

## Chapter V

### **NATURE AND INTENSITY OF URBAN-RURAL INTERACTION: A FOCUS ON THE BENEFITS OF URBAN SERVICES**

Interpretation of the modes of urban-rural interaction may be made on the basis of the process of deriving benefits of urban services by the rural population. The discussion in chapter IV, makes it clear that the urban services rendered to the rural people are sine qua non for their life, because on the one hand, the well-being of rural life is facilitated and benefited by direct access to those services and on the other, from the very existence of those services in their nearest urban centre, certain benefits accrue in an indirect way.

For example, a hospital in Koch Bihar town serves people of its rural hinterland in two ways: first, it provides direct health services to them and second, it attracts villagers offering the scope of employment, which is the benefit derived due to the presence of the hospital in the town. Again, a rural labour working in the town of Jalpaiguri may get the advantage of transport services between his native village and the server town, Jalpaiguri. Similarly, other benefits are also derivative from other services discussed in chapter IV. The modes of urban-rural interaction, generated from the process of obtaining the benefits of urban services, may be spelt out as economic, social and cultural, apart from the processes related to services.

Hence, the present chapter makes an insight into the benefits of the urban services as reflected by various forms of interaction, viz., economic, cultural and social. It also explores the intensity of interaction manifested in the frequency of commuting, the factor which helps in sustaining urban-rural interface. An aggregate picture of level of urban-rural interaction and its determinants have been identified finally in this chapter. The nature, the intensity and the levels of urban-rural interaction have been explained in relation to the distance of the villages from their nearest town, the transport linkage between them and other socio-economic characteristics of the rural households.

## 5.1 Hypotheses

The following hypotheses (no.2b, 4, 5, 6-- as mentioned in the 'Introduction') may be analysed here:

- The various modes of interaction----economic, cultural and social---- associated with the benefits of urban services, have an inverse relation with the distance from towns. In other words, the proportion of rural households deriving benefits of urban services declines with increasing distance from the nearest towns.
- The intensity of urban-rural interaction, reflected by the frequency of commuting of rural households, will decrease with increasing distance from towns.
- The level of urban-rural interaction is inversely correlated with distance from the nearest town.
- More are the frequencies of bus services to the villages, the higher will be the levels of interaction.
- More are the travel time and transport fare between a village and its nearest town, the lesser will be the interaction.

## 5.2 Methodology

A. The *Nature of Interaction* has been explored with the help of the following indicators:

1. Percentage of Rural workers employed in the nearest urban centre,
2. Percentage of Rural workers in different categories of occupation in the nearest urban centre,
3. Percentage of Rural workers working in their nearest urban centres according to different levels of income,
4. Percentage of Rural households availing of recreation opportunities in the nearest town either (a) frequently, or (b) occasionally

5. Percentage of Rural households meeting relatives in the nearest town
6. Percentage of Rural households attending political meeting or party offices in the nearest town.

The indicators 5 and 6 may be considered as some of the social activities which also draw people from villages to town.

B. To measure the maximum *extent of benefits of the urban services* around the towns of Koch Bihar and Jalpaiguri, the virtual limit (outside the municipal boundaries) beyond which newspaper does not reach, have been marked and the 'newspaper circulation zones' for the two district towns have been demarcated. Quantification cannot be made from the available data (unlike the other above-mentioned indicators).

The reason for omitting the other three towns has already been given earlier (chapter IV).

C. The *intensity of interaction* has been appraised by analysing the frequencies of commuting of the rural people to towns.

Rural households have been categorised according to the frequencies of commuting of their members and the indicators selected for this purpose are:-

1. Percentage of Rural households with members commuting to core town more than once a day,
2. Percentage of Rural households with members commuting to core town daily once,
3. Percentage of Rural households with members commuting to core town four days per week,
4. Percentage of Rural households with members commuting to core town bi-weekly,
5. Percentage of Rural households with members commuting to core town weekly,
6. Percentage of Rural households with members commuting to core town fortnightly,
7. Percentage of Rural households with members commuting to core town monthly,
8. Percentage of Rural households with members commuting to core town three monthly,
9. Percentage of Rural households with members commuting to core town six monthly,

10. Percentage of Rural households with members commuting to core town annually. (The formula for calculating the ‘average frequency of commuting’ has been shown in the ‘Methodology’ section of the ‘Introduction’)

As in the case of the previous chapter, first, a distance-wise distribution of the above mentioned indicators has been illustrated to obtain a broad pattern of association between distance and the indicators of interaction.

At the second step, correlation analysis (Pearson’s product moment correlation coefficient-‘r’) has been carried out between distance and the aforementioned indicators in every step to identify the nature of the relationship statistically.

At the third step, to evaluate the *Levels of Urban-Rural Interaction* an “Index of Urban-Rural Interaction” has been constructed from the correlation matrix of selective indicators applying the method of First Principal Component. (similar to the procedure of ‘EUI’ and ‘RDI’ discussed in the ‘Methodology’-- ‘Introduction’). The indicators considered for preparing the index of interaction includes some of them already analysed in the chapter IV along with some discussed in the present chapter (to be discussed in the section 5.5). This is because of the fact that all of them represent the nature and modes of urban-rural interaction.

At the fourth step, regression analysis has been made. First, a bi-variate regression has been computed between Distance and the Index of Urban-Rural Interaction to assess the sole influence of distance on the interaction index. Further, in order to compare the joint influence of the determinants explaining the phenomenon of urban-rural interaction, the method of step-wise multiple regression has been applied considering following variables:

<u>Independent</u>	<u>Dependent</u>
Distance (km) ( $X_1$ )	Urban-Rural Interaction Index (Y)
Frequency of buses ( $X_2$ )	
Travel time (minutes) ( $X_3$ )	
Transport fare (rupees) ( $X_4$ )	

Here, frequency of buses ( $X_2$ ), travel time (minutes) ( $X_3$ ) and transport fare (rupees) ( $X_4$ ) represent transport linkage between the village and the nearest town.

### **5.3 Benefits derived from Urban Services**

The type and nature of different benefits derived directly from urban centres are reaching the rural hinterlands of the urban centres of the present study are exemplified hereafter.

#### **5.3.i Circulation of Newspapers to Urban hinterland**

As an effective medium of mass communication for reflecting information, ideas and thought, distribution of newspaper represents a special benefit to people and especially in the context of urban-rural interaction, circulation of newspaper from urban to rural places signifies the provision of urban benefits derived from urban centres by rural centres and thus the efficacy of the influence of the former on the latter.

In our study, information from the newspaper agents of Koch Bihar and Jalpaiguri towns has helped us to demarcate the newspaper circulation zone of these two towns. Figures 4.6 and 4.9 in chapter IV illustrate the same.

The newspaper circulation zone of Koch Bihar town almost corresponds to the shape of the blocks of Koch Bihar I and II. It is protruding in the north-western and south-western side and is limited within these two blocks. Speaking specifically, this hinterland has not covered some of the villages surveyed for the present study, e.g. Chhat Singimari in the extreme north-western corner and Dhumpur Balasi, Barapak, Daharerpar and Chatra Chekapdara in the south-eastern part. The location of Pundibari, a growing rural centre in between Koch Bihar and Chhat Singimari has restricted the extension of Koch Bihar's newspaper circulation zone up to Chhat Singimari as the people of this village gets newspaper (if needed) from Pundibari. Similarly, Dewanhat is a growing 'bandar' (market settlement) situated closer (than Koch Bihar) to the four mentioned villages of the south-eastern corner wherefrom the very few villagers get newspaper. Figure 4.6 shows that the complementary zone, delineated after Reilly's model, extends far beyond the newspaper circulation zone in all parts, except in the north-eastern and in the south-western parts.

For Jalpaiguri, the zone has covered the entire block of Jalpaiguri and the southern part of Rajganj block. Unlike that of Koch Bihar, this zone has included all the

villages sampled in the present study. It is observed from figure 4.9 that the newspaper circulation zone of Jalpaiguri town extends beyond the ideal influence zone (based on Reilly's model) in the western and southern part, while on the northern and eastern side it indicates a smaller service area than the ideal one.

### **5.3.ii Urban centres as the places of employment for the rural populace:**

To the people of the villages in the developing countries, the most alluring fact of an urban area is its varied employment potentials that can give relief to them from their seasonal and disguised unemployment. Indian rural areas are no exception to this scenario. A town really feeds the villagers of its hinterland, either directly by engaging them in different occupations or indirectly by fulfilling their needs through transaction of commodities (buying items of daily needs and trading of produced goods in the concerned towns). Both these types represent the economic relation of the villagers with their core towns which fundamentally reflects the nature of urban-rural interaction. The second one has already been discussed in the chapter IV.

#### **5.3.ii.a Volume of Rural Workforce employed in Core Towns**

A direct indicator of *economic relation* is occupational relation that is elucidated by the proportion of rural population working in different occupations of urban area. It is the most tangible benefits of urban services to rural people and thus is a significant index of urban-rural interaction especially in the Indian situation. In the present study, occupational relations between the selected core towns and their hinterlands have been identified through the volume of rural workforce and their occupational characteristics in the concerned towns.

Table 5.1 presents the classification of rural working population (surveyed) in different distance-zones of the hinterlands of selected towns according to their places of occupation. With the intention to compare the relative proportion of workers drawn by the core town, the places of occupation have been categorised here as 'core town', 'own village and core town' and 'others', the last one including 'own village' mainly and 'other village', 'towns other than the core town' also.

It may be noticed from Table 5.1 that, in the immediate vicinity of *Koch Bihar* town i.e., villages in the distance zone of 0-5km, more than one-third of the working

population on an average are absorbed in the employment market of their core town (Koch Bihar), though variations in proportions are distinct among the villages within the same distance zone. Such a finding may be corroborated by citing Duncan's suggestion from a study in the USA to classify rural non farm population according to places of work as "substantial numbers of rural-nonfarm residents near large cities actually work in those cities and their suburbs" (Duncan, 1961, p.555)<sup>1</sup>.

Among the alternative places of employment, the villagers' own village provides employment to more than 40% of working population (though it has not been shown in table 5.1). This ratio again varies between villages of same distance zone. For instance, the village Ghughumari, situated at a distance of 5 km absorbs about 65% of its working persons (the group 'other places' is 69% of which the village concerned has a share of 65%) and sends about 31% to Koch Bihar town for their livelihood.

With increasing distance from the town, the proportion of villagers employed in the town has declined (while it has increased in their own villages, reflected in 'other places') following the general distance-decay hypothesis. Of course, this distance-decay is not a steady course.

The fact that some of the workers of some villages earn their livelihood both from their own villages and the core town suggests that these people have not been provided with permanent employment either by their native village or by Koch Bihar town, i.e., their seasonal employment in the village has pushed them to Koch Bihar town in search of temporary employment. The inadequacy of rural employment leads the rural people to depend on nearby small and medium towns for seasonal employment. (Panneerselvam, 1991, p.1)<sup>2</sup>. In our study, this segment of population comprises agricultural labour or non-agricultural labour (determined by the seasonality of agriculture in the village and availability of non-agricultural work in the town),

Table: 5.1 Classification of Rural Working Population of the selected Urban-Hinterlands according to their Places of Occupation:  
A Distance-wise Distribution (surveyed population)

Core Towns (A)	Villages (B)	J. L. No (C)	Distance Zone (km) (D)	Distance (km) from Core Town (E)	Working Population (%) according to Places of Work		
					Core town (F)	Own village & core town (G)	Other Places(own village, other villages, towns other than the Core Town (H)
Koch Bihar	Takagach	134	0-5	4	39.84	7.58	52.58
	Ghughumari	131	0-5	5	30.77	0	69.23
	Chakchaka	107	5--10	10	37.5	0	62.5
	Nageswar Guri	41	5--10	10	4.55	10	85.45
	Talliguri	116	5--10	10	10	0	90
	Baneswar	33	10--15	11	14.29	0	85.71
	Kaljani	30	10--15	12	7.61	1.09	91.3
	Nawabganj Balasi	251	10--15	15	3.85	3.85	92.3
	Dhumpur Balasi	257	15--20	17	0	0	100
	Sajherpar Ghoramara	3	15--20	19	5	0	95
	Barapak	258	15--20	20	14.29	7.14	78.57
	Daharerpar	261	20--25	21	0	0	100
Chatra Chekadara	262	20--25	21	0	0	100	
Chhat Singimari	6	20---25	25	2.33	2.33	95.34	
D i n h a t a	Bhangni Dwitiya Khanda	110	0--5	1	14	1.32	84.68
	Chhota Sakdal	103	5--10	7	9	10	81
	Gokunda	126	5---10	8	13	6	81

	(B)	(C)	(D)	(E)	(F)	(G)	(H)
	Raja Khora	29	5---10	8	2	6.67	91.33
	Ruier Khuthi	72	10--15	12	2	1.37	96.63
	Khalisa Gosanimari	6	10--15	15	11	6.9	82.1
	Pet Bhata Seora Guri	81	15--20	18	4	0	96
	Salmara	92	20---25	22	2	0	98
	Atialdanga	220	20--25	24	0	5.26	94.74
Tufanganj	Chamta	92	0—5	1	11.38	7.32	81.3
	Deocharai	89	5—10	8	16	11.11	72.89
	Bhanukumari	65	10—15	12	5	1.67	93.33
	Takoamari	25	15—20	20	5	0	95
	Chhat Barochowki	1	20—25	21	3.6	0	96.4
Jalpaiguri	Kharia	7	0---5	4	48.15	5.56	46.29
	Paharpur	6	5---10	9	17.46	15.87	66.67
	Berubari Nagar	19	10--15	15	23.53	5.88	70.59
	Nandanpur	26	10--15	15	8.93	0	91.07
	Sakati	20	15--20	20	3.03	3.03	93.94
	Gujrimari	8	15--20	20	2.86	0	97.14
	Boalmari	29	20---25	22	6.93	0	93.07
	Kismat Sukhani	10	20---25	22	4.55	9.09	86.36
Alipurduar	Birpara	45	0---5	1	39.00	5.00	56
	Dakshin Majher Dabri	55	0---5	3	33.34	0	66.66
	Chapatali	43	5---10	10	26.67	4.44	68.89
	Naottoartari	35	10--15	13	8.33	0	91.67
	Dakshin Sonapur	27	15--20	16	3.7	3.7	92.6
	Silbari Hat	19	20---25	21	14.29	9.52	76.19

