two villages Alampur and Sheikhpur, a trend of increase in mean age at marriage with an increase in the proportion of female graduates can be identified. This also suggests that except for isolated cases female education up to graduate and higher levels is associated with an increase in mean age at marriage.

Among various components of culture, marriage is one of the most important. It helps in understanding the customs and traditions of a society, their level of socio- economic advancement, and their attitude towards different social institutions such as female marriage (Chitkara, 2001). In Punjab it is an important means of getting rid of the female folk at young ages resulting in harming them physically, mentally and socially. She is considered as a burden and liability for the family despite the fact that the state has undergone tremendous socio-economic changes in recent decades. Women in Punjab have for long been confined to the four walls of the house. Moreover, there are fewer opportunities for them to participate in the family's economic struggle. Further, general poverty, low status of woman, early marriage and high incidence of drop-outs from the schools even at the primary level, household responsibilities of women, prejudices against their mobility have resulted in their low social status. The demographic imbalance has a direct bearing upon the marriage system. Punjab has inherited the cultural legacy of strong son preference. Among various communities and religious groups with varied socio- economic backgrounds patri-locality, patri-lineage and other considerations manifest in women and girls having subordinate position in the family and discrimination in property rights. Illiteracy and very low level of education among people is also an important reason for early marriage among females.

Conclusion

The paper, based on primary data collected from a sample of 20 per cent of the total female population of twenty villages located in different *tehsils* of Patiala district tries to understand the relationship between the level of education and the female mean age at marriage among rural females. The two are considered to be important aspects for improving the social status of women. The total literacy in Punjab as well as Patiala district was above the national average of 64.83 per cent. Similarly the values for male and female literacy except for total female as well as rural female literacy were lower than the state average but higher than the value for the country as a whole. The mean age at marriage for general female population for Punjab is higher than the comparative figure for India. Similarly the value for literate female population in Punjab is higher than the value at the national level. Both these values are higher than the values for the general female population indicating that the female mean age at marriage is higher among the literate females. The female mean age at marriage is lower for the rural areas as compared to the urban areas at the national, Punjab state and Patiala district levels. At the national level therefore it can be suggested that lower levels of literacy and residence in rural areas in the case of females tend to lower the mean age at marriage.

Data for female levels of education in

sample villages by age group reveals that majority of females (88 per cent) in the age group of less than 15 years have studied up to 5th class and an additional 12 per cent between 5th to 10th class. In other words all the females below the age of 15 years in sample villages have studied up to 10th class only. An almost equal proportion of females in 16 to 24 years age group have studied up to 5th and between 5th to 10th class, and only 8 per cent up to 12th class. Only three per cent of sample females above the age of 24 years studied up to graduation and above level. The highest proportion of females in this category, as expected, was in Patiala (urban). On an average 58 per cent of females in the sample villages are illiterate. Out of the 20 surveyed villages in as many as ten the proportion of illiterate females is above 50 per cent. Only 19 per cent of females in the sample had studied up to 5th class, an additional 13 per cent between 5th to 10th class while the proportion of females having studied up to 12th class and graduation and above was 7 per cent and 3 per cent respectively. There are, of course, inter-village variations in the level of female education in sample villages.

The mean age at marriage in the sample villages varies between 20 years to 15.8 years. Out of the total twenty surveyed villages in nine the mean age at marriage was below the legal age at marriage i.e. 18 years and varied between 16 and 17 years, and in an additional nine villages it was above the legal age and varied between 18 to 19.5 years. A clear association between educational attainment and female mean age at marriage can be identified in terms of proportion of illiterate females in individual villages. There is no clear cut relationship between proportion of females educated up to 5th class and the mean age at marriage. A somewhat similar trend can also be identified for the education category of 5th to 10th class. In the case females educated up to 12th class, except for extreme values and five isolated cases, the mean age at marriage tends to increase with an increase in the proportion of females in this education category. This suggests that education till 12th class may be the threshold for increasing mean age at marriage. Although female graduates were not identified in seven out of the total twenty villages, except for two villages, a trend of increase in mean age at marriage with an increase in the proportion of female graduates can be identified. This suggests that female education up to graduate and higher levels is definitely associated with an increase in mean age at marriage. It must, however, be pointed out that since the range of values for mean age at marriage is quite narrow a more intensive study is required to understand all the factors associated with female age at marriage among the sample villages.

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CHARACTERISTICS OF FLOATING WORKFORCE IN RAJOURI TOWN (J&K), INDIA

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Abstract

Floating labour constitutes an important economic pillar in Jammu and Kashmir State. The presently available workers in the state are not only coming from Bihar, Jharkhand, Chhattisgarh, Orissa, Uttar Pradesh, Rajasthan, Punjab, Haryana and West Bengal but also from an adjoining country like Nepal. These workers are employed in every sector of economy. The arrival of outside work force has also changed socio- cultural scenario and technological advancement in the area.

Present study attempts to understand the characteristics of floating workforce and its status in local labour market. The study finds that outstation workers constitute 40 to 70 percent of the total sample workforce. This labour is working in different areas such as construction, education, repairing and maintenance, household activities, service centers, art and craft, extraction of minerals, small scale industries etc.

Key words: Floating workforce, local labourer, socio- cultural scenario, stakeholders, working sector, economic up gradation.

Introduction

The term floating population has been used extensively to denote the in-migration process to urban areas in China. Essentially it refers to migrant labour in an urban area. Increased accessibility and opportunities for skilled and unskilled labour generally promote migration to towns. This study pertains to describing the characteristics of floating workforce in Rajouri town in terms of their area of origin, socio-economic attributes, type of employment, education level and standard of living.

The floating workforce leads not only to socio-economic transformation but also affects the local labour market by means of increasing their technical skill. In many areas the floating workforce has enriched the technical potential of the local labourers and in others, many people lose their jobs because of their entrance. The process of migration and floating character of labour is associated with changes in traditional economic, social and political systems. Moreover, the new industrial era has brought about materialism, discipline, monotony, job displacement, impersonally, work interdependence and related behavioral phenomenon (Martin, *et al.*, 1969). However, labour structure is often the result of over specialization and over functionalism of activities and job assignments (James, 1950). In the present study an attempt has been made to understand the socio-economic characteristics of floating labour in every sector of economy and their status after entering the labour market in Rajouri town of Jammu and Kashmir state.

Objectives

1. To identify the percentage of floating workers according to their area of origin, age structure, proportion of dependent population and sex ratio.
2. To identify the percentage of floating and local labourers employed in different sectors of economy.
3. To understand the type of accommodation occupied by migrant workers.
4. To analyze the socio-economic status of floating labourers in terms of income

differentials according to different sectors of their employment and monthly income by their areas of origin.

5. To examine the educational and technological skill of floating labourers.

Methodology

The study is based on primary data and information collected through well framed questionnaires. Different wards of the Rajouri municipality were frequently visited for interviews with the labourers to know their socio-economic conditions and nature of their employment. A total of 210 randomly selected respondents, 105 local and 105 migrant, were interviewed. The study is restricted to local and non - local sample workers engaged in public sector only because no outsider is allowed to work in private sector owing to constitutional requirements. The information thus collected has been presented in tables which form the basis for discussion.

Study Town

Rajouri town is the district headquarters of the district of the same name in Jammu Division of Jammu and Kashmir state. According to 2001 census it was a Class III town having a Notified Area Committee and a population of 21580 persons. The sex-ratio of its population was 722 females per 1000 males. The overall literacy of its population was 87.66 per cent and 85.66 per cent of its male and 91.37 per cent of its female population was literate. The number of total workers in the town was 8229 constituting 38.13 per cent of the total population.