Source: Field Survey

vendor, van puller, businessman, minor manufacturer e.g., cycle mechanic, tutor etc. This trend is irrespective of distance from town (Koch Bihar) as this has been observed both in the adjacent village, e.g., Takagach (4 km from Koch Bihar) and in the distant villages as Kaljani, Nawabganj Balasi, Barapak and Chatra Chekapdara which are respectively 12,15,20,21 kilometres from the town of Koch Bihar. A graphical representation of the villagers working in Koch Bihar town has been made in figure 5.1

**PROPORTION OF VILLAGERS WORKING IN KOCH BIHAR TOWN:  
A DISTANCE-WISE DISTRIBUTION**

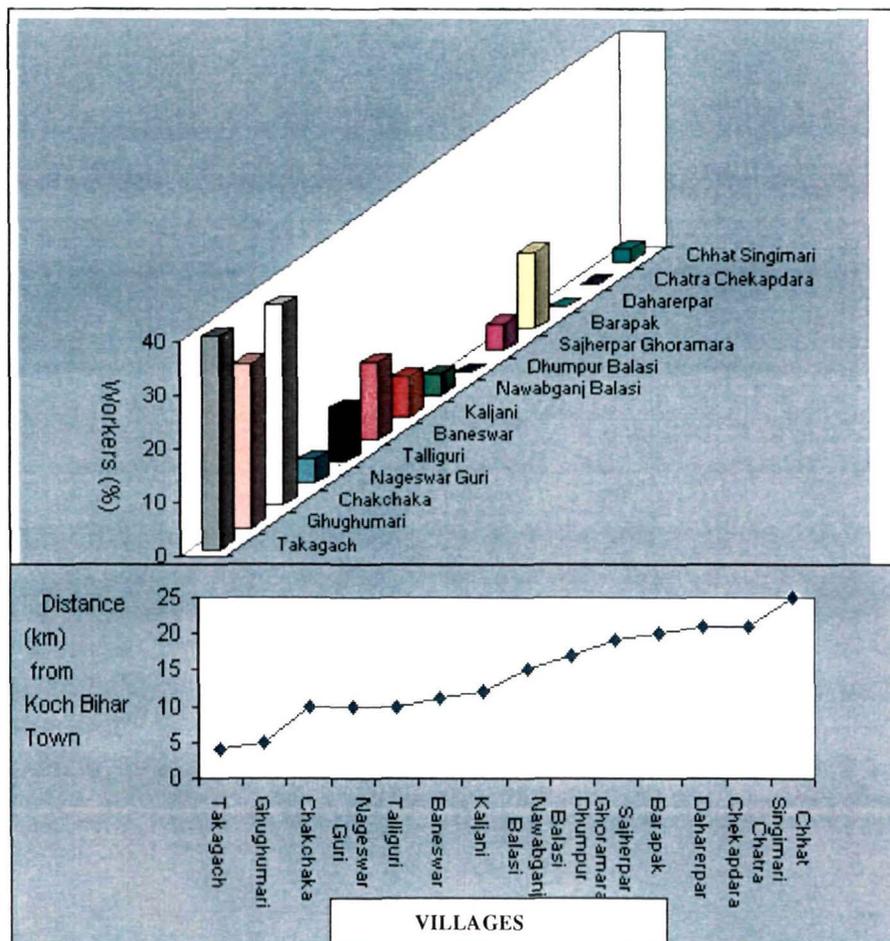


Fig. 5.1

A peculiar trend in the village of Talliguri is that the ratio of population depending on core town for their earnings is less than that depending on ‘other places’, of which other towns within the district draw maximum population. The explanation for this may be found in the fact that being situated on the National Highway 31, Talliguri is well-connected with the town Tufanganj in the east at a distance of 15km

(and with Koch Bihar in the west at 10 km). This linkage has played a role for a larger proportion of population to be engaged in service at Tufanganj town (as reflected in table 5.1) even if it is less distant from Koch Bihar.

While probing into the other selected hinterlands in Koch Bihar district, it has been noted that only 14% of working population serve the town of *Dinhata* from its immediate periphery (0-5 km distance zone) (ref. table 5.1); the town offers whole-time job to the working villagers ranging from 2-13% of the next distance-zone (5-10 km distance zone), and also provides seasonal employment to quite some population, for which they have to work both in their own soil and in the town.

Contrarily, people from places farther apart are drawn both for permanent and temporary livelihood to the town, though the proportions are low. Thus, the people from the immediate periphery are more dependent on the town for permanent employment while in terms of seasonal employment the distant villagers are more attracted by the town. The distance from the town affects the employment scenario of the hinterland villages in this indirect manner.

**PROPORTION OF VILLAGERS WORKING IN DINHATA TOWN:  
A DISTANCE-WISE DISTRIBUTION**

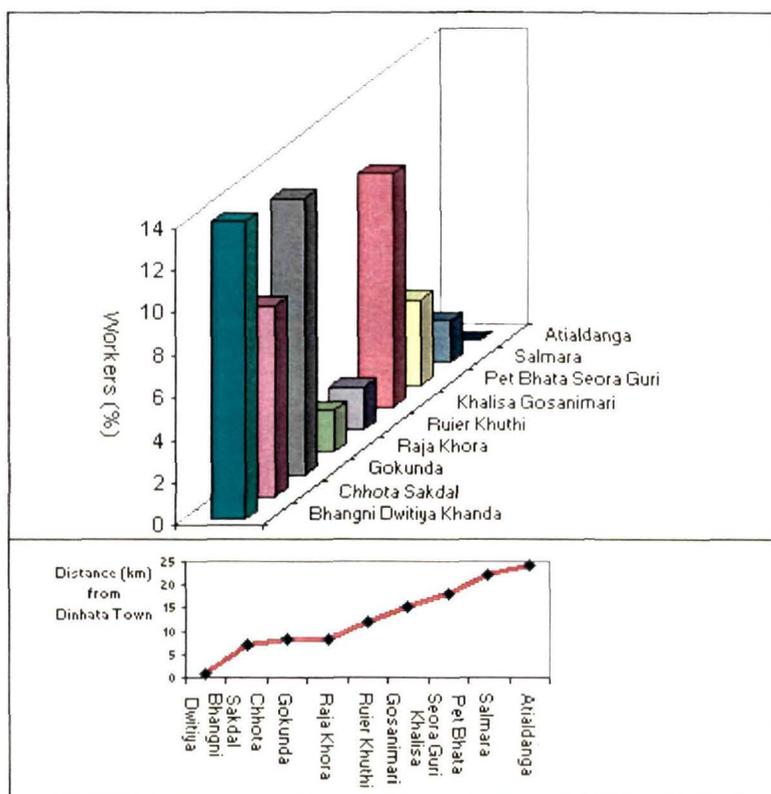


Fig. 5.2

It is striking to note that the people in the village of Khalisa Gosanimari (15 km.) are more engaged in the permanent job market of the town than the villagers of Raja Khora, RuierKhuthi which are less distant from the town. A better communication represented by greater bus frequencies between Khalisa Gosanimari and Dinhata can draw a larger number of people than even from its nearer villages.

The limit of urban job market extends up to 22 km. in Dinhata's periphery with the existing fluctuations in between. These pictures have become clear in table 5.1 and figure 5. 2

The interesting pattern that emerges surrounding the town of *Tufanganj* is that people from the closest periphery (0-5km) are less dependent on the town than that of the next distance zone (5-10 km) in terms of both permanent and seasonal employment; and from this zone (5-10 km) the trend of distance-decay of working persons in core town is visible (Ref. Table 5.1 and Figure 5. 3).

**PROPORTION OF VILLAGERS WORKING IN TUFANGANJ TOWN:  
A DISTANCE-WISE DISTRIBUTION**

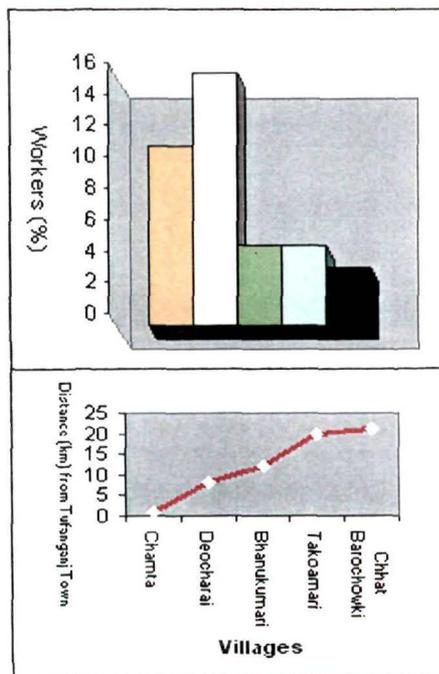


Fig. 5.3

Here it may be inferred that the adjacent villages of Tufanganj are to some extent more self sufficient in accommodating their own population in the job market than the villages situated in the next distance circle. In other words, the dependence of these neighbouring villagers for their livelihood is less on their nearest town than that of the comparatively distant villagers. This fact may be explained by the varied economic activities of these localities, reflected in the mixed occupational pattern of their inhabitants. Agriculture is not the mainstay of the inhabitants of this urban-adjacent rural habitat, viz., Chamta. Instead, there are varied sectors of employment which, supporting their sustenance, have made them less dependent on core towns at least for any occupation for livelihood. In Chamta, more than 70% of the working population is absorbed in Bidi-making, Weaving and Business. This phenomenon is termed by several scholars as 'residual sector hypothesis' which, for them, means that "the incapacity of agriculture to employ the growing labour force is forcing people to seek absorption in various low productive non-agricultural activities in rural areas or to migrate to urban areas"<sup>3</sup>(Kundu, 1992, p.23). In case of Dinhata and Tufanganj, people, instead of migrating to urban areas, prefer to stay in their villages, being absorbed by the rural residual sectors.

From a review of the intra-district situation of Koch Bihar, it appears that distance-decay is pronounced for the hinterland of Koch Bihar and it is less distinct in the hinterland of Dinhata and Tufanganj. Again, the town of Koch Bihar can support much more population from its hinterland (close and distant) than the other two towns (Dinhata, Tufanganj) by providing them with employment.

In the district of Jalpaiguri, the effect of distance-decay has almost been steadily represented by the percentage of villagers working in the towns of *Jalpaiguri* and *Alipurduar* from their peripheries (Table 5.1). In other words, people from the villages contiguous to these towns are much more dependent on their respective core towns for occupation and this dependence is diminishing with increasing distance from towns. But there are some exceptions. For example, the village Paharpur, being located at a distance of 9 km, sends lesser population (17.5%) for work to the town of Jalpaiguri than the more distant village Berubari Nagar (15km) wherefrom 23.5% of working population opt for the town as their place of occupation. Table 5.1 and also figure 5.4 make it clear. Actually a part of the village Paharpur is inhabited by tea-garden labours,

who are employed in the nearby Denguajhar Tea Garden, which is a reason for the lesser dependence of its population on the town for sustenance.

**PROPORTION OF VILLAGERS WORKING IN JALPAIGURI TOWN:  
A DISTANCE-WISE DISTRIBUTION**

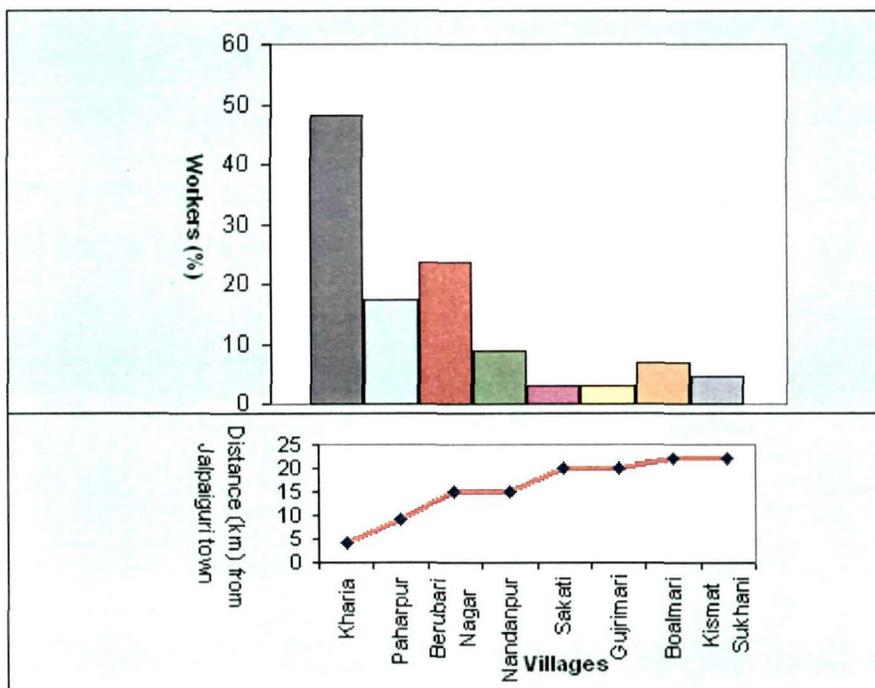


Fig. 5.4

Again, in case of Alipurduar, the village Silbari Hat, at a distance of 21km, is more dependent on the town of Alipurduar than the villages of Naottoartari and Dakshin Sonapur (13 km and 16km distant respectively) in terms of working population in the town. One may deduce that Paharpur in Jalpaiguri and Dakshin Sonapur in Alipurduar have better self sufficiency to absorb more people than that of the other villages that are far away from the towns. One explanation in respect of Silbari Hat may be that this village has got direct bus route connection with the town of Alipurduar, while Naottoartari not only does not have that privilege but also the commutation from this village to Alipurduar town takes a longer time than from Silbari Hat, even if the former one is less distant than the latter. This is how distance-decay gets slightly distorted due to the nature of transport linkage between the village and the core town. The picture of the working population of the hinterland villages of Alipurduar can be obtained from table 5.1 and figure 5.5

**PROPORTION OF VILLAGERS WORKING IN ALIPUDUAR TOWN:  
A DISTANCE-WISE DISTRIBUTION**

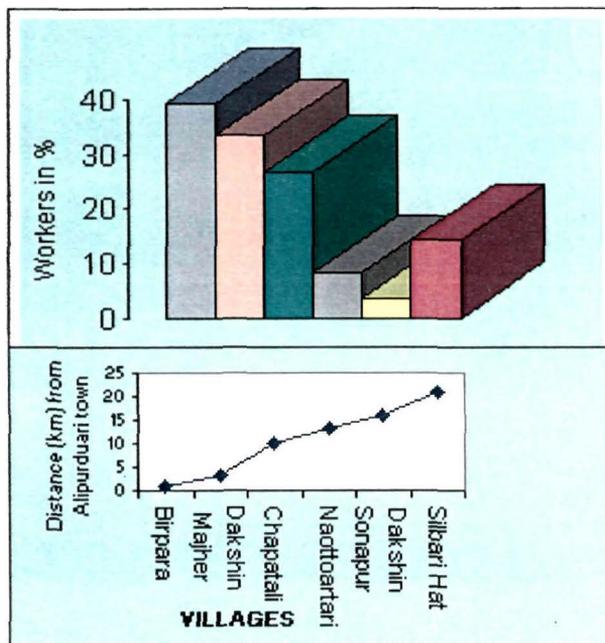


Figure 5.5

An inter-district comparison reveals that the two selected urban centres in the district of Jalpaiguri have drawn more people from their hinterlands than the selected towns of Koch Bihar district.

Along with agriculture, business, service and few informal activities (e.g., rickshaw pulling) dominate the occupational scenario of these people, which indicates their obvious dependence on towns. The question of 'residual sector' is not a prominent feature of them as the varieties of informal sector pursuits are less developed here as compared to the hinterlands of Dinhata and Tufanganj.

To evaluate the distance-decay effect on the occupational commuting of the village working population, the method of product moment correlation ('r') has been computed which is shown in the table 5.2

It is clear from the table that the hypothesis (no. 2b in 'Introduction') of inverse relation between the distance of the villages from their nearest town and the proportion of villagers deriving benefits of urban services has been proved for all the peripheries of the selected urban centres in terms of employment in urban areas. The said correlations are significant for all the cases except for the hinterland of Tufanganj.

Table:5.2 Results of Correlation Analysis between the Proportions of Villagers working in Core (Nearest) Town and the Distance of Hinterland Villages from Core Town

Hinterland Villages of Core towns of	Correlation coefficients ('r') for Distance and Proportions of Villagers working in Core Town
Koch Bihar	-.737**
Dinhata	-.689*
Tufanganj	-.748
Jalpaiguri	-.884**
Alipurduar	-.850*
Koch Bihar District (Combined)	-.580**
Jalpaiguri District (Combined)	-.864**
Koch Bihar and Jalpaiguri Districts (Combined)	-.657**

Note: \*\* Significant at .01 level of significance  
 \* Significant at .05 level of significance

Computed

Being the district towns, Koch Bihar and Jalpaiguri are much more important than Dinhata and Tufanganj from the demographic and the socioeconomic standpoints. Alipurduar is larger in population size than Dinhata and Tufanganj. Hence, the factor of importance of towns has a bearing on the process of attracting people from their rural neighbourhoods, and, the inference may be drawn that the more important an urban star is, the greater is its capacity to draw people from neighbouring rural planetarium. Thus, distance-decay is well defined in case of these important towns. The extent of relationship for all these three towns is very high, while it is moderately high for the surroundings of Dinhata.

Thus, as revealed by the present survey, the inter-district comparison suggests that the distance-decay relationship of the population working in the core towns is much stronger in Jalpaiguri district than in Koch Bihar district as a whole.

### 5. 3.ii.b Employment Pattern

The diversities in the occupational structure of the rural people working in core towns have been studied to find out the predominant types of their occupation. Here the occupational pattern has been categorised as follows:

1. Service 2. Business 3. Labour (specifying Non Agricultural Labour) 4. Small Business (including Vending, Tailoring, Barber etc) 5. Minor Engineering (Cycle Mechanic, Mason, Fitter) 6. Minor Manufacturing (Potter, Goldsmith, Blacksmith, Carpenter, Bidi Maker) 7. Transport (Rickshaw/ Van Pulling) 8. Pension Holder

The occupational identification of the rural workers serving Koch Bihar town, shown in Table 5.3, highlights the fact that people from different villages of Koch Bihar urban field have been associated with varieties of employment in the town which include formal and informal services. The formal sector is represented by the tertiary sector in the present context which, witnessing service and business, is the major employer both in the contiguous and the remote villages. Moreover, the villages with relatively smaller percentage of occupational commuters (e.g., Nageswarguri, Sajherpar Ghoramara, Chhat Singimari, Kaljani, Nawabganj Balasi, Talliguri, and Baneswar) to Koch Bihar show larger dependence on service and business. For example, 4.55% and 5% of the working population (ref. Table 5.1) commuting respectively from Nageswarguri and Sajherpar Ghoramara are exclusively dependent (ref. Table 5.3) on the service sector in Koch Bihar town. Again, the ratio of working persons serving the town of Koch Bihar from Chhat Singimari, Nawabganj Balasi, Kaljani and Talliguri are respectively 2.33%, 3.85%, 7.61% and 10% (ref. Table 5.1) while their corresponding ratios of dependents on either business or service or on both are 100%, 71.5%, 75% and 50% (ref. Table 5.3). 83% commuting workers of Baneswar earn their livelihood from services in Koch Bihar.

Between the two, employment in various other services is more than that in business, except for the villages of Nawabganj Balasi, Barapak, Chhat Singimari, wherefrom a larger proportion of occupational commuters are involved in business in the town. The wide range of services in the town engaging rural workers is as follows:

a) as employees in the Koch Bihar bar Library b) as storekeeper in Polytechnic College c) as conductors of NBSTC (Govt.-owned) and private buses d) as clerks and peons in Koch Bihar colleges e) as workers in the FCI godown f) as home guards g) as clerks and scribe (muhury) in the Koch Bihar court h) as priests in the MadanMohan Temple etc. The presence of a minor proportion of pension-holders dependent on Koch Bihar in three of the near-by villages suggest that these people were also involved in services

in the town. Business as a means of livelihood includes sellers of agricultural products (vegetables, grains, fish, milk, egg etc.), contractors, cloth merchants etc

Apart from the services in the formal sectors, the informal sector shows a substantial grip on occupation, comprising broadly non-agricultural labour, rickshaw or van pulling, minor manufacturing, minor engineering and small business. The labourers who come to Koch Bihar for their jobs have no fixed or permanent pursuits and as such they are engaged in any type of non-agricultural work depending on the demand of the market. It is interesting to note that 50% of the total working commuters of Barapak, situated at a distance of 20 km are employed as labour, while it is 25% and 17% from Talliguri and Baneswar respectively falling within 10-15 km distance zone. Thus, for drawing rural labour distance from town has not played any role. At the same time, rickshaw or van pulling happens to be a vital segment of informal occupation of the commuters in Koch Bihar. These people come mainly from villages in close proximity to the town, viz. Ghughumari, Takagach and also from villages that are at a moderate distance e.g., Talliguri and Nawabganj Balasi (10 and 15 km respectively), but with good road connections with the town. Besides, some rural folks find jobs as carpenters, masons, cycle-mechanics, tailors, domestic hands and vendors including hawkers, nut-sellers, and fuchka-sellers in Koch Bihar. The services of these people, though informal, are very essential for the urbanites.

In general, the occupational varieties have become limited along with the increasing distance from Koch Bihar town and the urban informal sector is offering jobs more to the people living in adjacent villages than to those from the remote hinterland. This may be distinctly understood from table 5.3.

On the basis of the data obtained, the occupational structure of the rural workers in Dinhata town table 5.3 does not show much varieties; and, similar to the hinterland of Koch Bihar, varieties have lessened in the far-off villages. These rural workers seeking occupation in towns also depend on services and business to a large extent. The town receives labour from the adjoining villages and following the general pattern, the rickshaw and the van pullers also come from those places too.

The employment diversification is prominent in the town of Tufanganj (ref. table 5.3) for the rural citizens coming from the closest periphery (Chamta). Unlike the other two hinterlands (discussed earlier), less people are engaged in town services from

this particular village. Rather, they opt for business, labour and rickshaw or van pulling. The jobs of Bidi making and weaving are the specialities here. On the other hand, service, i.e., jobs in various offices, becomes the mainstay for the rural commuters from more distant villages.

Identical to the other urban fields discussed previously, the diversities become limited for the rural inhabitants approaching from far-away areas and thus their dependence on town service sector is more prominent.

In comparison, the town of Jalpaiguri draws people from its peripheral village, Kharia to be engaged in diversified occupation as observed in the table 5.3. The occupational diversities decline with increasing distance from the town, the trend which is common to the other towns already studied. But this particular district town differs from the other district town (Koch Bihar) considered in the present study, in the sense that the urban informal sector happens to be the major employer of the rural commuters from adjoining villages, i.e. up to 9km while this is replaced by the formal sector for the villagers commuting from a distance of 15 km onward (Ref. table 5.3). Of course, the commonality between the two zones of hinterland in this regard is that the formal sector is monopolised by the town services, which means jobs in hospital, educational institutions and in different government offices.

The village Boalmari is an exception to this trend as it sends maximum proportion of rickshaw or van pullers (among the selected villages) to Jalpaiguri from a distance of 22 km; thus the informal sector predominates over the formal sector in providing employment opportunities contrary to the previous trends. It may be inferred that this particular village is suffering from lack of job opportunity which compels the commuters to accept any sort of occupation in the town.

Table 5.3 **Distribution of Rural Population (%) working at Core Town according to the Patterns of Occupation (surveyed population)**

CORE TOWNS	Villages	Distance From Core Town (Km)	Types of Occupation									
			Service	Business	Labour	Small Business (Vendor, Tailor)	Minor Engineering (Cycle mechanic, Mason)	Minor Manufacturing (Carpenter)	Rickshaw /Van Pulling	Pension Holder	Handicrafts (Weaving)	Others (Domestic Hands)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Koch Bihar	Takagach	4	40.82	16.32	10.2	8.16	10.2	4.1	6.12	4.08		
	Ghughumari	5	53.57	3.57	10.71				28.57	3.57		
	Chakchaka	10	54.35	32.61		2.17			4.35	6.52		
	Nageswar Guri	10	100									
	Talliguri	10	50		25				25			
	Baneswar	11	83.33		16.67							
	Kaljani	12	42.86	28.57				28.57				
	Nawabganj Balasi	15	25	50					25			
	Dhumpur Balasi	17	None Works at Koch Bihar									
	Sajherpar Ghoramara	19	100									
	Barapak	20		50	50							
	Daharerpar	21	None Works at Koch Bihar									
Chatra Chekadara	21	None Works at Koch Bihar										
Chhat Singimari	25		100									
Dinbata	Bhangni DwitiyoKhando	1	42.86	14.29	28.57				14.29			
	ChhotaSakdal	7	27	35	27				11			
	Gokunda	8	28	55	10				7			
	Raja Khora	8			100							

	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	
	Khalisa Gosanimari	15	33.33	66.67									
	Ruier Khuthi	12	100										
	Pet Bhata Seora Guri	18	100										
	Shalmara	22	30	70									
	Atialdanga	24	No one works permanently at Dinhata										
Tufanganj	Chamta	1	7.14	35.71	21.43		7.14	7.14	14.3		7.14		
	Deocharai	8	42.86	35.71			14.29	7.14					
	Bhanukumari	12	50	16.67	33.33								
	Takoamari	20	100										
	Chhat Barochowki	21	100										
Jalpaiguri	Kharia	4	10.81	16.22	35.14	5.41		5.41	13.51		2.7	10.8	
	Paharpur	9		27.27	27.27			9.09	27.27			9.1	
	Berubari Nagar	15		100									
	Nandanpur	15	60		40								
	Sakati	20	100										
	Gujrimari	20	100										
	Boalmari	22	28.57	14.29				5.41	42.85				
	Kismat Sukhani	22	100										
Alipurdhar	Birpara	1	30.77	12.82	28.21			7.69	20.51				
	Dakshin Majher Dabri	3					25		75				
	Chapatali	10		16.67	58.33			25					
	Naottoartari	13	50						50				
	Dakshin Sonapur	16	100										
	Silbari Hat	21		66.67					33.33				

Source: Field Survey

Table 5.4 Percentage distribution of Rural Workers working at their Core (Nearest) Town according to their Levels of Income: A Distance-wise Analysis

CORE TOWNS (A)	Villages (Mouzas) (B)	J.L. No. (c)	Distance Zone (km) (D)	Distance (km) from Core Town (E)	LEVELS OF INCOME				
					<=1000 (F)	1001-3000 (G)	3001-5000 (H)	5001-12000 (I)	>12000 (J)
Koch Bihar	Takagach	134	0-5	4	10.20	46.94	20.41	18.37	4.08
	Ghughumari	131	0-5	5	14.29	42.86	10.71	10.71	21.43
	Chakchaka	107	5--10	10	2.17	30.43	21.74	10.87	34.78
	Nageswarguri	41	5--10	10		100			
	Talliguri	116	5--10	10	0	50	25	25	0
	Baneswar	33	10--15	11	0	16.67	66.67	16.67	0
	Kaljani	30	10--15	12	0	28.57	28.57	42.86	0
	Nawabganj Balasi	251	10--15	15	0	25	0	75	0
	Dhumpur Balasi	257	15--20	17	No One works at Koch Bihar				
	Sajherpar	3	15--20	19	0	0	66.67	33.33	0
	Barapak	258	15--20	20	0	100	0	0	0
	Daharerpar	261	20--25	21	No One works at Koch Bihar				
	Chatra Chekapdara	262	20--25	21	No One works at Koch Bihar				
	Chhat Singimari	6	20--25	25	0	100	0	0	0
Dinhat	Bhangni Dwitiyo Khanda	110	0--5	1	42.86	42.86	14.29		
	Chhota Sakdal	103	5--10	7	38	50	12		
	Gokunda	126	5--10	8	25	45	30		
	Raja Khora	29	5--10	8	100				

	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Ruier Khuthi	72	10--15	12				100	
	Khalisa Gosanimar	6	10---15	15				33.33	66.67
	Pet Bhata Seora Guri	81	15-20	18				100	
	Salmara	92	20-25	22				100	
	Atialdanga	220	20-25	24	No One works At Dinhata				
Tufanganj	Chamta	92	0—5	1	7.14	71.43	21.43	0	0
	Deocharai	89	5—10	8	0	42.86	21.43	14.29	21.43
	Bhanukumari	65	10—15	12	16.67	66.67	0	16.67	0
	Takoamari	25	15—20	20	0	0	100	0	0
	Chhat Barochowki	1	20—25	21	0	33.33	33.33	33.33	0
J a l p a l g u r i	Kharia	7	0---5	4	5.41	62.16	21.62	2.7	8.11
	Paharpur	6	5---10	9		36.36	54.55		9.09
	Berubari Nagar	19	10--15	15					100
	Nandanpur	26	10--15	15			20	80	
	Sakati	20	15--20	20					100
	Gujrimari	8	15--20	20				50	50
	Boalmari	10	20---25	22		57.14	28.57	14.29	
	Kismat Sukhani	29	20---25	22			100		
Alipurdhar	Birpara	45	0---5	1	30.77	58.97	0	10.26	0
	Dakshin Majher Dabri	55	0---5	3	0	25	0	75	0
	Chapatali	43	5---10	10	8.33	25	58.33	8.33	0
	Naottoartari	35	10--15	13	0	50	50	0	0
	Dakshin Sonapur	27	15--20	16	0	100	0	0	0
	Silbari Hat	19	20---25	21	0	33.33	66.67	0	0

Source: Field Survey

of these upper class commuters among all the villages and also within its own commuters. This village sends about 87% service holders and businessman (jointly) who, belonging to high collar jobs, have a capacity to earn more than Rs.12, 000/ per month. Ghughumari at a distance of 5 km. ranks second in holding the upper class commuters.