Main Areas of Origin

The sample floating work force in Rajouri town belongs not only to the Indian states of Bihar, Chhattisgarh, Jharkhand, Orissa, Rajasthan, Punjab, Haryana, Uttar Pradesh, West Bengal, Madhya Pradesh, Andhra Pradesh but also from an adjoining country like Nepal. The percentage of labourers coming from these areas has been presented in Table 1.

The table shows that the highest proportion of surveyed workers, male, female and total, belong to Chhattisgarh (19, 18.8 and 20.2 per cent respectively). The second most important area of origin of migrant workers – total, male as well as female - is Bihar. However, for all the states there are variations - though small and rarely exceeding one percentage point - in the proportion of total, male and female migrants. Except for workers from other areas, which had more female (4.7 per cent) as compared to male migrant workers (2 per cent), all the other states had more male migrant workers as compared to females. This category of migrant workers also had the lowest proportion of total migrants (2.6 per cent). In comparative terms workers from Chhatisgarh and Bihar together comprised 37.5 per cent total migrant workers. An additional 10.2 per cent workers were from Jharkhand. The proportion of workers from all other states was less than 10 per cent. As much as 58.5 per cent of male workers in the sample were from four states *viz.* Chhattisgarh, Bihar, Orissa and Uttar Pradesh (19, 18.5, 10.7 and 10.3 per cent respectively). As many as 55.2 per cent of female workers also belonged the these four states in the same ranking order. The lowest proportion of female workers came from West Bengal (3.8 per cent). The same was true in the case of male workers (4.3 per cent) if the category of male workers from other areas is excluded.

Age Structure and Dependent Population

The sample floating population coming from different states belongs to different age groups and their percentage share varies across age groups as well as states (Table 2). All the workers has been classified into three age groups of 0-5, 5- 60 and above 60 years in which 0-5 and above 60 years is considered as dependent population on the working age group i.e. 05 to 60 years of age. The table shows that the highest proportion of working population is from Jharkhand (82 per cent) followed by Haryana (81 per cent), West Bengal (78 per cent), and Punjab (76 per cent). The states of Bihar, Orissa and Rajasthan had 75 per cent working population each. The lowest proportion of working population belongs to Nepal (67 per cent) and the category

Table - 1

Rajouri Town: Proportion of Migrant Workforce by Area of Origin

S. No	State Of Origin	Male	Female	Total
1	Bihar	18.5	17.7	17.3
2	Chhattisgarh	19.0	18.8	20.2
3	Jharkhand	9.6	8.5	10.2
4	Orissa	10.7	10.0	8.7
5	Rajasthan	7.6	6.7	5.5
6	Punjab	9.3	8.5	6.2
7	Haryana	8.9	7.9	7.5
8	Uttar Pradesh	10.3	9.2	8.6
9	West Bengal	4.3	3.8	4.7
10	Nepal	5. 0	4.2	8.5
11	Others	2.0	4.7	2.6
	Total	100	100	100

Source: Field Work

Table - 2

Rajouri Town: Percentage of Migrant Workers in Different Age Groups

S. No	State Of Origin	0-5	5 – 60	> 60	Total
1	Bihar	20	75	5	100
2	Chhattisgarh	25	72	3	100
3	Jharkhand	17	82	1	100
4	Orissa	19	75	6	100
5	Rajasthan	20	75	5	100
6	Punjab	22	76	2	100
7	Haryana	15	81	4	100
8	Uttar Pradesh	28	70	2	100
9	West Bengal	15	78	7	100
10	Nepal	28	67	5	100
11	Others	31	64	5	100

Source: Field Work

Table - 3

Rajouri Town: Percentage of Migrant and Local Labour in Different Sectors of Economy

Primary		Secondary		Tertiary	
Floating	Locals	Floating	Locals	Floating	Locals
72	28	52	48	39	61

Source: Field Work

of 'other' areas (64 per cent).

The table shows that the proportion of sample population in the above 60 years age group is quite small ranging between seven per cent from West Bengal to only one per cent from the Jharkhand. In comparison the highest proportion (31 per cent) of sample population in the less than 5 years of age belonged to 'other' areas, followed by Uttar Pradesh and Nepal (28 per cent each). Chhattisgarh had 25 per cent of the sample in this age group. Four states, *viz.*, Orissa, Jharkhand, West Bengal and Haryana had less than 20 per cent in this age group.

In terms of dependent population i.e. combined population in the age group of less than 5 years and more than 60 years the highest proportion is from the category "other" areas (36 per cent) of which 31 per cent belonged to less than 5 years age group. The second highest value is for Nepal (33 per cent) of which 28 per cent were less than five years of age. The third highest value is for Uttar Pradesh (30 per cent) of which 28 per cent were children. Bihar, Orissa and Rajasthan had 25 per cent dependent population each. The proportion of less than five years and more than 60 years population was also the same (20 and 5 per cent each respectively) for Bihar and Rajasthan. For Orissa this proportion was 19 per cent. In every case the major contributor to dependent population was the less than five years age group.

Employment in Different Sectors of Economy

Table 3 presents the proportion of local and floating workers employed in different sector of economy in Rajouri town and Table 4 presents proportion of floating workers employed in different sectors of economy according to their states of origin. Table 3 shows that floating work force occupied 72 percent of total workforce in primary activities, 52 percent in secondary and 39 percent in tertiary activities as compared to 28 percent, 48 percent and 61 percent of local workers respectively. The highest proportion of local labour is in the tertiary sector (61 per cent) 'while floating workers have highest proportion in the primary sector (72 per cent) In the secondary sector the values of the two categories are quite close to each other (52 and 48 per cent) .

However, the worker's share in primary, secondary and tertiary sector varied from state to state. A sector wise comparison of floating workers employed in different sector of economy shows that the highest proportion of total workers from every state was employed in secondary sector. The values in this sector range from highest of 57 per cent for 'other' area category and 53 per cent for Orissa to 41 per cent for Haryana. The lowest value for this sector is higher than the highest value for employment in primary sector (38 per cent) also for Haryana, and the highest value for tertiary sector (27 per cent) for Nepal. The proportion of male workers employed in secondary sector ranged from 35 per cent for 'other' areas, 30 per cent each for Chhattisgarh, Orissa and Nepal, 29 per cent each for Bihar and Rajasthan, 28 per cent each for Punjab and West Bengal and 24 per cent each for Haryana and Uttar Pradesh. The proportion of female workers in this sector was also higher than the other sectors and varied from 24 per cent for Jharkhand to 17 per cent for Haryana. Interestingly this value was only one per cent point higher than the highest proportion of female employment in primary sector, also for Haryana.

In the primary sector the values of total migrant workers range from highest proportion for workers from Haryana (38 per cent) and the lowest for Nepal (23 per cent). The highest value for Haryana is followed by Punjab (34 per cent) and Bihar and Uttar Pradesh (33 per cent each). From Haryana 20 per cent males and 18 per cent females were employed in this sector. For Punjab the comparative figures were 19 and 15 per cent respectively, for Bihar 21 and 12 per cent respectively and for Uttar Pradesh 18 and 15 per cent respectively. In comparative terms higher proportions of male workers from Bihar, Haryana, Punjab and Uttar Pradesh were in this sector. The lowest proportion of male workers in this sector was from Chhattisgarh, Jharkhand and Nepal. Higher proportion of female workers in this sector were from Haryana, Punjab, Uttar Pradesh and West Bengal and the lowest from Jharkhand, Chhattisgarh, and Nepal.