4) Along with the increasing distance from Koch Bihar, the greater dependence of the commuters on service and business has led to their sole concentration in the income group of Rs.1000/--3000/ per month. Of course, the village Sajherpar Ghoramara—19 km from Koch Bihar—consists of majority of the service-holders earning Rs.3000/-5000/ and some receiving Rs.5000/-12,000/ from the town.

5) The income structure of the rural commuters in the hinterland of Dinhatata shows that the majority of the commuting workers from the adjacent urban field, viz., Bhangni Dwitiya Khando belong to the lower and lower-middle income strata because about 43% of the commuters are engaged in the low-paid informal services; the situation is similar to that of the Koch Bihar urban field. Again, the rural businessmen in the town (14%) from this village fall in the earning range of Rs.3000/-5000/ per month. The rural habitats, situated within 10km of the town sends mostly low-paid commuters whose monthly income falls below Rs.3000/. Contrarily, the service and business offer more than Rs. 5000/ per month to the far-off commuters. The 67% commuting businessmen from Khalisa Gosanimari situated at a distance of 15 km constitute the higher income group.

The distance-decay of the rural commuters working in Dinhatata in the income-level of Rs. 1001-3000 has been significantly proved by the significant negative correlation ( $r$  is  $-.72$ ). (Appendix VI)

6) As a whole, the town of Tufanganj contributes low earnings (ranging between Rs.1000/ and 3000/) to the majority of its commuters (Ref. Table 5.4). Here, again, it is seen that 57% workers from the closest rural neighbour (Chamta) are pulled by the poorly paid urban informal sector (ref. Table 5.3), which has been reflected in their low levels of income. Further, the village Deocharai at 8km distance pushes 36% businessman to the town to earn more than Rs.12,000/ per month. These trends indicate commonality with the other adjoining urban fields (discussed earlier). Yet, the variation is represented by the village Bhanukumari at 12km. Because of the fact that 33% labour

are moving from Bhanukumari to Tufanganj, the proportion of the lowest earning commuters (17%) from this particular village exceeds that of the closest village.

The remote hinterland possesses moderately higher earning commuters who are basically servicemen in the concerned town.

7) In view of the economic condition of the commuting rural workers the urban fringe of Jalpaiguri has the following characteristics which have been depicted in table 5.4:

a) It is the peripheral village (Kharia) that alone sends the lowest earning population to the town who work in the informal sector. Unlike the others (discussed above), 8% people from this close fringe belong to the highest income group as they are engaged in the tertiary sector of the town. Moreover, there are some goldsmiths who come to the town for their business. This is how the income of the commuters has gone up. Otherwise, most of them belong to the lower middle strata in terms of income with an earning of Rs. 1001/ to 3000/ per month.

b) Generally, a section of commuters from the neighbouring villages as well as a substantial section from the moderately distant villages are relatively the richer section of employees earning more than Rs.12,000/ per month, which obviously is a special feature among all the urban fields. This is because of the preponderance of businessmen, goldsmiths and high-collar service holders in the commuting workers in some cases. For example, all the commuters from the village of Berubari Nagar are in the upper income group with their business pursuits. Again, the village Sakati sends 100% service holders, all of whom fall in this upper-most stratum.

Thus, it may be inferred that the town of Jalpaiguri can provide the highest level of economic condition to most of the rural workers coming from its hinterland as compared to that of the other selected urban centres.

8) The income structure of the rural population serving the town of Alipurduar, as revealed in table 5.4, is limited within the range of Rs.1000/ to 12,000/ per month except the existence of the lowest earning commuters in the adjacent village of Birpara and in Chapatali which is 10 km away from the town.

About 31% of the inhabitants of Birpara are provided with very low income by the low-type informal employment in the town. In this context, it may be pointed out that more than 56% of the commuting workers from this village are involved in the urban informal sector (ref. table 5.3). The shrinkage of occupational diversity along with the distance from the town has reduced the disparity in income distribution of the rural commuters. This urban field does not have any commuters belonging to the comparatively richer section.

### **5.3.iii Urban centres as the places of recreation for the rural population**

The cultural advancement of a region, promoted through its contact with other region, is indispensable to the mental refreshment of the people of both the areas. Hence, within a particular region the rural and the urban sectors profit through mutual cultural contact. Of course, the dependence is more from the side of the rural sector than the urban sector which is culturally more developed than the former.

Likewise, the 'urban' cultural diffusion has been taking place and has been transmitted by the five urban centres to their rural hinterlands selected in our present investigation. Here an attempt has been made to understand this cultural diffusion in the light of differences in distance from the towns. These towns are the centres of cultural entertainment for the villagers. Fairs, festivals, cinemas, cultural functions, sports and games, religious ceremonies etc. of the towns invite people from the hinterlands.

Table 5.5 illustrates the proportions of rural households from which members participate in different recreational activities in the towns. According to the extent of participation, the households have been categorised as members (a) participating frequently (b) participating occasionally and (c) do not participate in the urban recreational activities.

A generalised pattern of diminishing ratio of households frequently participating in urban recreational services with increasing distance from towns is prominently marked in the urban fields of Koch Bihar, Tufanganj and Jalpaiguri; but the ratio is only insignificant in the other two cases. Contrarily, the ratio of rural

Table: 5.5 Percentage Distribution of Rural Households availing of Recreational facilities from Core Town:  
A Distance-Wise Classification

Core Towns (A)	Villages (B)	Distance (km) from Core Town (C)	Distance Zone (km) (D)	Households (%) whose members commute to the core town for availing of Recreational Facilities		Households (%) not availing of recreation in the core town (G)
				Frequently (E)	Occasionally (F)	
KOCH BIHAR	Takagach	4	0-5	84.7	12.9	2.4
	Ghughumari	5	0-5	56	35	9
	Chakchaka	10	5--10	75	25	0
	Nageswarguri	10	5--10	27.3	63.6	9.1
	Talliguri	10	5--10	72	20	8
	Baneswar	11	10--15	82.5	17.5	0
	Kaljani	12	10--15	49	50	1
	Nawabganj Balasi	15	10--15	31	56	13
	Dhumpur Balasi	17	15--20	16.7	66.7	16.7
	Sajherpar Ghoramara	19	15--20	34.2	63.4	2.4
	Barapak	20	15--20	9	91	0
	Daharerpar	21	20--25	17	83	0
	Chatra Chekapdara	21	20--25	0	40	60
Chhat Singimari	25	20--25	22	26	52	
D i n h a t a	Bhangni DwitiyoKhanda	1	0-5	43	35	22
	Chhota Sakdal	7	5---10	54	31	15
	Gokunda	8	5--10	30	60	10
	Raja Khora	8	5---10	50	50	0
	Ruier Khuthi	12	10---15	44	36	20

	(B)	(C)	(D)	(E)	(F)	(G)
	Khalisa Gosanimari	15	10--15	26	30	44
	Pet Bhata Seora Guri	18	15-20	30	70	0
	Salmara	22	20-25	38	29	33
	Atialdanga	24	20-25	20	33	47
Tufanganj	Chamta	1	0--5	87	13	0
	Deocharai	8	5--10	55	35	10
	Bhanukumari	12	10--15	35	23	42
	Takoamari	20	15--20	32	27	41
	Chhat Barochowki	21	20--25	23	33	44
Jalpaiguri	Kharia	4	0--5	81.08	13.51	5.41
	Paharpur	9	5--10	70	23	7
	Berubari Nagar	15	10--15	63	25	12
	Nandanpur	15	10--15	53	47	0
	Sakati	20	15--20	10	55	35
	Gujrimari	20	15--20	41	18	41
	Boalmari	22	20--25	25.4	31.7	42.9
	Kismat Sukhani	22	20--25	41.2	41.2	17.6
Alipurduar	Birpara	1	0--5	80	19	1
	Dakshin Majher Dabri	3	0--5	64	29	7
	Chapatali	10	5--10	100	0	0
	Naottoartari	13	10--15	23	46	31
	Dakshin Sonapur	16	15--20	20	33	47
	Silbari Hat	21	20--25	18	54	18

Source: Field Survey

occasional commuters and non-commuters for participating in urban recreational activities has accentuated with distance. Essentially, occasional commuters join the annual or bi-annual religious festivals and ceremonies of different communities, such as Rashmela (in case of Koch Bihar) and Puja, Id, Muharam etc, while the frequent commuters of adjacent rural habitats are inclined to see cinemas and attend other regularly occurring cultural programmes in the towns, in addition to their association with the general annual ceremonies. Our observation discloses that the Rashmela of the town of Koch Bihar has got a great pull to attract rural mass from the farthest hinterland of the respective town and quite a large number of people from the hinterland of the other towns (studied here) as well.

Of course, there are some irregularities which are observed in the catchment areas of Dinhata, Jalpaiguri and Alipurduar, where people of fewer households from the closest peripheries come frequently for urban entertainment than those from the villages of the next distance circle. The spill-over of certain urban recreational facilities to these immediate hinterlands is a reason for this curbing of commuting ratios of their residents to the towns for the said purpose in contrast to the people of the next peripheries.

The association between distance from the core towns and the proportion of households sending recreational commuters as portrayed by table 5.6 explains the significant correlation exists in the hinterlands of Koch Bihar, Tufanganj and Jalpaiguri in the cases of frequent recreational commuters from rural areas. The district of Koch Bihar shows a stronger association than the Jalpaiguri district. Thus, the hypothesis (no. 2b in 'Introduction') of inverse relation between the distance of the villages from their nearest town and the proportion of villagers deriving benefits of urban services has been proved significantly in view of urban recreational activities, for the peripheries of Koch Bihar, Tufanganj and Jalpaiguri and for the two districts considered separately and also for the two taken together.

### 5.3.iv Urban centres as the places of Social Contacts for the rural people

There are certain purposes for which villagers commute to towns, which are not classified as urban services but still the existence of a town generates them. Our observation could identify two types of such purposes that are broadly categorised as 'Social Contacts'.

Table: 5.6 Results of Correlation ('r') between the Proportions of Rural Households availing of Urban Recreational activities and the Distance of Rural settlements from the Core (Nearest) Town

Hinterland Villages of Core towns of	'r' for distance and Proportions of Rural households availing of recreational activities from Core towns---	
	Frequently	Occasionally
Koch Bihar	-.797**	.505
Dinhata	-.640	-.083
Tufanganj	-.942*	.603
Jalpaiguri	--.861**	.546
Alipurduar	-.727	.589
Koch Bihar District (Combined)	-.726**	.331
Jalpaiguri District (Combined)	-.744**	.546*
Koch Bihar and Jalpaiguri Districts (Combined)	-.719**	.373*

Note: \*\*Significant at .01 level of significance  
\* Significant at .05 level of significance

Computed

Many of the urbanites with their rural origin happen to be the relatives of the rural people. Thus it is a natural phenomenon that villagers come to the towns to have a get together with them either regularly or occasionally. Again, when political groups organise meetings and conventions in urban areas with the intention to draw large masses from different areas, rural people move to towns; but whether they are politically motivated or not does not form any part of consideration in regard to their movement.

Against the general hypothesised distance-decay process of proportions of households whose members commute to the towns for meeting relatives, no definite

Table: 5.7 Percentage Distribution of Rural Households with members having Social contacts with Core Towns: A Distance-Wise Classification

CORE TOWNS	Villages	Distance Zone (km)	Distance (km) from Core Town	Households (%) whose members commute to the core town for social contacts	
				Meeting Relatives	Attending Political Meeting
Koch Bihar	Takagach	0-5	4	51.8	22.4
	Ghughumari	0-5	5	62	27.3
	Chakchaka	5--10	10	71	38
	Nageswarguri	5--10	10	18	9
	Talliguri	5--10	10	68	20
	Baneswar	10--15	11	82.5	5
	Kaljani	10--15	12	43.6	15.4
	Nawabganj Balasi	10--15	15	55.8	50
	Dhumpur Balasi	15--20	17	50	0
	Sajherpar Ghoramara	15--20	19	12	78
	Barapak	15--20	20	63.6	27.3
	Daharerpar	20--25	21	0	50
	Chatra Chekapdara	20--25	21	20	0
Chhat Singimari	20--25	25	39	21.7	
D i n h a t a	BhangniDwitiyoKhanda	0--5	1	47	52
	Chhota Sakdal	5--10	7	46.2	38.5
	Gokunda	5---10	8	100	30
	Raja Khora	5---10	8	0	80
	Ruier Khuthi	10--15	12	42.00	54.00
	KhalisaGosanimari	10---15	15	48	52
	Pet Bhata Seora Guri	15-20	18	20	40
	Salmara	20-25	22	28.57	4.76
	Atialdanga	20-25	24	33.3	100
Tufanganj	Chamta	0—5	1	43.33	25.00
	Deocharai	5—10	8	47	38
	Bhanukumari	10—15	12	37.25	17.65
	Takoamari	15—20	20	38.24	32.35
	Chhat Barochowki	20—25	21	20.29	33.33
J a l p a I g u r i	Kharia	0---5	4	46	38.64
	Paharpur	5---10	9	44.19	34.88
	Berubari Nagar	10--15	15	62.50	37.50
	Nandanpur	10--15	15	10.00	60.00
	Sakati	15--20	20	45	60
	Gujrimari	15--20	20	32	29.55
	Boalmari	20---25	22	27	55.56
	Kismat Sukhani	20---25	22	29.41	35.29
Alipurduar	Birpara	0---5	1	24.29	1.43
	Dakshin Majher Dabri	0---5	3	42.86	64.29
	Chapatali	5---10	10	40.74	0
	Naottoartari	10---15	13	30.77	23.08
	Dakshin Sonapur	15--20	16	26.67	33.33
	Silbari Hat	20---25	21	11.54	15.38

Source: Field Survey

declining trend has been marked for the concerned urban-hinterlands except in the hinterlands of Alipurduar and Tufanganj (table 5.7), where a steady decelerating tendency from the next zone of the closest periphery has been observed. In Tufanganj's hinterland the declining trend is not as sharp as that for Alipurduar.

Thus, the statistical relationship between distance and households sending members to the towns for meeting relatives does not have significance in any of the regions individually, but it shows significant relationship when the urban hinterlands of Koch Bihar district and of both the districts are considered together (Appendix VII). Of course, the correlations for both the cases are very low, i.e.,  $-.383^*$ ,  $-.344^*$  respectively.

To find out the reason for this anomaly, villagers' social contacts (with urban relatives) have also been correlated with the components of transport linkage, i.e, the frequency of buses, travel time and transport fare between the village and the nearest town. It is observed that transport fare and travel time have respectively moderate ( $-.466^{**}$ ) and low ( $-.384^*$ ) inverse correlation (significant) with the rural households involved in social contacts. (Appendix VII). Thus, in this case, the factor of distance has been disregarded partly by the factor of transport linkage. Hence, it may be inferred that regarding the social interaction with the nearest town, villagers consider transport linkage more important than the distance of their native places from the town.

But remoteness cannot limit the rural political commuters to the urban cores in the present cases. Instead, there are both indefinite and steady rising trends of those along with the distance. A distinct increasing pattern of this type of commuting has been witnessed in the hinterland of Jalpaiguri. The emergence of this peculiar pattern may be corroborated by majority of the villagers expressing interesting opinions to the effect that such movement is much more lucrative than if it were for economic and other reasons as this does not tax their own pockets but on the contrary brings them something in cash and also free food by the political leaders. So it is lucrative to roam about in the towns without incurring any cost especially for the remote villagers who cannot even think of going to towns for availing of urban benefits as that is beyond their economic capabilities. Thus as regards the political commuters, distance has no statistically significant role in determining their movements, while transport fare is a positive correlate of the villagers' movement for political reasons. (Appendix VII).

From the foregoing discussion of nature of different types of interaction associated with various urban benefits, it is clear that the hypothesis (no.2b) of inverse relation of distance with the proportions of rural households and rural population deriving benefits of urban services from their nearest towns has been proved significantly for economic and cultural interface; for social interaction the hypothesis has been proved partly for one case while for political interaction the hypothesis has been completely nullified.

#### **5.4 Intensity of Interaction**

*In order to evaluate the intensity of the process of interaction, the incidence or frequency of commuting of the villagers to the towns has been assessed. As the frequency varies with distance from the core towns, the surveyed households have been classified according to the frequencies of commuting of their members in the light of the distance of the villages from their core towns. (Ref. Table 5.8) The frequency of the commuters may be analysed in relation to distance of the native villages from their core towns, their purposes of commuting, their family income structure, family occupation and education level of the head of the households.*

Considering the question of distance, it has been perceived that the villagers of the adjacent communities commute more frequently than the distant villagers in order to satisfy their various needs from the towns. Therefore, the proportions of daily commuters are more from the neighbouring villages than from the remote villages. Again, an adjacent village (individually) has larger proportions of households with daily commuters than the households with less frequent commuters. In fact, as the problem of distance restricts even the villagers' thought of satisfying their necessities from the core towns, the frequencies of their mobility to towns become reduced. This pattern has emerged in the case of all the hinterlands of the selected towns.

To explain the intensity more explicitly, the households with daily commuters were queried about the number of times they travel to towns. It is observed that quite a substantial proportion of the households consisting of members who commute more than once a day are from the fringe habitats; this class of commuters is practically absent from the distant villages. For example, while half (50%) of the households from

Table: 5.8

**Percentage Distribution of Rural Households according to the Commuting frequency of members to Core Town: A Distance-wise Classification**

Core Towns (A)	Villages (B)	Distance (km) from Core Town (C)	Commuting Daily		Commuting per Week			Commuting per Month		Commuting per year			Non- Commuters (N)
			Daily More than Once (D)	Daily Once (E)	4 days/ week (F)	Bi- Weekly (G)	Weekly once (H)	Fortnightly (I)	Monthl y once (J)	3 Monthly (K)	6 Monthly (L)	Annually (M)	
Koch Bihar	Takagach	4	42.35	47.06	5.88	2.35	2.35						
	Ghughumari	5	13.64	31.82	16.67	12.12	21.2	4.55					
	Chakchaka	10	7.24	66.67	4.35	10.14	11.6						
	Nageswarguri	10	0	9	9.1	9.1	18.2	9.1	0	18.2	18.2	0	9.1
	Talliguri	10	4	36	4	12	20	16	8				
	Baneswar	11	0	22.5	7.5	10	32.5	7.5	15	5			
	Kaljani	12	3.85	17.95	10.26	11.54	15.38	10.26	15.38	15.38			
	Nawabganj Balasi	15	0	9.62	15.38	25	5.77	15.38	15.38	3.85	5.77	3.85	
	Dhumpur Balasi	17	0	0	0	0	16.67	16.67	16.67	33.33	8.33	0	8.33
	Sajherpar Ghoramara	19	0	19.51	0	7.32	12.2	19.51	12.2	17.07	9.75	2.44	0
	Barapak	20	0	18.2	0	18.2	9	18.2	0	18.2	18.2		
	Daharerpar	21	0	0	0	16.67	16.67	16.67	0	16.66	33.33		
Chatra Chekapdara	21	0	0	0	20	0	20	0	20	40	0		
Chhat Singimari	25	0	4.34	13.04	8.7	21.74	17.4	13.04	13.04	4.35	4.35	13	
Dinhatata	Bhangni Dwitiyo Khanda	1	3.3	35.0	11.7	10.0	13.3	18.3	8.3				
	Chhota Sakdal	7	0.0	53.8	15.4	15.4	7.7	7.7					
	Gokunda	8	10.0	40.0	20.0	10.0	10.0	0.0	0.0	10.0			
	Raja Khora	8	0.0	0.0	6.7	0.0	6.7	20.0	13.3	0.0	46.7	6.7	
	Ruier Khuthi	12	2.0	12.0	4.0	16.0	14.0	20.0	22.0	10.0			

	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)
	Khalisa Gosanimari	15	0.0	8.7	17.4	13.0	4.3	8.7	17.4	13.0	17.4		
	Pet Bhata Seora Guri	18	0.0	10.0	0.0	10.0	50.0	20.0	0.0	10.0	0.0		
	Salmara	22	0.0	19.0	4.8	0.0	4.8	0.0	14.3	9.5	4.8	19.0	23.8
	Atialdanga	24	0.0	0.0	6.7	0.0	6.7	20.0	13.3	0.0	46.7	6.7	
Tutanganj	Chamta	1	10.0	56.7	6.7	23.3	1.7	1.7					
	Deocharai	8	1.7	18.3	10.0	10.0	18.3	26.7	6.7	6.7	1.7		
	Bhanukumari	12	0.0	12.7	0.0	3.9	30.4	22.5	2.9	4.9	8.8	4.9	8.8
	Takoamari	20	0.0	2.9	0.0	2.9	11.8	41.2	11.8	8.8	5.9	14.7	0.0
	Chhat Barochowki	21	0.0	11.6	0.0	1.4	10.1	27.5	5.8	5.8	8.7	15.9	13.0
Jalpaiguri	Kharia	4	50.0	38.6	6.8	0.0	0.0	0.0	4.5				
	Paharpur	9	9.3	60.5	4.7	9.3	11.6	0.0	4.7				
	Berubari Nagar	15	0.0	62.5	12.5	0.0	12.5	0.0	12.5	0.0	0.0	0.0	
	Nandanpur	15	0.0	17.5	2.5	0.0	2.5	2.5	35.0	40.0			
	Sakati	20	0.0	30.0	10.0	10.0	15.0	10.0	5.0	10.0	10.0	0.0	
	Gujrimari	20	0.00	4.55	2.27	2.27	4.55	13.64	29.55	40.91	2.27	0.00	
	Boalmari	22	0.0	11	1.6	4.8	4.8	3.2	14.3	33.3	11	8	8
	Kismat Sukhani	22	0.0	5.9	0.0	0.0	5.9	0.0	35.3	35.3	17.6	0.0	
Alipurduar	Birpara	1	12.9	51.4	1.4	28.6	4.3	0.0	1.4	0.0	0.0	0.0	
	Dakshin Majher Dabri	3	35.7	42.9	7.1	7.1	7.1	0.0	0.0	0.0	0.0	0.0	
	Chapatali	10	29.6	70.4									
	Naottoar Tari	13	0.0	0.0	0.0	7.7	23.1	30.8	23.1	0.0	7.7	7.7	
	Dakshin Sonapur	16	6.7	6.7	0.0	0.0	0.0	33.3	26.7	20.0	0.0	6.7	
	Silbari Hat	21	0.0	30.8	0.0	7.7	7.7	15.4	7.7	7.7	15.4	7.7	

Source: Field Survey

the closest village (Kharia) of Jalpaiguri and more than 42% of the households from the adjacent village (Takagach) of Koch Bihar belong to this category, their presence is not found in the hinterlands of the two towns beyond 9km and 12 km respectively. The distance limit of drawing households with 'daily commuters of more than once' category shows more or less uniformity, i.e., it is 12km in Koch Bihar and Dinhata, 8km in Tufanganj, 9 km in Jalpaiguri, except in Alipurduar, where it is 16km. This exception is a story of a single household (6.7%) (as has been found from our raw data) whose members commute more than once a day to Alipurduar town to obtain certain urban benefits. The head of that particular household, holding an M.B.B.S. degree from Kolkata, serves both his native place and the core town (ref. Table 5.1) with an earning of Rs.8000/ per month (ref. Table 5.4) and he sends his children to the town for both regular and private education (ref. table 4.5), allows his family members to avail of the benefits of recreational activities from the town frequently (ref. table 5.5) and therewith have an exposure to a greater touch of urban culture. Naturally, the members of this rural family of Dakshin Sonapur need to commute to the town as frequently as more than once a day, disregarding the remoteness of their native place from the core town. It is here that the higher level of education of the head has an obvious impact over the family to have higher aspiration to be fulfilled by the urban centre. Of course, a good communication provided by pucca road and frequent bus services with the town has become favourable in this regard. Thus, a combination of factors can explain the emergence of such a peculiar pattern.

The limit of daily commuters is maximum (25 km.) in Koch Bihar's urban field, while it is 21-22km in the other regions. The fact that the village Chhat Singimari, being privileged by its bus route and metalled road connection with Koch Bihar town at a distance of 25 km, has 'regular' educational interaction (4.35% households) with the town (ref. Table 4.5), explains the spatial movement of population as daily commuters (4.35%) to the town.

Among the remote villages, the highest percentage of daily commuters (30.8%) is strikingly found from Silbari Hat, which is 21 km far from the town of Alipurduar. This rural centre has got metalled road connection with the town; and from this village more than 14% rural working population is engaged in urban service and business sector (ref. table 5.3). Moreover, students from 8% households come to receive 'regular' education at the town (ref. Table 4.5), 8% of the families get 'all' items from

the town markets (ref. Table 4.8), and 18% of the householders are the frequent recreational commuters (Table 5.5). All these factors count for the sizeable proportion of daily commuters to the town.

In some regions, the tendency of daily commuting is less from the immediate peripheries than from the subsequent distance zones. For instance, all (100%) commuters of Chapatali, 10km from Alipurduar, belong to the category of daily commuters, whereas both Birpara and Dakshin Majher Dabri send much lesser (64% and 78% respectively) daily commuters to the town in spite of living at a distance of only a kilometre from the same town. In fact, Chapatali is the only village in our investigation which has the largest proportion of daily commuters. Again, the same reverse trend of lesser and larger daily commuters (respectively) has been noticed corresponding to Bhangni Dwitiyo Khanda (1km from Dinhata) on the one hand and Chhota Sakdal and Gokunda (7km and 8km respectively) on the other. From our first-hand experience, it may be inferred that the villages of Birpara in Alipurduar and Bhangni DwitiyoKhanda in Dinhata are more or less self-contained, as many of the urban benefits have trickled down to these proximate localities. This phenomenon can stop the villagers' movement to some extent. Conversely, Chapatali with lesser self-sufficiency and greater connectivity with the town cannot retain much of its residents.