Table - 4
Rajouri Town: Employment of Migrant Workers in Different Sectors of Economy (Percent)

S. No	State Of Origin	Primary		Secondary		Tertiary	
		Male	Female	Male	Female	Male	Female
1	Bihar	21	12	29	18	18	2
2	Chhattisgarh	15	10	30	20	18	7
3	Jharkhand	14	11	28	24	17	6
4	Orissa	16	13	30	23	11	7
5	Rajasthan	18	14	29	19	12	8
6	Punjab	19	15	28	20	9	9
7	Haryana	20	18	24	17	13	8
8	Uttar Pradesh	18	15	24	20	15	8
9	West Bengal	17	14	28	19	14	8
10	Nepal	13	10	30	20	15	12
11	Others	15	11	35	22	12	5

Source:Field Work

Table - 5
Rajouri Town: Sex Ratio of Migrant Workers

S. No	State Of Origin	Sex Ratio
1	Bihar	945
2	Chhattisgarh	956
3	Jharkhand	920
4	Orissa	890
5	Rajasthan	980
6	Punjab	965
7	Haryana	967
8	Uttar Pradesh	945
9	West Bengal	971
10	Nepal	896
11	Others	678

Source:Field Work

In the tertiary sector the highest proportion of total workers was from Nepal (27 per cent) followed by Chhattisgarh (25 per cent). The lowest proportions were from Punjab and Orissa (18 per cent each) and the lowest from'other' areas (17 per cent). Highest proportion of male workers in this sector was from Bihar and Chhattisgarh (18 per cent each) and the lowest from Orissa (11 per cent) and Punjab (9 per cent). The proportion of female workers in this sector varied from the highest of 12 per cent for Nepal followed by Punjab (9 per cent) and the lowest for 'other' areas (5 per cent) followed by Bihar (2 per cent).

Sex Ratio

Sex ratio refers to the number of females per thousand of male population in any area and is an important determinant of a balanced work force. The sex ratio of sample population as presented in Table 5 shows that the sex ratio among workers from Rajasthan was highest (980) followed by West Bengal (971) and Haryana (967). The lowest sex ratio among floating workforce was for workers from Orissa (890) followed by the category 'other' areas (678). Except for this category, the sex ratio of these workers was higher than the average sex ratio for Rajouri town (722).

Type of Accommodation

The type of accommodation along with monthly income can be taken to represent standard of living of a population. In this section type of accommodation in terms of rented, slum or tented, and official according to the rent paid for it has been described. The

rent paid by the workers has been classified in to three categories *viz.*, less than Rs. 200, 200 to 500 and more than 500. The data for this attribute are presented in Table 6. Broadly highest proportion of workers occupy rented accommodation. The values in this category range from more than 60 per cent for workers from Bihar (65 per cent), Chhatisgarh, Jharkhand and Nepal (60 per cent) in a descending order. More than 50 per cent workers from Haryana (58 per cent), Rajasthan, Orissa, West Bengal, Punjab and Uttar Pradesh (50 percent) live in rented accommodation. Only 42 per cent of the workers from 'other' areas occupy this type of accommodation. Between 48 per cent (other areas) and 20 per cent (Bihar) workers have official accommodation provided by the employers against deduction of rent from their salaries. Thus, more than 80 per cent workers from every state are living in either rented or official accommodation e.g. 100 percent workers from Nepal and 82 per cent from Uttar Pradesh have either of these two types of accommodation. The proportion of workers living in slums/ tents varies from the highest value of 18 per cent for Uttar Pradesh to 10 per cent for the 'other' areas category.

In terms of rent paid for accommodation the values are naturally generally low for highest rent category i.e. more than Rs. 500 for rented as well as official accommodation. The highest proportion (19 per cent) of workers in rented accommodation belong to West Bengal and the lowest (10 per cent) to Haryana. More than 20 per cent workers coming from eight out of ten states, except for those from Rajasthan (18) per cent and 'other' areas (11 per cent) are in the middle category of Rs. 200 to 500. Comparatively speaking the values in this middle category of Rs. 200 to 500 are higher than the other two categories. In comparison, more than 20 per cent workers from only five states *viz.* Bihar (24 per cent), Rajasthan (23 per cent), Orissa and Haryana (21 per cent each) and Chhattisgarh (20 per cent) pay a rent of less than Rs. 200. The lowest proportion of workers in this category is from Punjab (14 per cent) and West Bengal (12 per cent). So far as proportion of workers in official accommodation is concerned the values tend to decrease with an increase in rent. Thus consistently higher proportion of workers (above 10 per cent) from various states, except Bihar (9 per cent) were found to be paying less than Rs. 200 as rent. Out of the ten states of origin of workers, those from

Table - 6
Rajouri Town: Proportion of Migrant Workers in Different Types of Accommodation

S. No	State Of Origin	Rented			Slums/ Tents	Official Accommodation		
		< 200	200-500	>500		< 200	200-500	>500
1	Bihar	24	25	16	15	9	6	5
2	Chhattisgarh	20	26	15	13	11	12	3
3	Jharkhand	19	26	16	12	12	10	5
4	Orissa	21	21	12	15	16	10	5
5	Rajasthan	23	18	15	16	11	9	8
6	Punjab	14	25	12	14	11	8	16
7	Haryana	21	27	10	10	11	12	9
8	Uttar Pradesh	18	20	12	18	13	9	10
9	West Bengal	12	21	19	12	14	10	12
10	Nepal	17	28	15	0	14	12	14
11	Others	16	11	15	10	13	14	21

Source: Field Work

Table - 7
Rajouri Town: Proportion of Migrant Workers by Economic Sector wise Monthly Income (Rs.)

S. No	State Of Origin	Primary			Secondary			Tertiary			Total (%)
		< 3000	3000-8000	>8000	< 3000	3000-8000	>8000	< 3000	3000-8000	>8000	
1	Bihar	9	13	10	15	10	9	12	9	13	100
2	Chhattisgarh	8	8	20	12	11	8	13	8	12	100
3	Jharkhand	7	9	26	10	11	9	10	9	9	100
4	Orissa	10	7	22	9	10	10	12	8	12	100
5	Rajasthan	12	11	19	8	9	11	13	7	10	100
6	Punjab	10	9	25	12	9	6	11	9	9	100
7	Haryana	10	8	27	11	11	5	10	10	8	100
8	Uttar Pradesh	9	10	25	9	9	8	11	10	9	100
9	West Bengal	7	9	24	10	9	9	9	12	11	100
10	Nepal	13	12	20	10	8	8	12	9	8	100
11	Others	8	10	21	12	8	8	13	12	8	100

Source: Field Work

seven states paid Rs. 200 to 500 as rent for their official accommodation. In this category the highest value was for workers from 'other' areas (14 per cent) followed by Chhattisgarh, Haryana and Nepal (12 per cent). The lowest values were for Punjab (8 per cent) and Bihar (6 per cent). The proportion of workers in the highest rent category i.e. more than Rs. 500 varied from 21 per cent for 'other' area and 16 per cent for Punjab to 5 per cent each for Bihar, Jharkhand and Orissa to 3 per cent for workers from Chhattisgarh.

Monthly Income

The economic status of floating workforce can be understood in terms of monthly income from employment in the three sector of economy. The data pertaining to this aspect has been presented in Table 7.