Considering the flow of weekly commuters, the distance limit is the remotest hinterland of all the urban centres. The villagers, for their native business places or for working as casual part-time labour, and for any administrative work and bi-weekly or tri-weekly shopping of necessary items, and frequent recreational activities or for meeting relatives commute 4-5 days a week or twice a week or every week to the server towns. The rural employees in the towns and the village students attending the towns' educational institutes do not belong to these categories as the primary intention of the majority of the daily commuters happens to be, expectedly, occupation in the towns and obtaining educational services (regular and private) from the towns. The people, who come for regular medical check-ups in the towns and intend to meet their urban relatives, tend to commute fortnightly or monthly or three monthly. Again, people moving bi-annually or annually are found to travel for occasional recreational activities and for attending religious functions, such as Puja, Rashmela, Id, Muharam etc. which take place annually or bi-annually. But frequencies of commuting cannot be specified according to the specific purposes as villagers tend to meet many of their requirements

together whenever they move for any specific purpose. Chatterjee, while delineating the tributaries of towns in this context (Chatterjee, 1973, p.93), observes that “rural population combines shopping and recreation with visits to offices”<sup>5</sup>

The hinterlands that exhibit significant correlation between distance and frequency of commuting have been depicted in table 5.9.

The hypothesised negative correlation of distance and daily commuting (both for ‘daily more than once’ and ‘daily once’ categories) to towns has been confirmed almost for all the regions. The extent of correlation is moderate to high in this case. On the contrary, the process of commuting with lesser frequencies at the other end shows the expected positive association with the distance from towns.

**Table 5.9 Results of Correlation Analysis between the Proportions of Rural Households with members of different Commuting Frequencies and the Distance of Hinterland Villages from the Core (Nearest) Town**

Villages of	'r' Values between Distance and Rural households with members commuting to towns								
	Daily More than once	Daily once	4 days/ week	Bi-Weekly	Fortnightly	Monthly	3- Monthly	6- Monthly	Yearly
Koch Bihar	-.717**	-.743**			.866**		.670**	.606*	
Tufanganj				-.918*					
Jalpaiguri	-.608*	-.741**					.758**	.765**	
Alipurduar									.858*
Koch Bihar District (Combined)	-.544**	-.707**	-.393*		.475**		.536**	.435*	.485**
Jalpaiguri District (Combined)	-.658**	-.679**					.498*	.743**	.715**
Koch Bihar and Jalpaiguri Districts (Combined)	-.546**	-.647**	-.400**	-.308*		.368*	.531**	.444**	.646**

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Among the hinterlands (individually), Koch Bihar’s hinterland has got the largest cases of significant association between the mentioned indicators, followed by that of Jalpaiguri. Both these regions show significant relationship for daily commuting, which is not observed in the case of the other two towns. (The hinterland

of Dinahata has been excluded from the individual list as it does not show any significant relationship. The process of bi-weekly commuting responds inversely to the distance from Tufanganj town.

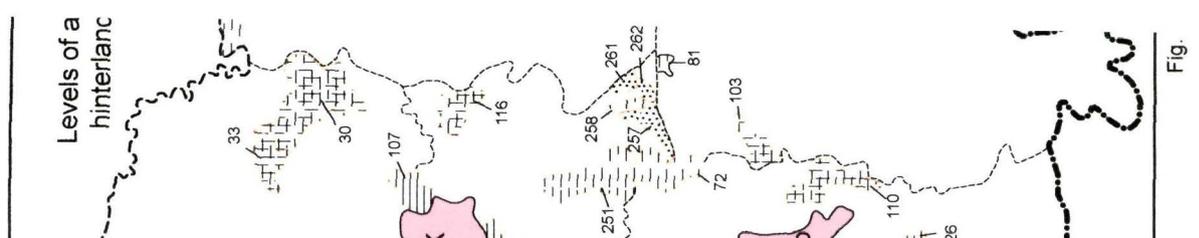
Among the two districts, the urban-hinterlands of Koch Bihar district top the list. Of course, compared to the other patterns of commuting, daily commuting is much more affected by distance in both the districts. The behaviour of less recurrent commuting (i.e., three-monthly, six-monthly, yearly) is also found to have the direct correlation with distance.

To have a comprehensive picture, the levels of commuting frequencies has been expressed in terms of daily frequencies which have been multiplied by the number of households of each classes and then an average value of frequencies have been worked out for each village. (The formula for calculating the average frequency of commuting has been given in the 'Methodology' section of the 'Introduction'). Table 5.10 shows a distance-wise classification of the average commuting frequencies.

Table: 5.10 Villages with Average commuting frequency of the household-members to the respective Core Town: A Distance-wise Classification

Core Towns	Villages	Distance (km) from Core Town	Distance Zone (km)	Average Commuting Frequencies
Koch Bihar	Takagach	4	0-5	1.36
	Ghughumari	5	0-5	.75
	Chakchaka	10	5--10	.88
	Nageswarguri	10	5--10	.20
	Talliguri	10	5--10	.54
	Baneswar	11	10--15	.35
	Kaljani	12	10--15	.38
	Nawabganj Balasi	15	10--15	.28
	Dhumpur Balasi	17	15--20	.04
	Sajherpar Ghoramara	19	15--20	.25
	Barapak	20	15--20	.26
	Daharerpar	21	20--25	.09
	Chatra Chekapdara	21	20--25	.07
	Chhat Singimari	25	20--25	.19
Dinhatata	BhangniDwitiyoKhanda	1	0-5	.55
	Chhota Sakdal	7	5---10	.68
	Gokunda	8	5--10	.76
	Raja Khora	8	5---10	.25
	Ruier Khuthi	12	10---15	.27
	KhalisaGosanimari	15	10--15	.68
	Pet Bhata Seora Guri	18	15-20	.21
	Salmara	22	20-25	.23
Atialdanga	24	20-25	.07	
Tufanganj	Chamta	1	0---5	.87
	Deocharai	8	5---10	.35
	Bhanukumari	12	10—15	.20
	Takoamari	20	15—20	.09
	Chhat Barochowki	21	20—25	.17
Jalpaiguri	Kharia	4	0---5	1.43
	Paharpur	9	5---10	.86
	Berubari Nagar	15	10--15	.72
	Nandanpur	15	10--15	.21
	Sakati	20	15--20	.42
	Gujrimari	20	15--20	.10
	Boalmari	22	20---25	.15
	Kismat Sukhani	22	20---25	.10
Alipurduar	Birpara	1	0---5	.87
	DakshinMajherdabri	3	0---5	1.21
	Chapatali	10	5---10	1.30
	Naottoar Tari	13	10--15	.08
	Dakshin Sonapur	16	15--20	.23
	Silbari Hat	21	20---25	.36

Source: Field Survey



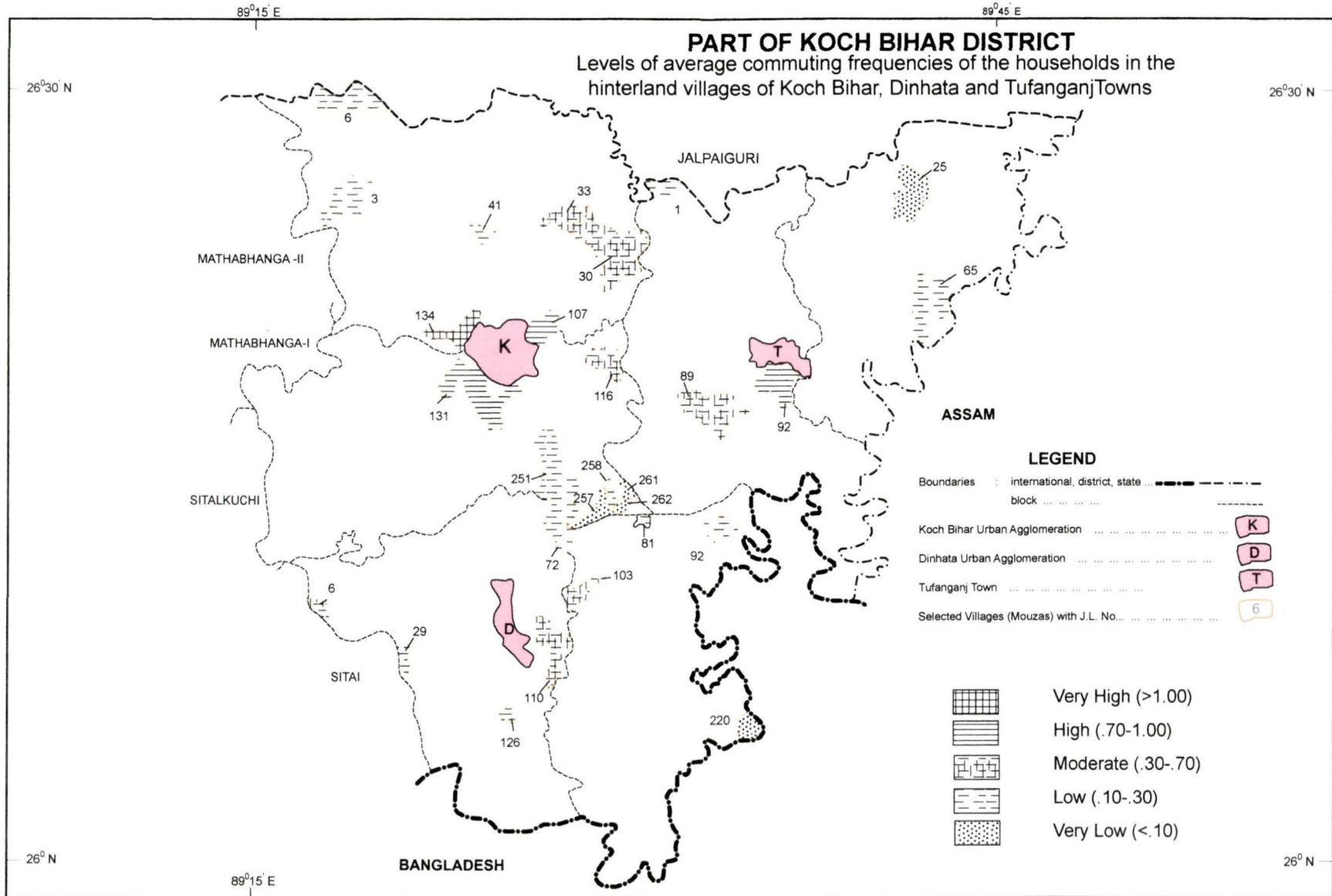


Fig. 5.6

The average commuting frequencies indicate the intensity of urban-rural interaction of the hinterland villages in the present study. With the inter-zonal and intra-zonal variations taken together, the trend of average commuting frequencies, i.e., the intensity of interaction follows a general decelerating trend for all the five regions. Figure 5.6 shows the spatial variation of the levels of commuting, i.e., the intensity of commuting in the three hinterlands of Koch Bihar, Dinahata and Tufanganj towns. In the three regions, the highest intensity of interaction, expressed in terms of frequency of commuting is experienced only by Takagach—the closest village of Koch Bihar. There is a wide variation in the intensity of commuting in the hinterland of Koch Bihar, as the villages range from very high to very low levels of average commuting frequencies. The variation is less in the hinterlands of Dinahata and Tufanganj as none of the villages of these two regions have very high frequency of commuting.

The interaction intensity is certainly distance-shaped in all these regions. But there are variations to this general trend also. For instance, in the hinterland of Dinahata, the tendency of commuting is equal in the closest periphery and in the next zone. Again, the remotest hinterland in the cases of Koch Bihar and Tufanganj shows a higher commuting tendency than that of the previous zone in consequence of the better communication of the former zone than the latter.

In view of the intensity of interaction, villages in the hinterland of Jalpaiguri town are comparatively better than the other regions, as no village falls in the range of 'very low' category. Similar to that of Koch Bihar, the closest periphery of Jalpaiguri has the highest average value of commuting frequency. This value is of course the highest among the 42 surveyed villages. Here again, the impact of distance has been evident in the intensity of interaction, i.e., in the commuting frequencies.

In relation to distance, the steepest fall has been experienced by the urban field of Jalpaiguri. Figure 5.7 shows the levels of average commuting frequency in the hinterland of Jalpaiguri.

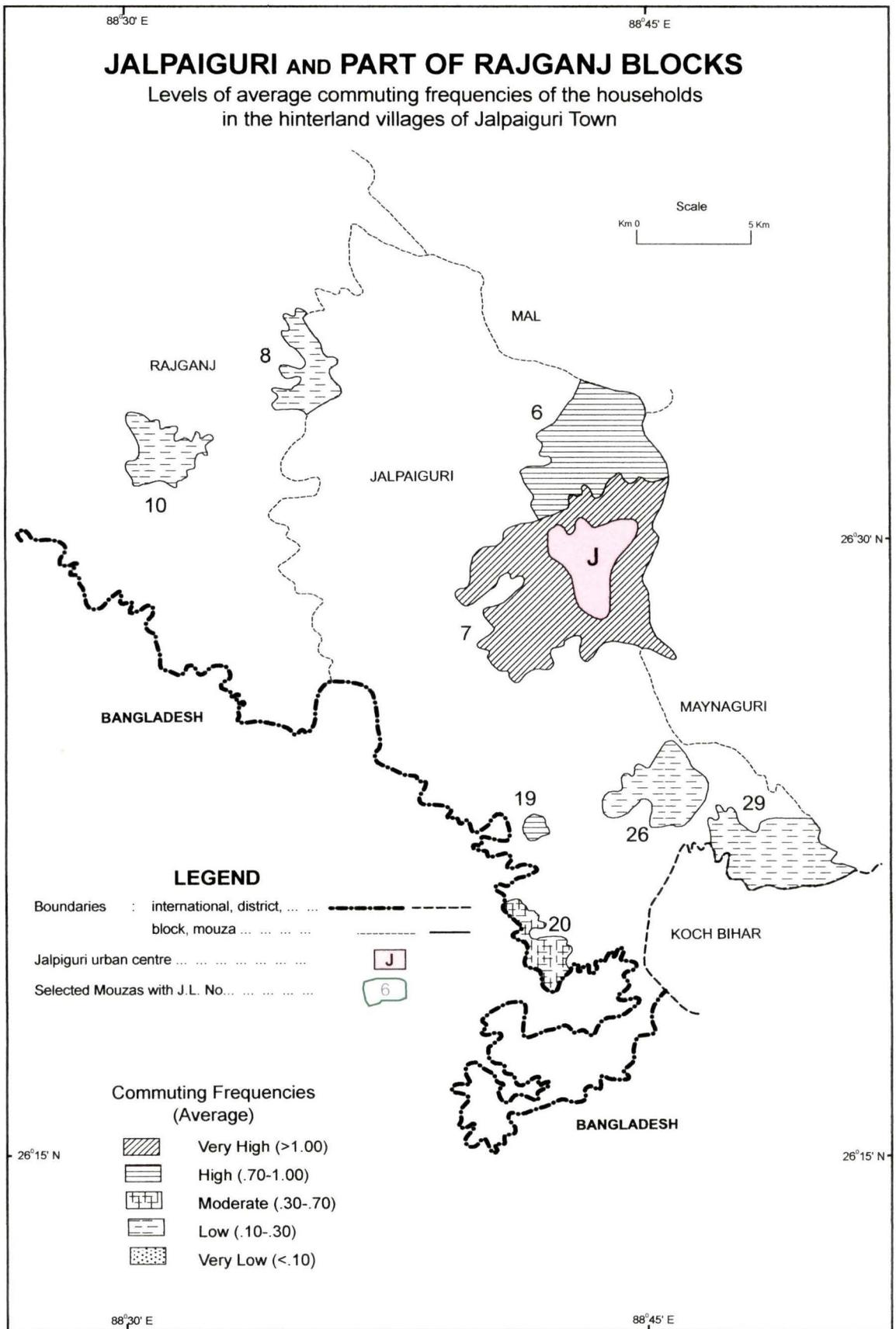


Fig. 5.7

In the case of Alipurduar, the conspicuous feature is that the remotest hinterland shows a higher commuting tendency than that of the previous zone in consequence of the better communication of the former zone than the latter. That is why the average frequency representing the hinterland of Alipurduar shows a marked rise in the distance-zones of 15-20 km and 20-25 km. Therefore, transport linkage has become more significant than the distance for these particular zones. Again, the people of Chapatali have the highest average frequency of commuting to Alipurduar town from a distance of 10 km. The reason for this has already been given while analysing table 5.8. Figure 5.8 shows the levels of average commuting frequency in the hinterland of Alipurduar.