A majority of floating workers are employed in primary sector, as compared to other sectors. Also, the proportion of workers earning more than Rs.8000/month is the highest compared to other sectors. In this group the proportion of workers is more than 20 per cent for nine out of eleven states for which data were collected. The highest percentage of workers in this category were from Haryana (27 percent), followed by those from Jharkhand (26 percent), Punjab and Uttar Pradesh (25 percent each). The lowest proportion of workers in this income group was from Rajasthan (19 per cent) and Bihar (10 percent). In comparison workers in the middle income and lower income group i.e. Rs. 3000/ to 8000/ and less than Rs. 3000/ month in this sector do not exceed the value of 10 per cent in five out of eleven states for which data were collected. Only for Rajasthan and Nepal the values are more than 10 per cent in both these groups. The highest value for middle income group is for Bihar (13 per cent) followed by Nepal (12 per cent) and the lowest (7 per cent) is for Orissa. In the low income group the highest value is for Rajasthan (12 per cent) and the lowest for Jharkhand and West Bengal (7 per cent each). Unlike the primary sector in which highest proportion of workers is found in the high income group, in the secondary sector the highest concentration of workers – more than 10 per cent – is found in the low income group i.e. less than Rs. 3000/ month. In this category eight out of eleven states have workers exceeding the value of 10 per cent each. The highest value in this

Table - 8
Rajouri Town: Proportion of Migrant Workers by Monthly Income (Rs.) and State of Origin

S. No	State of Origin	< 4500	4500- 9000	9000-15000	> 15000	Workers(%)
1	Bihar	21	27	28	24	100
2	Chhattisgarh	23	26	25	26	100
3	Jharkhand	26	25	24	25	100
4	Orissa	27	25	21	27	100
5	Rajasthan	26	23	26	25	100
6	Punjab	19	27	26	28	100
7	Haryana	30	28	25	17	100
8	Uttar Pradesh	25	26	32	17	100
9	West Bengal	27	26	19	28	100
10	Nepal	23	24	24	29	100
11	Others	18	32	25	25	100

Source : Field Work

Table - 9
Rajouri Town: Proportion of Migrant Workers by Level of Education

S. No	State of Origin	Illiterate	Primary	Middle	High	Graduate and above	Technical know how	Technical degree/ diploma
1	Bihar	21	24	12	11	9	17	6
2	Chhattisgarh	10	29	13	15	16	12	5
3	Jharkhand	11	35	12	10	9	16	7
4	Orissa	23	32	10	9	8	13	5
5	Rajasthan	23	30	9	10	12	13	3
6	Punjab	14	25	9	19	10	16	7
7	Haryana	23	26	11	19	9	12	0
8	Uttar Pradesh	31	21	14	8	9	10	7
9	West Bengal	18	29	24	10	10	9	0
10	Nepal	35	21	12	9	11	12	0
11	Others	21	22	15	10	10	10	12

Source : Field Work

group is for Bihar (15 per cent) followed by Chhattisgarh, Punjab, and 'other' areas (12 per cent each). In comparison only five out of eleven states have more than 10 per cent workers in the middle income group i.e. Rs. 3000/ to Rs.8000/month. The highest proportion of workers in this group is from Chhatisgarh, Jharkhand and Haryana (11 per cent each) and the lowest (8 per cent each) from Nepal and 'other' areas. In the high income group in the secondary sector workers from only two states, Rajasthan (11 per cent) and Orissa (10 per cent) cross the 10 per cent value. The lowest value in this group is for workers from Punjab (6 per cent) and Haryana (5 per cent). Another sector of major employment for migrant workers is tertiary sector in which at least 10 per cent of workers from all the states earn less than Rs. 3000/ month. The proportion of workers in this group

varies from 13 per cent each from Chhattisgarh and Rajasthan to 10 per cent each from Jharkhand and Haryana. The lowest value of 9 per cent is for West Bengal. In the middle income group i.e. Rs. 3000/ to Rs. 8000/ month more than 10 per cent workers come from only four out of eleven states. The highest values in this group are for West Bengal and 'other' areas (12 per cent each) and the lowest for Chhattisgarh and Orissa (8 per cent each), followed by Rajasthan (7 per cent). Only five states out of eleven have more than 10 per cent workers in the high income group in tertiary sector. The value in this group is for Bihar (13 per cent) and the lowest (8 per cent each) for Haryana, Nepal and 'other' areas. Broadly therefore, highest proportion of workers in primary sector are in the high income group followed by workers in low income group in tertiary and secondary sector.

An analysis of monthly income by states of origin (Table 8) shows that more than 20 per cent workers from each state earn between Rs.4500/ to Rs.9000/month. This is the major monthly income group for migrant workers. The proportion of workers in this income group varies from 32 per cent for 'other' areas to 23 per cent from Rajasthan (23 per cent). The second major income group is between Rs.9000/ to Rs.15000/month in which the proportion of workers is less than 20 per cent for only one state *viz.*, West Bengal (19 per cent). The highest value in this income group is for Uttar Pradesh (32 per cent). In the other two income categories i.e. more than Rs. 15000/month and less than Rs.9000/month workers from only two states each in each category have a proportion of less than 20 per cent. In the former these states are Haryana and Uttar Pradesh (17 per cent each) and in the later Punjab (19 per cent) and 'other' areas (18 per cent). Broadly therefore, a majority of migrant workers earn between Rs.4500/ to Rs.15000/month in Rajouri town.

Levels of Education and Technical Skill

Education and technical know how are pre-requisites for seeking employment in better jobs and services. Data regarding levels of education and technical skill of migrant workers by area of origin is presented in Table 9. The table shows that at least 20 per cent workers from seven out of eleven states were illiterate. Among these the highest proportion was from Nepal (35 per cent) followed by Uttar Pradesh (31 per cent), Orissa, Rajastan and Haryana (23 per cent each). The illiterate workers from Punjab (14 per cent), Jharkhand (11 per cent) and Chhattisgarh (10 per cent) had lower values. In comparison the highest proportion of migrant workers from Jharkhand had received primary education (35 per cent) followed by Orissa (32 per cent) and Rajasthan (30 per cent). More than 20 per cent of worker from all the states had been educated up to primary level. The lowest value in this level of education were for workers from Uttar Pradesh and Nepal (21 per cent). Highest proportion of workers with education up to middle level belonged to West Bengal (23 per cent). If combined with the workers with primary education from the same state this value increases to 53 per cent, the highest among all the states. In the same manner higher proportion of workers with primary and middle level education were for Jharkhand (47 per cent) and Chhattisgarh (42 per cent). The lowest values for workers having received primary and middle level education were for Uttar Pradesh (35 per cent), Punjab (34 per cent) and Nepal (33 per cent). More than 10 per cent workers from eight out of eleven states had received high school education. The highest proportion of workers in this group was from Punjab and Haryana (19 per cent each) and the lowest from Orissa and Nepal (9 per cent each) followed by Uttar Pradesh (8 per cent). The highest proportion of graduate workers was from Chhattisgarh (16 per cent) followed by Rajasthan (12 per cent) and the lowest value (8 per cent) was for Orissa.

More than 10 per cent workers from all the states, except West Bengal (9 per cent), had some technical know how. The highest value in this category was for Bihar (17 per cent) followed by Jharkhand and Punjab (16 per cent each). None of the workers from

Nepal, West Bengal and Haryana had a technical degree/diploma. Except for workers from 'other' areas (12 per cent) the values for workers in this category varied between 7 per cent each for Uttar Pradesh, Punjab and Jharkhand and only 3 per cent for Rajasthan.

Conclusions

Floating workers in Rajouri town are employed in every sector of economy and contribute to its development. The study, restricted to local and migrant workers in public sector only because of the state constitutional restriction on employment of migrant workers in private sector, shows that the highest proportion of total migrant workers belong to Chhattisgarh and Bihar. There are more male migrant workers as compared to females. Four states *viz.*, Chhattisgarh, Bihar, Orissa and Uttar Pradesh, contributed 58.5 per cent of male workers and 55.2 per cent of female workers. The highest proportion of working age group population is from Jharkhand, Haryana, West Bengal and Punjab. The dependent population in the above 60 years age group is quite small and the major contributor to dependent population is the less than 5 years age group. Highest proportion of migrant workers were employed in primary sector (72 per cent). In this sector bulk of workers belong to Bihar, Haryana, Punjab and Uttar Pradesh. The workers from Rajasthan had the highest sex ratio. In fact ten out of eleven areas for which data were collected had a sex ratio of more than 896 females/ thousand males, which is higher than the average sex ratio of 722 for Rajouri town. Broadly, more than 80 per cent of workers live in rented or official accommodation. Understandably the proportion of workers living in highest rent paid category, i.e. Rs.500/ month, is quite small. Majority of workers pay Rs.200/ to Rs.500/month as rent. A majority of migrant workers are employed in primary sector and earn more than Rs.8000/month which is highest as compared to other sectors. More than 20 per cent workers from nine out of eleven states are in this income group. In the secondary and tertiary sector the highest concentration of workers (10 per cent) is in low income group i.e. Rs.3000/month. Broadly about 20 per cent or more workers from each state earn between Rs. 4500/ to Rs.15000/ month. Thus, highest proportion of workers in the primary sector are in high income group. In comparison the concentration of workers is higher in secondary and tertiary sectors. At least 20 per cent workers from seven out of eleven states were illiterate. More than 20 per cent workers from every state were educated up to primary level. More than 10 per cent workers from all the states, except West Bengal, had some technical know how. The lowest proportion of workers from various states possessed some technical degree/ diploma. In spite of this, because of their technical know how and greater exposure as compared to the local workers, majority of contractors and other service providers prefer to employ floating workers.

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FEMALE FOETICIDE – A MULTIDIMENSIONAL PROBLEM : A CASE STUDY OF HARYANA

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Abstract

Female foeticide is a multidimensional humanitarian problem. The selective elimination of the female foetus after prenatal sex determination of sex pre-selection to avoid the birth of a girl child is emerging as a serious threat to the socio-economic, cultural and ethical structures and values of Indian society. In this paper the scenario of declining child sex ratio of Haryana, its socio-economic factors are highlighted and corrective action strategies suggested for overcoming the problem of declining sex ratio. As per census 2001, there were 17 districts in India, having less than 800 sex ratio and 10 of them were in Punjab and Haryana. There are 1852 villages in Haryana where child sex ratio (0-6) is less than 750. None of the districts in the state has a sex ratio higher than the national average (933 females per thousand males). It is suggested that declining sex ratio does not follow a particular pattern. But the female deficit is more in urban areas as compared to the rural areas. Earlier the decline was due to the practice of infanticide but now this is due to sex selective abortions or female foeticide. It requires stringent action from the state authorities and mass movement to change the mindset and the unequal order of the patriarchal society.

Introduction

Sex composition is one of the basic demographic characteristics. It is extremely vital for any meaningful demographic analysis. Changes in sex ratio largely reflect the underlying socio-economic and cultural pattern of society in different ways. Sex ratio is an important social indicator to measure the prevailing equity between males and females in a society at a given point of time.

Now-a-days, selective elimination of the female foetus after prenatal sex determination of sex pre-selection to avoid the birth of a girl child is emerging as a serious threat to the socio-economic, cultural and ethical structures and values of Indian society. But the phenomenon of son-preference and gender discrimination is not confined to India alone; there have been instances of millions of gender selective deaths throughout history the world over.

Unlike in the western countries a strong preference for sons over daughters exists in the Indian subcontinent, East Asia, North Africa and West Asia (Muthurayappa *et al.*, 1997; Okum, 1996). Smaller family sizes are attained with a relatively higher number of sons through abuse of medical technologies. Pregnancies are planned by resorting to 'differential contraception' i.e. contraception use based on the number of surviving sons irrespective of family size (Okum, 1996). Following conception, foetal sex is determined by prenatal diagnostic techniques after which female foetuses are aborted (Park and Cho, 1995; Arora, 1996).

China adopted a 'one child family' norm in 1979 and the phenomenon of millions of 'missing girls' were recognized by 1990s. Female foeticide was a major cause for this imbalance. As fertility declined rapidly in East Asian countries (South Korea, Taiwan, Hongkong), selective abortion of female foetuses increased, leading to raising sex ratio at birth (SRB) over the last 10 years (Park and Cho, 1995).

Global comparison of sex ratios shows that the sex ratios in Europe, North America, Caribbean, Central Asia and the poorest

regions of Sub-Saharan Africa are favourable to women as these countries neither kill/ neglect girls nor do they use NRTs for the production of sons. In the industrialized countries, for example, there are, on an average, 106 women for every 100 men; in Sub-Saharan Africa, there are 102 women for every 100 men and in South-East Asia, 101 women for every 100 men. In comparison, researches have shown that at least 60 million females in Asia are missing and feared dead. Estimates indicate that 30.5 millions females are missing in China, 3.1 million in Pakistan, 1.6 in Bangladesh, 1.7 million in West Asia, 6,000,000 in Egypt and 20,000 in Nepal.

There is perhaps nothing more shameful than the fact that some 40 to 50 million girls and women are "missing" from the Indian population. According to UNICEF, 12 million girls are born in India every year. Out of which 25 percent do not survive the 5th year. The child sex ratio captures a part of this discrimination against females. In this age group according to the census 2001, there are only 927 girls against 1000 boys. It has also been found that the most prosperous states in India have the lowest child sex ratio in the country.

Child Sex Ratio in Haryana

Haryana was carved out from Punjab in 1966 as a new state of India. On the northern side of it are Punjab and Himachal Pradesh, Uttar Pradesh and Rajasthan are on east and south of Haryana and the western boundary is shared by Punjab and Rajasthan. The total area is 44,212 sq kms. having 19 districts under 4 divisions. Originally in 1966 the state had only 7 districts.

Haryana is one of the most prosperous states in India. In the 1970s it was among the first few states where every village was connected with a metalled road and provided with electricity connection. Its public transport network of buses and its excellent tourism spots became models of development.

There has been a continuous improvement in total, male and female literacy rates during 1991-2001. The percentage of literacy in Haryana in 1991 was 55.8 percent which increased to 68.59 percent in 2001. The literacy among males and females was 69.1 percent and 40.47 percent in 1991 which increased to 79.25 percent and 56.31 percent respectively in 2001. The gender disparity in literacy (male literacy – female literacy) decreased from 28.63 percent in 1991 to 22.94 percent in 2001.

However, on a closer look these statistics on Haryana are rather misleading. There is in fact a concern at the indices of social under growth and the maladjustment of women with economic prosperity in the state. The low sex ratio in Haryana is in line with other prosperous states of India. According to 2001 Census, there were 17 districts in India having less than 800 sex ratio and 10 of them are in Punjab and Haryana. It is very unfortunate to note that in 1852 villages in Haryana the child sex ratio (0-6 years of age) was less than 750.

The census results of 2001 reveal that with a sex ratio of 927 girls for 1000 boys, India had a deficit of 60 lakh girls in the age group of 0-6 years, when it entered the new millennium. In Haryana this figure is 3,22,436 girls in the age group of 0-6 years as per 2001 census.

The district level data on child sex ratio (CSR) in rural and urban areas of the ten districts in India with the lowest sex ratio shows that nine districts are from Haryana and Punjab while the tenth is Salem in Tamil Nadu with 763 females per 1000 males (Table 1). The data on child sex ratio in urban areas show that out of ten districts of the country with lowest urban CSR, eight are from Haryana and Punjab and out of these eight four are from Haryana and four from Punjab.