Of course, the magnitude of the range of these values is different in between the five hinterlands. The correlation coefficient between distance and these average values also support the observed declining patterns.

Table 5.11 gives the results of correlation analysis between the intensity of interaction, i.e., the frequency of commuting and the distance of the villages from their nearest towns.

Table: 5.11 **Results of Correlation Analysis between the Average Commuting Frequencies and the Distance from Core Town**

Hinterland Villages of	'r' values for Distance and Average Commuting Frequencies
Koch Bihar	<b>-.778**</b>
Dinhata	-.640
Tufanganj	-.895*
Jalpaiguri	-.923**
Alipurduar	<b>-.670</b>
Koch Bihar District (Combined)	<b>-.725**</b>
Jalpaiguri District (Combined)	<b>-.801**</b>
Koch Bihar and Jalpaiguri Districts (Combined)	<b>-.723**</b>

Note: \*\* Significant at .01 level of significance  
\* Significant at .05 level of significance

Computed

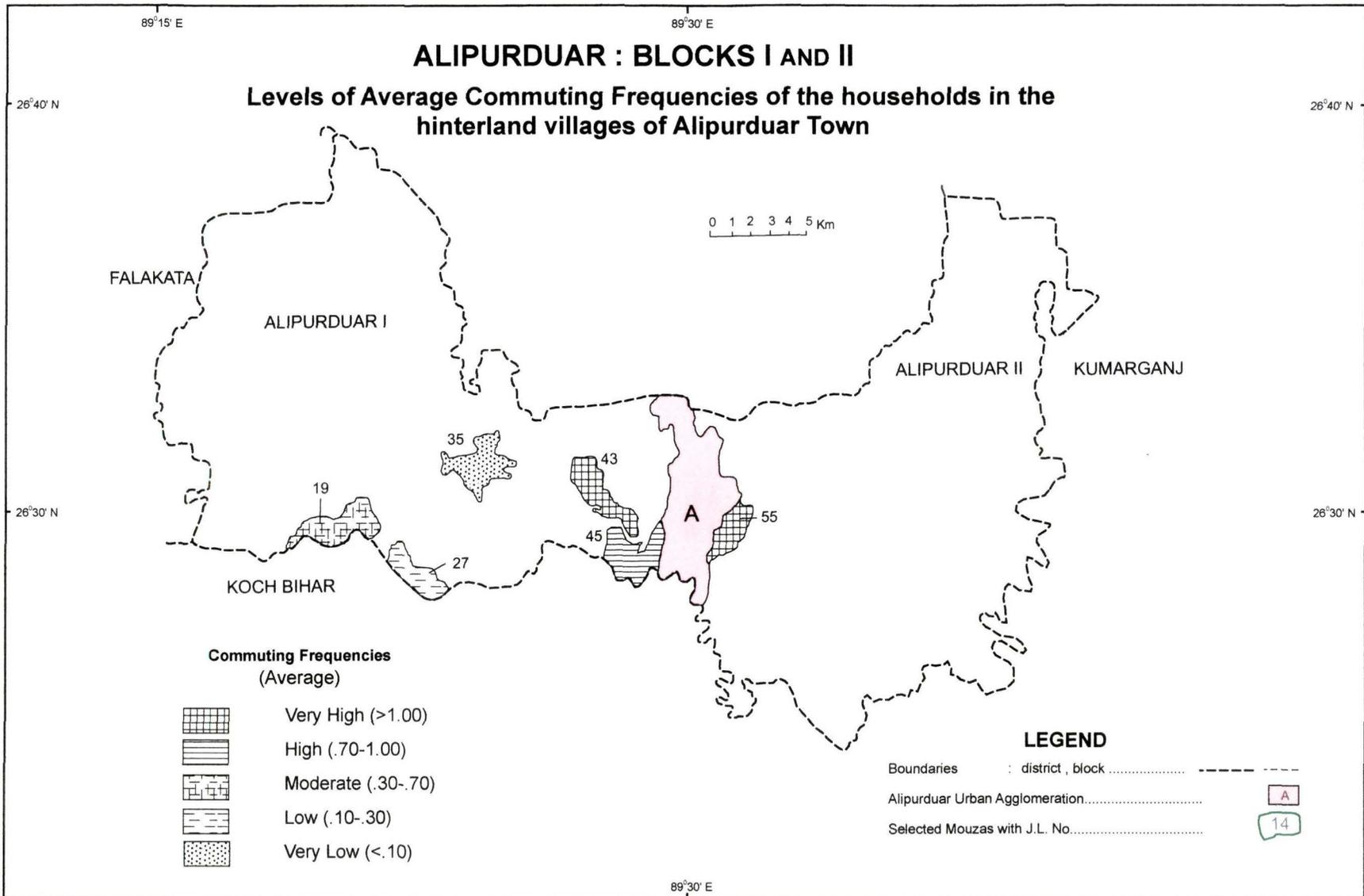


Fig 5.8

Only the two towns of Dinhata and Alipurduar show insignificant but inverse relationship between distance and average commuting frequencies. The observed pattern of the lesser importance of distance in the case of Alipurduar, discussed above, has thus been statistically proved.

However, the hypothesised distance-decay of the intensity of interaction (hypothesis no.4, 'Introduction') has been established significantly for all the regions except for the hinterlands of Dinhata and Alipurduar, where the inverse relation is not statistically significant.

### **5.5 Levels of Urban-Rural Interaction and its determinants**

A comprehensive perception of the various facets of urban-rural interaction has been made by inspecting 'index of urban-rural interaction', i.e., a composite index of interaction has been computed with the following variables having inter-correlation among them.

1. Rural Working Population (%) employed at Core Town
2. Rural Households (%) availing of regular Medical Services from Core Towns
3. Rural Households (%) availing of Medical Services from Core Towns in emergencies
4. Rural Households (%) whose members depend on Regular Educational Services from Core Towns
5. Rural Households (%) whose members depend on Regular & Private Educational Services from Core Towns
6. Rural Households (%) whose members depend on Shopping of 'All Items' from Core Towns
7. Rural Households (%) depending on Banking services at Core Towns
8. Rural Households (%) availing of Recreational facilities at Core Towns frequently
9. Rural Households (%) availing of Recreational facilities at Core Towns occasionally
10. Average values of Commuting Frequencies

The correlation matrix of the aforementioned indicators and the weightages assigned to the indicators, have been given in Appendix VIII.

Table: 5.12 Villages arranged in descending order of 'Index of Urban-Rural Interaction'

Villages around	Villages	Distance(km) From Core Town	Index of Urban-Rural Interaction
Koch Bihar	Takagach	4	13.29
	Ghughumari	10	6.10
	Chakchaka	5	4.16
	Nageswar Guri	10	3.07
	Talliguri	11	1.44
	Baneswar	12	-0.54
	Kaljani	10	-2.95
	Nawabganj Balasi	15	-3.28
	Dhumpur Balasi	19	-3.91
	Sajherpar Ghoramara	25	-4.05
	Barapak	21	-5.76
	Daharerpar	20	-6.09
	Chatra Chekapdara	17	-6.34
	Chhat Singimari	21	-6.66
Dinhat	BhangniDwitiyoKhanda	7	3.35
	Chhota Sakdal	1	1.87
	Gokunda	8	-0.44
	Raja Khora	12	-1.57
	Ruier Khuthi	15	-1.94
	KhalisaGosanimari	22	-2.19
	Pet Bhata Seora Guri	8	-3.18
	Salmara	18	-4.77
	Atialdanga	24	-4.78
Tufanganj	Chamta	1	7.33
	Deocharai	8	1.22
	Bhanukumari	12	-1.50
	Takoamari	20	-2.75
	Chhat Barochowki	21	-3.77
Jalpaiguri	Kharia	4	13.79
	Paharpur	9	7.03
	Berubari Nagar	15	2.69
	Nandanpur	20	-0.59
	Sakati	15	-1.11
	Gujrimari	20	-1.59
	Boalmari	22	-2.80
	Kismat Sukhani	22	-2.86
Alipurdar	Birpara	1	8.83
	Dakshin Majher Dabri	10	8.51
	Chapatali	1	5.02
	Naottoartari	16	-4.02
	Dakshin Sonapur	21	-4.14
	Silbari Hat	13	-4.15

Computed

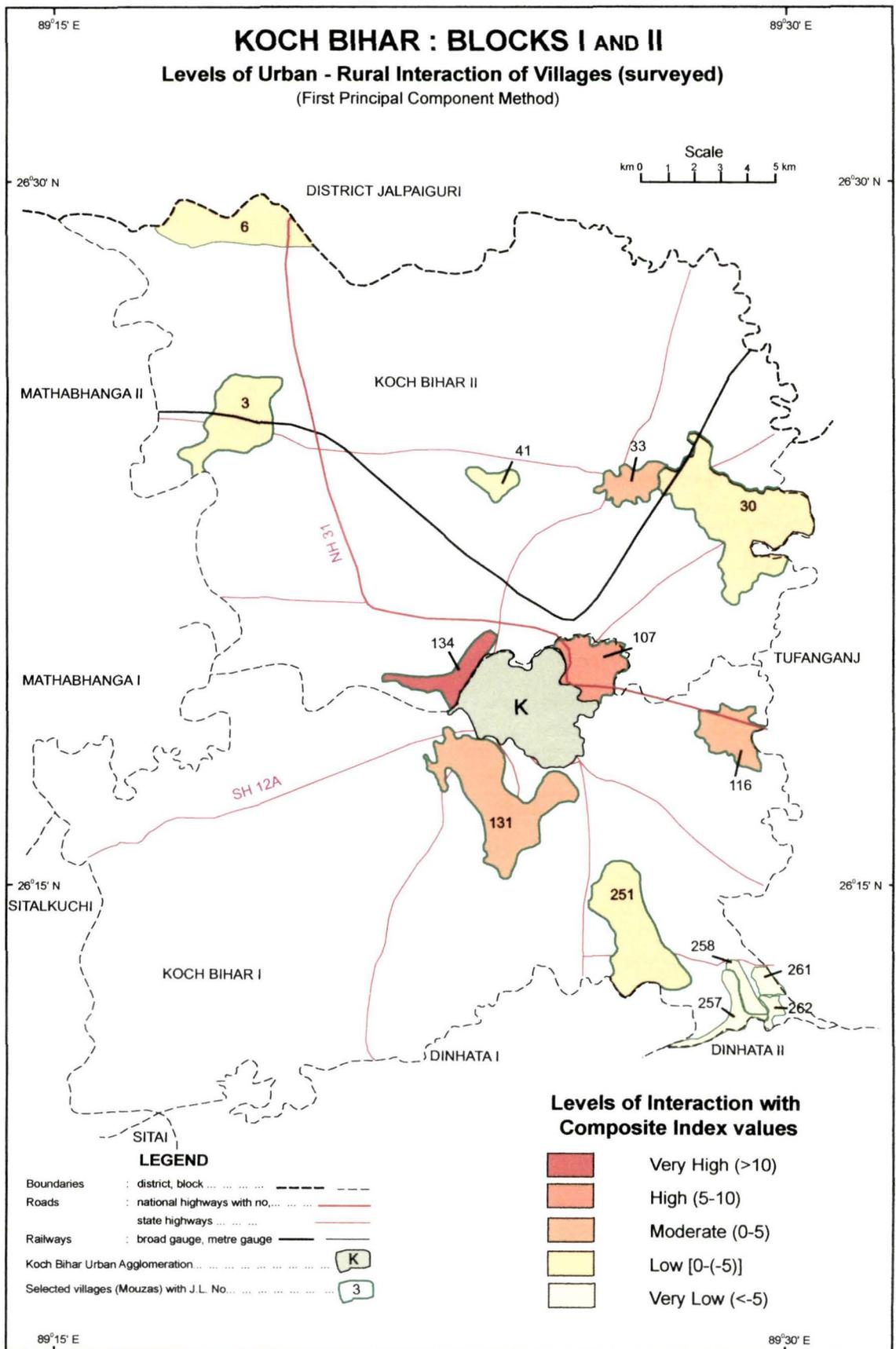


Fig. 5.9

Table 5.12 portrays the arrangement of the villages in descending order of 'interaction index' along with the distance from their nearest towns.

A qualitative categorisation of the villages on the basis of levels of interaction is depicted in figures 5.9--5.13 (Appendix IX).

The significant points observed in table 5.12 are as follows:

1) There exists a wide disparity between the villages in terms of the 'urban-rural interaction indices'.