The data show that in 2001 there were 861 females per 1000 males in Haryana compared to 933 females per 1000 males in India. The sex ratio in Haryana was 865 in 1991 and it decreased to 861 in 2001. The sex ratio in most of the Indian states is adverse to females, but Haryana ranks at the bottom

Table -1
India : Top Ten and Bottom Ten Districts by Child Sex Ratio in Rural and Urban Area

Top Ten Districts (Rural Area)	Child Sex Ratio	Bottom Ten Districts (Rural Area)	Child Sex Ratio
South (Sikkim)	1,040	Sonipat (Haryana)	788
Bastar (Chattisgarh)	1,020	Rupnagar (Punjab)	787
Pulwama (Jammu & Kashmir)	1,019	Mansa (Punjab)	780
Mokukchung (Nagaland)	1,019	Sangrur (Punjab)	779
Upper Siang (Arunachal Pradesh)	1,018	Kapurthala (Punjab)	773
Dantewada (Chhatisgarh)	1,017	Ambala (Haryana)	772
Kupwara (Jammu & Kashmir)	1,014	Kurukshetra (Haryana)	772
Lakshadweep (Lakshadweep)	1,010	Patiala (Punjab)	764
Anantnag (Jammu & Kashmir)	1,008	Salem (Tamil Nadu)	763
Senapati (Manipur)	1,007	Fatehgarh Sahib (Punjab)	747
Top Ten Districts (Urban Area)	**Child Sex Ratio**	**Bottom Ten Districts (Urban Area)**	**Child Sex Ratio**
West (Sikkim)	1,130	Jind (Haryana)	775
East Kameng (Arunachal)	1,037	Fatehgarh Sahib (Punjab)	774
Kanker (Chhattisgarh)	1,031	Amritsar (Punjab)	772
Goalpara (Assam)	1,004	Sonipat (Haryana)	767
Kasargod (Kerala)	1,004	Kurukshetra (Haryana)	762
East Siang (Arunachal)	1,003	Bathinda (Punjab)	756
Perambalur (Tamil Nadu)	1,002	Kaithal (Haryana)	756
Tirap (Arunachal Pradesh)	1,001	Mahesana (Gujarat)	752
The Nilgiris (Tamil Nadu)	998	Gurdaspur (Punjab)	729
Imphal West (Manipur)	997	Shahjahanpur (Uttar Pradesh)	678

Source : Census of India, 2001

Table - 2
Haryana : District-wise Sex Ratio in 0-6 year Age Group (1961-2001)

S. No.	District	1961 to 2001				
		1961	1971	1981	1991	2001
1.	Panchkula	805 (17)	819 (16)	833 (17)	839 (18)	823 (18)
2.	Ambala	828 (16)	882 (5)	902 (3)	903 (3)	869 (7)
3.	Yamunanagar	836 (16)	848 (14)	855 (14)	883 (5)	863 (10)
4.	Kurukshetra	853 (10)	859 (11)	872 (9)	879 (6)	866 (8)
5.	Kaithal	837 (14)	843 (15)	848 (16)	853 (12)	854 (11)
6.	Karnal	853 (10)	856 (12)	856 (13)	864 (10)	864 (9)
7.	Panipat	857 (9)	852 (13)	849 (15)	852 (14)	830 (17)
8.	Sonepat	886 (5)	866 (8)	866 (12)	840 (16)	839 (16)
9.	Jind	857 (9)	860 (10)	856 (13)	838 (17)	853 (12)
10.	Fatehabad	852 (11)	870 (7)	881 (6)	887 (7)	886 (3)
11.	Sirsa	845 (13)	865 (9)	877 (8)	885 (4)	882 (4)
12.	Hisar	866 (2)	859 (11)	859 (11)	853 (13)	852 (13)
13.	Bhiwani	880 (7)	878 (6)	897 (4)	873 (8)	880 (5)
14.	Rohtak	885 (6)	878 (6)	869 (10)	849 (15)	847 (15)
15.	Jhajjar	902 (3)	903 (3)	891 (5)	861 (11)	848 (14)
16.	Mahendergarh	961 (1)	910 (2)	939 (1)	910 (2)	919 (1)
17.	Rewari	926 (2)	927 (1)	926 (2)	927 (1)	901 (2)
18.	Gargaon	891 (4)	886 (4)	880 (7)	871 (9)	874 (6)
19.	Faridabad	848 (12)	810 (17)	811 (18)	828 (19)	839 (16)

Note : Figure in parentheses indicate rank.
Source : Census of India, Series-7 (Haryana) Paper-2 of 2001,

Table - 3
Haryana : Change in District wise Sex Ratio in 0-6 Yrs. Age Group (1991 & 2001)

District	1991	2001	Drop in Sex Ratio (1991-2001)
Haryana	**879**	**820**	**59**
Panchkula	890	837	53
Ambala	888	784	104
Yamuna Nagar	888	807	81
Kuruksetra	868	770	98
Kaithal	854	789	65
Karnal	871	808	63
Panipat	889	807	82
Sonepat	878	783	95
Jind	858	818	40
Fatehabad	873	830	43
Sirsa	883	818	65
Hissar	864	830	34
Bhiwani	885	838	47
Rohtak	868	796	72
Jhajjar	886	805	81
Mahendragarh	892	814	78
Rewari	894	814	80
Gurgaon	895	863	32
Faridabad	884	856	28

Source : Census of India, Series 7, Haryana, 2001

among 30 states of India. The same pattern of an unfavourable sex ratio prevails at the district level also. None of the districts in the state has a sex ratio higher than the national average (i.e. 933). As a matter of fact only two districts with the highest sex ratio i.e. Mahendragarh and Rewari have crossed the 900 mark. All the other 17 districts of Haryana have a sex ratio between 823 and 886.

District wise Child Sex Ratio (1961-2001)

It is clear from Table 2 that Mahendragarh and Rewari districts had either the first or second rank in sex-ratio during 1961-2001. Panchkula district had the last or last but one rank during the same period. Three districts, namely Rohtak, Jhajjar and Gurgaon, had retained the same rank of 6, 3, and 4 respectively in 1961 and 1971. Yamunanagar and Hisar also had the same rank of 14 and 11 in 1971 and 1981. There was only one district, namely Ambala, which had the same rank of 3 in 1981 and 1991. Hisar and Rohtak districts retained the same rank of 13 and 15 in 1991 and 2001.

Panchkula, Ambala, Yamunanagar, Kurukshetra and Rewari districts experienced a positive change between 1961 to 1991 but a decline in CSR in 2001. Rohtak district experienced a continuous decline during 1961 to 2001. The ranks of other districts in respect of child sex ratio do not show any consistent trend between 1961 to 2001.

Table 3 reveals that none of the districts in Haryana has shown an improvement in child sex ratio in during 1991-2001. Gurgaon ranks at the top with a sex ratio of 863 and Kurukshetra at the bottom with a sex ratio of 770. It is noticeable that Mahendragarh, which ranks highest in respect of overall sex ratio, ranks somewhere in the middle in terms of CSR. Considerable decline is seen in Ambala district (decrease of 104 points) over the previous census. It is also remarkable that Panchkula, which ranks at the bottom in overall sex ratio, ranks 4th in child sex ratio. Kurukshetra which is ranked 8th in total sex ratio has the lowest rank in CSR.

Child sex ratio has gone down in all the districts of the state. In 13 out of 19 districts of Haryana it is below even the state average of 820.

The sex ratio of Haryana has declined continuously since 1981 and was at its lowest in 2001 census. A districtwise comparison of rural and urban sex-ratio of each district (Table 4) shows that Mahendragarh had highest rural sex ratio (925) followed by Rewari (912) and Fatehbad (887). Sonepat (837), Panipat (835) and Panchkula (797) had the lowest rural sex ratio in the state. Mahendragarh ranked highest in urban sex ratio (884), followed by Fatehabad (880) and Sirsa (875). The lowest urban sex ratios were returned in Faridabad (824) Jhajjar (824) and Panipat (819).

A comparison of rural and urban child sex ratio shows that Gurgaon had highest rural child sex ratio of (872) followed by Faridabad (861), Rewari and Mahendragarh (816). The lowest rural sex ratio was recorded in Kaithal (786), Kurukshetra and Ambala (772) districts.

Faridabad ranked highest in urban CSR (850), followed by Ambala (825) and Gurgaon (818). The lowest CSR was in Kaithal (757). The data suggest that the phenomenon of female deficit does not follow a particular pattern. It is prevailing across rural and urban areas. However the female deficit is more in urban areas as compared to rural areas.

Socio-Economic Factors

Table 5 shows that the skewed sex ratio in Haryana is not a recent phenomenon. Since 1901 the sex ratio in Haryana has consistently been lower than the national average. This trend reflects that there has been persistent discrimination against women in Haryana. The gap in sex ration during this period ranged from 129 in 1911 to 62 in 1991, though there was an improvement of 10 points in 2001.

The basic reasons for such an adverse situation can be traced to the socio-cultural fabric of the *Haryanavi* society. Since ancient times the birth of a son has been preferred

Table - 4
Haryana : District wise Total and 0-6 Age Group Sex Ratio by Residence (2001)

State/District	Sex Ratio			Sex Ratio in 0-6 Age Group		
	Total	Rural	Urban	Total	Rural	Urban
Haryana	**861**	**861**	**867**	**820**	**824**	**809**
Panchkula	823	797	856	837	845	825
Ambala	869	878	852	784	772	812
Yamuna Nagar	863	869	853	807	817	789
Kuruksetra	866	873	846	770	772	762
Kaithal	854	854	858	789	796	756
Karnal	864	866	860	808	814	788
Panipat	830	838	819	807	805	810
Sonepat	839	837	847	783	788	767
Jind	853	852	856	818	828	775
Fatehabad	886	887	880	830	835	806
Sirsa	882	885	875	818	823	804
Hissar	852	854	844	830	837	804
Bhiwani	880	885	858	838	841	821
Rohtak	847	839	862	796	802	781
Jhajjar	848	855	824	805	806	803
Mahendragarh	919	925	884	814	816	801
Rewari	901	912	851	814	816	801
Gurgaon	874	877	864	863	872	818
Faridabad	839	858	824	856	861	850

Source : Census of India, Series 7, Haryana, 2001

over that of a daughter because the culture assigned gender specific roles. In our patriarchal and male dominated social structure sons are perceived to be the major source of social and even political power. They carry forward the name and fame of the family and support their parents during old age. Sons are perceived as an emotional, social and financial security in old age. Whether the son is living with his parents or somewhere else, parents

Table – 5
Haryana : Trend in Sex Ratio (1901-2011)

Year	India	Haryana	Deficit
1901	972	867	105
1911	964	835	129
1921	956	844	112
1931	952	844	108
1941	947	869	78
1951	948	871	77
1961	943	868	75
1971	931	867	64
1981	934	870	64
1991	927	865	62
2001	933	861	72
2011*	940	877	63

*Source : Census of India, 2001,*Provisional 2011.*

feel secure that the son will rush to them in time of need. And after death, sons are assigned the duty to perform the last religious rites at the time of cremation. While the daughter is bound with her in-laws and is not free to take any step without the permission of her husband and his family.

The declining sex ratio is indicative of the acceleration in the incidence of female foeticide. Clearly the son preference syndrome is at the root of these sex selective abortions. For centuries the culture of India has been dominated by men. This has naturally affected everything including the way women are looked upon and treated in family and society.

The sex ratio at birth and at different age groups reveals the role of deep-rooted socio-cultural factors in determining female life chances. Socio-cultural attitudes that glorify sons and treat a daughter as a family calamity have led to the hijacking of modern technology for detecting the sex of the fetus and abortion of the female child.

"Chhore pe baje Thali, Chhori Pe Thekere Phoren" meaning "Announce the birth of a son by beating of brass plates but at the birth of a daughter break earthen pots" is an old saying in Haryana. The traditional blessing given to newly married couples is *"Ashta Putra Sowbhagyavati Bhave"* i.e. 'May you be blessed with eight sons'.

The family pressures also play an effective role in sex selective abortions. The young expectant mothers themselves are interested in knowing the sex of unborn child due to the perception that their status in the eyes of their family will go up with the arrival of a son. The tradition of the 6th day celebration called *"Chhath"* on the birth of a boy is also there. In Haryana, a mother who gives birth to a boy is given 10 kg. of *ghee* (purified butter) and the mother giving birth to a girl is given 5kg. in villages. The celebration of *"Namkaran Sanskar"* (ritual of naming the child) is also there for sons and not for daughters.

The perceptions about the unwantedness of the girl child are reflected through viewing a son as an assest and the daughter as a liability in terms of economic and physical security also. The birth of a female child is often considered a greater curse rather than female foeticide. In other words, the abortion of a female child is taken to be the easy way out.

The idea of two child family also has its own implications. Most parents believe that an ideal family is one which has one son and one daughter. If there are two sons in a family, then there are no problems but if there are two daughters, then they are not acceptable. In a family which is aspiring for only two children, if the first child is a girl, then there is tremendous pressure on the mother to give birth to a boy as the second child.

Another reason for preferring male child

in comparison to a female one is the general perception that the cost of marriage and dowry are great financial liabilities. The need for safeguarding the girl from sexual abuse is an added factor favouring the use of sex determination tests. The daughters are viewed as *'parayadhan'*. Exorbitant expenditure at the marriage of a daughter including dowry in proportion to the groom's status, the pressure from family and an element of status consciousness or rather the desire to spend more on the wedding to impress others have all added to the belief that a daughter means a depletion of the family's financial resources.

The increased rate of crime against women and the problem of safety and security of the girl child is another aspect leading to female foeticide.

Female Foeticide and Modern Technology

Female foeticide is the result of modern technology in combination with other factors. Now-a-days, the facility for ultrasound is easily available, even in comparatively inaccessible areas. The general increase in income levels has increased people's aspirations for a son. The nexus between technology and the parent's aspirations for a son has given birth to an industry where there are eager consumers and equally efficient "service providers". There is an unholy alliance between prosperity, tradition and technology. The family size is decreasing, the preference for a male child is on the rise and the female population is naturally showing a downward trend.

Framework for Social Work Intervention and Suggestive Action

In view of the prevailing trends the following corrective action strategies and agenda for social work practice may be suggested:

1. In order to make women empowered to take their own decision about their life and about the choice to give birth, there is a need to focus on basic education and employment opportunities for women and girls to change the mindset of male dominated society. This is evident from the fact that the districts having better female work participation rate have better sex ratio as well. The menace of female-foeticide and hence low sex ratio can be reduced by providing better employment opportunities to females. Economic empowerment with awareness can change the mindset of the people.
2. The government must ensure adequate and effective implementation of a wide range of laws and regulations that address gender inequality at different levels.
3. The PNDT Act should be properly and appropriately amended and implemented to curb practices contributing to missing girl child. However we have a greater task in front of us i.e. to change the mindset of doctors, the people at large and the victim women in particular, to create a socio-cultural milieu that is conducive for the girl child's survival and monitoring the activities of commercial-minded doctors thriving on sexiest prejudices.
4. Registering and monitoring of all pregnancies from the 6th week onward and not from the 12th week.
5. The doctors, family members, pregnant mother and other related people should be punished through legal provisions.
6. Provide life–sustaining resources such as health, nutrition, water and education to all children without gender bias.
7. Extend representation of women in all decision-making bodies of the state to introduce a feministic political culture conducive to a female friendly political action.
8. Vigilance committees should be established in every village and every *mohalla* in urban areas with the active participation of local women and girls. These committees should watch and monitor how many expectant mothers actually delivered the babies. Only the government run institutions should do the scanning of

pregnancies, and that too, on recommendation of the members of vigilance committees.

9. The issue of female foeticide must be sensitized at grass root level to establish it as a social cruse of society. At grass root level the urban and rural local bodies should be made responsible and its compliance a condition to their financial grants.

10. Provide proper and adequate gender sensitization training to policy makers, planners, administrators and implementers at all levels.

Female foeticide is a most inhuman, uncivilized, barbaric tragic event taking place in Haryana as elsewhere. It requires initiative and appropriate support from the government, non-government organi-zations, *panchayats* and municipalities, judiciary, social workers, mass-media, responsible citizens, students and public at large. It should be taken up as a mass movement to create awareness and sensitize the masses to shun their deep rooted anti-female prejudices and stereotypes.

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OBITUARY

PROFESSOR A. B. MUKERJI

(7th November, 1929 - 31st January, 2011)

Born on November 7, 1929 at Jhansi (U.P.), where his father, Shri S. C. MukerjiS, was teaching as Assistant Master at the Government Intermediate College, Professor Anath Bandhu Mukerji, popularly known as AB, had deep roots in the teaching profession from the early years of his life. Unfortunately his father passed away when he was only nine months old. Thereafter, his family shifted to Allahabad and settled there in the house of his maternal grandparents and was brought up under their care. It was here that the foundations of his love of learning and language were firmly laid. He had his early schooling in Allahabad and did his Intermediate Course from Anglo-Bengali Intermediate College taking up non-medical subjects – chemistry, physics and mathematics. He graduated from the University of Allahabad changing his earlier science stream to Arts with geography, economics and English literature. Subsequently, he did his M. A. in geography from the same university in 1951. While pursuing his M. A. course, the teaching of renowned Professor R. N. Dubey inspired him to move into geography for a professional career.

Soon after doing his M. A., Professor Mukerji took up the job of a lecturer in geography at Modi College, Modi Nagar (U.P.) and continued to serve in this college for about five years. During this period he visited nearby villages inhabited by different castes and religious groups to have a close look at various facets of their life and economy. As a result, he developed deep interest in, as also understanding of, the rural settlements in their different aspects, particularly their cultural landscape. At times, his meetings with the legendary Professor N. K. Bose further triggered his interest in cultural geography, especially of the rural people. In all cases, his study of rural landscapes was based on field work where he made close and insightful observations about the people and their habitats.

In July 1956 he moved to Udaipur (Rajasthan) where he was appointed as lecturer in Geography and Fieldwork Study at the Rural Institute. While at Udaipur he got an opportunity to have a close look at the local tribal villages, their social, economic and cultural life. It was indeed an enriching experience for him. During his stay at Udaipur he heard about Professor Fred Kniffen, an eminent cultural geographer working at Lousiana State University, Baton Rouge, Lousiana, USA. He got in touch with Professor Kniffen apprising him of his deep interest in cultural geography and the studies he had already conducted on the Jats of western U.P. and the tribals of Rajasthan. Professor Kniffen appreciated his experience and offered him a teaching assistantship which became instrumental in his going to the Department of Geography and Anthropology at Lousiana State University for his doctoral research in September 1957. It was an ideal arrangement for specialization in cultural geography.

Professor Mukerji wrote his Ph. D. thesis on "Cultural Geography of the Jats of Upper Ganga-Yamuna Doab". While at LSU he took courses in cultural anthropology, cultural geography and other allied disciplines relevant to his research interests.

Upon completion of his Ph. D. programme Professor Mukerji returned to India and joined Osmania University, Hyderabad as a lecturer in geography in October 1960. During his stay at Osmania University he continued his research work in cultural geography based on intensive field work, particularly on Telengana house types, morphological aspects of the rural settlements and field patterns in that region. His doctoral training and research publications on the themes he had been working on from the very beginning made him a leading cultural geographer of the country. He was at Osmania University for about three years.

Professor Mukerji was offered the position of lecturer in the Department of Geography by Panjab University, Chandigarh in 1963. With his joining the young Geography Department at the Panjab University the faculty was greatly strengthened. Deservedly, he was promoted to Reader's position in 1967 and subsequently elevated to Professorship in 1981. With highly qualified and devoted faculty working as a team, the Department rose to be among the most progressive centres of geographic education and research in India. Professor Mukerji superannuated from university service in 1989.

Although his core interest remained in cultural geography, Professor Mukerji while at Chandigarh diversified his research activity a great deal, moving into geomorphology, settlement geography, social geography, plant geography, etc., and published research papers in these specialities, in most cases based on fieldwork. He was a *par excellence* field geographer, more so than most other colleagues in the country. After his retirement in 1989, Professor Mukerji was on part-time re-employment at Panjab University, Chandigarh for a few years. He lectured widely both in India and abroad. He was Distinguished Visiting Professor of Geography at the University of Missouri (USA) for a semester where he had an exceedingly rich experience of interacting with their faculty members and students. During this period he delivered lectures on India's cultural geography in a number of geography departments in that region. He had similar opportunities for visiting European universities, especially in Germany, where he shared his professional ideas and experiences with geography scholars.

Professor Mukerji supervised several doctoral students, each working on a novel theme. He put a lot of emphasis on empirical research and urged his students to go to the field and dig up new information and ideas on the subject. Both in teaching and research he made commendable contributions to the promotion of geography, and to the upbringing of the geography department at the Panjab University.

Apart from his professional excellence, Professor Mukerji had a multifaceted personality. He was fond of classical music and had deep interest in literary activities. He was fond of good food and had a zeal for good living. Unfortunately he had severe health problems during the later years of his life. He passed away on 31st January, 2011 at the age of 81 years. It is an irreparable loss to the profession and the geography fraternity of India. He will always be deeply missed in his family, among his friends and colleagues, both in India and abroad. May the Almighty give peace to his departed soul and strength to all near and dear ones to bear the immeasurable loss.

G. S. GOSAL
Professor Emeritus
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OBITUARY

Shri. J. C. SEN

(4th April, 1922 - 23rd March, 2011)

Shri J. C. Sen (Jagdish Chandra Sen) was the eldest member of the faculty in the Department of Geography of the Panjab University, Chandigarh. He was born on 4th June, 1922 at Lahore (Pakistan) where he had his entire bringing up under the parental care of his father Shri Kanshi Ram. His education, right from the primary school to M. A. in Geography, was at Lahore, making him a total product of Lahore culture. His was one of the very early groups of Post-graduate students of Geography at the Punjab University, Lahore. He entered university service on 2nd March, 1947, just before Partition of the country, as Demonstrator in Geography. After the Partition, the Post-graduate teaching of Geography was started at Government College, Ludhiana, as a joint venture between the Government College and the newly established Panjab University. As per rules of the university Shri Sen was promoted to the position of Junior Lecturer on 2nd April 1951 after four years of service as a Demonstrator. After another four years of teaching and practical instruction he was elevated to the position of a Lecturer in Geography on 2nd April, 1955. His focus in teaching was on Cartography, Mathematical Geography and Surveying throughout his career. He had the privilege to do Post-graduate research at the University of London under the supervision of Prof. A. E. Smailes while on study leave for 3 years. He was selected as Reader in Geography at the Panjab University on 5th October, 1967. He continued in this position till his retirement from service on 30th June, 1982.

Throughout his career, Shri J. C. Sen was a popular teacher, ever willing to help the students. He took enthusiastic part in departmental activities in which he made significant contributions. He was very social and friendly with the teaching as well as non-teaching staff. During his post –retirement period he kept himself busy with social and educational activities in the city. After a brief illness he passed away on 23rd March, 2011. It is an irreparable loss to his family, his professional colleagues and friends. The Department would miss him dearly. May God keep his soul in peace and give strength to all near and dear ones to bear this loss.

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