2) The disparity is comparatively higher in case of the hinterlands of the two district towns (the maximum being in Koch Bihar) than that of the other three sub divisional towns considered here.

3) It may generally be inferred that the proximate villages with their higher scores of 'interaction index' have greater relations with their core towns than their remote counterparts. This distance-decay is the most prominent in the hinterland of Tufanganj and it is steady in the hinterland of Jalpaiguri with slight distortion, as exemplified by the lower score of Nandanpur than that of Gujrimari which is remoter than the former.

4) The striking differences of the distance-decay pattern have been manifested by the following cases:

a. the village of Ghughumari--- at a distance of 5 km. from Koch Bihar—has lower interaction with the town than that of Chakchaka, which is farther away from the town; on the contrary, Chhat Singimari, the remotest rural habitat, is ahead of a number of comparatively lesser distant rural centres, in terms of the interface with Koch Bihar town evidently as a result of its situational advantage along the NH 31 that connects it with Koch Bihar town;

b. similarly, in spite of a distance of 22km from the core town, the village of Salmara has more contacts with Dinhata town than Raja Khora and Pet Bhata Seora Guri, which are less distant from Dinhata because of the fact that Salmara is directly connected with Dinhata by bus route while the other two villages at a distance of 4.5 km and 3.5 km respectively from the bus route connecting their nearest town (Dinhata) (ref. section 4.3.1 and table 4.1). Again, the contiguous village in Dinhata's surrounding, viz.,

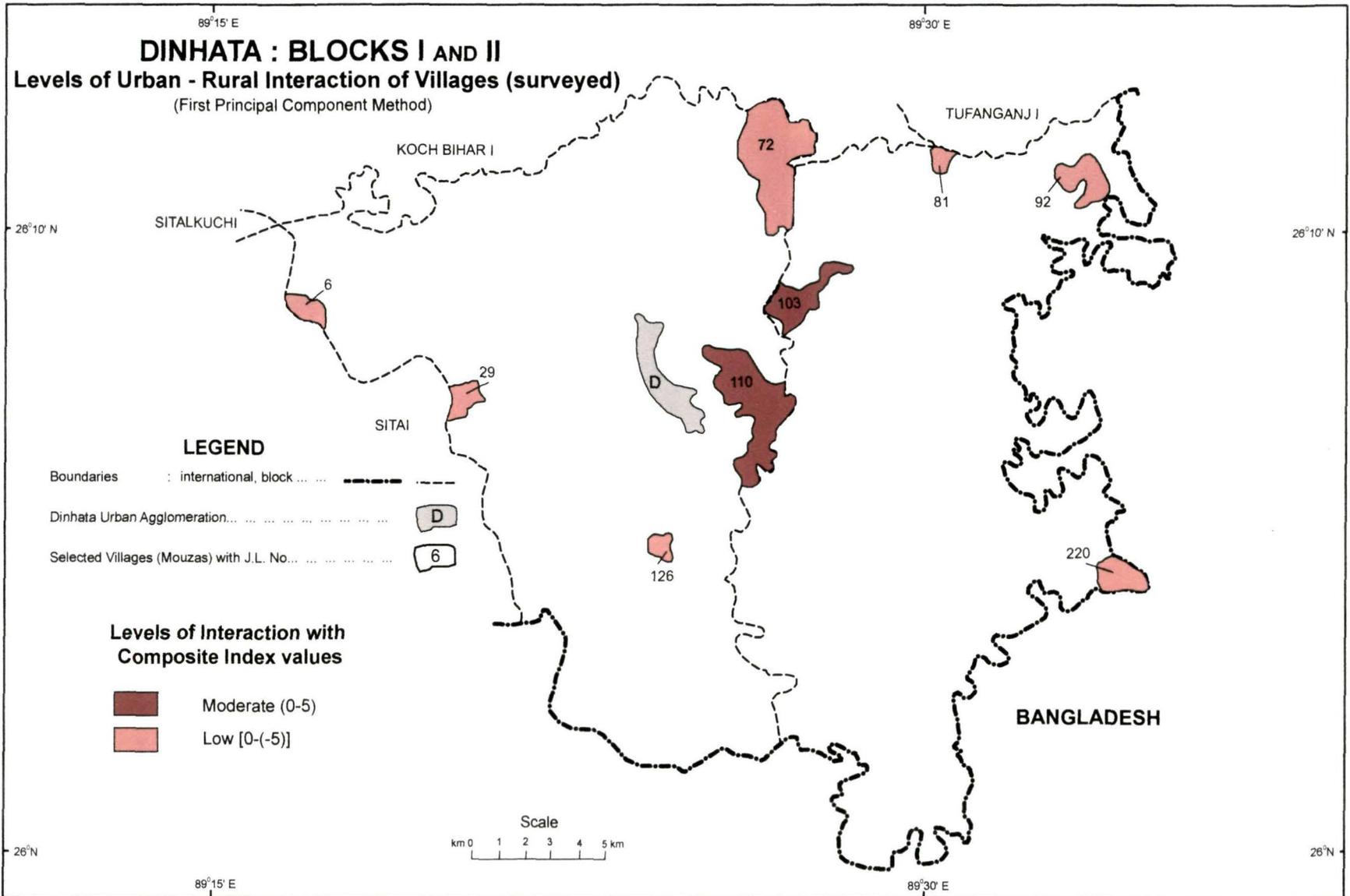


Fig. 5.10

Bhangni Dwitiyo Khanda has got lower interaction value as compared to Chhota Sakdal at 7 km from the town;

c. in the hinterland of Alipurduar, the closest village Birpara is less interactive with the concerned town than Chapatali, which is 10 km. away from the town

Thus, for all these cases, the factor of distance has been offset by some other known and even unexplored explanations, when a comprehensive view is focused on urban-rural linkages. But apart from these exceptions, distance has the usual tendency to be significantly correlated with the phenomenon of urban-rural interaction which is influenced to a great extent by the distance from the town. (Table 5.14)

Figures 5.9 and 5.12 show that the contiguous hinterlands of the towns of Koch Bihar and Jalpaiguri are the most interactive ones. On the contrary, the least interactive rural settlements are the four remotest villages in the hinterland of Koch Bihar. This proves that maximum disparities in the levels of interaction characterise the hinterlands of these two higher order urban settlements.

Jalpaiguri's urban field comprises the villages (fig. 5.12) having very high to low interface with the town, while the villages of Alipurduar have experienced high and low interaction with the core town (fig. 5.13).

Altogether the villages around Dinhata belong to the lower spectrum of the interaction as compared to the other hinterland villages, as interaction level of those of Dinhata ranges from moderate to low categories (fig. 5.10)

As illustrated by figure 5.11, the town of Tufanganj has got high to low levels of contacts with their respective hinterland villages

Table 5.13 gives the proportions of total surveyed villages of the five urban-hinterlands in different levels of interaction.

Table 5.13 shows that only the hinterland of Koch Bihar shows uniformity in respect of the proportions of villages at different levels of interaction as there are villages of this hinterland at all the levels. Jalpaiguri also bears almost uniformity.

Table 5.13 Percentage share of total surveyed villages in different levels of Interaction with their respective Core (Nearest) town

Levels of Interaction	Percentage of Surveyed villages in the hinterlands of				
	Koch Bihar	Dinhata	Tufanganj	Jalpaiguri	Alipurduar
Very high	7.14	0	0	12.5	0
High	7.14	0	20	12.5	50
Moderate	21.43	22.22	20	12.5	0
Low	35.71	77.78	60	62.5	50
Very low	28.57	0	0	0	0

But, in general the majority of all these villages belong to the low levels of interaction with their core towns considering all the villages together and also considering each hinterland of the individual town.

Indeed, there are some significant points which may not be overlooked. Because of clubbing of the villages under the umbrella of five range-categories, many of them with different nature and pattern of interaction has been categorised under single category. For instance, the village Naottoartari in Alipurduar urban-field, Pet Bhata Seora Guri and Atialdanga in Dinhata's hinterland, have been categorised under the same level of interaction of Gokunda in Dinhata's hinterland, Banewar, Kaljani, Chhat Singimari in Koch Bihar's urban field, Bhanukumari in Tufanganj's hinterland. They belong to the higher levels than that of the four remotest villages of Koch Bihar belonging to the lowest levels of relationship, despite the fact that with very poor communication, those three villages are not connected by direct bus route with the towns. The possible reason for this anomaly is that those three afore-mentioned villages (Naottoartari, Pet Bhata Seora Guri, Atialdanga) do not have any alternative but to depend on or thereby to interact with their nearest town as there are no towns situated at lesser or same distance as this nearest town even in their adjacent district. On the contrary, the remote villages of Koch Bihar can interact with Dinhata, situated at slightly more distance as that of the nearest town (Koch Bihar) and thus their interaction with Koch Bihar has not been necessitated by the compulsive dependence on the town. The same trend has been observed in the case of Kaljani wherefrom the town Alipurduar (a town in the other district) is not very far. Moreover, as the

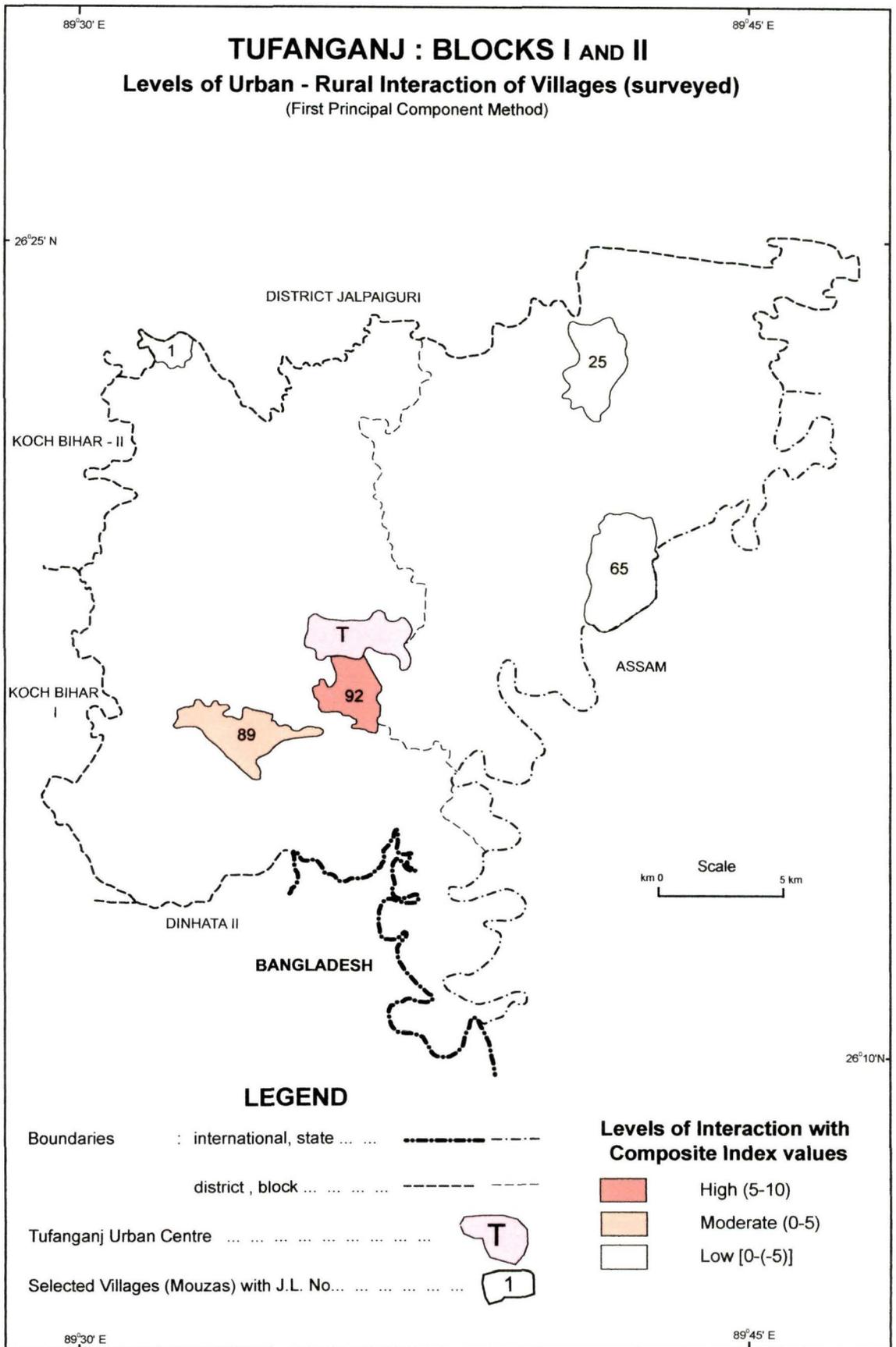


Fig. 5.11

individual types of interaction (as economic, cultural, social etc.) has been summarised, a somewhat slight distortion has been reflected in the pattern. Altogether the villages around Dinhata belong to the lower spectrum of the interaction as compared to the other hinterland villages, as interaction level of those of Dinhata ranges from moderate to low categories.

Both the towns of Alipurduar and Tufanganj have got almost equal levels of contacts with their respective hinterland villages.

The factor of 'distance' of the concerned villages from their nearest towns has been correlated and regressed with the 'interaction index' to work out its causality and impact on the interaction levels, the results of which are presented in Table 5.14

**Table: 5.14 Results of Correlation and Regression analysis explaining the "Index of Urban-Rural Interaction" by the Distance of the villages from their Core (Nearest) Town**

Hinterland Villages of Core towns of	Correlation Coefficient (r)	Regression Coefficient ('b')	Regression Constant ('a')	R <sup>2</sup>
Koch Bihar	-.839**	-.763**	10.077**	.703
Dinhata	-.752*	-.274*	2.041	.565
Tufanganj	-.949*	-.504*	6.410	.901
Jalpaiguri	-.959**	-.863**	15.586	.920
Alipurduar	-.791	-.668	8.798	.625
Koch Bihar District (Combined)	-.772**	-.521**	6.131**	.596
Jalpaiguri District (Combined)	-.811**	-.657**	10.726**	.658
Koch Bihar and Jalpaiguri Districts (Combined)	-.758**	-.566**	7.650**	.574

Note: \*\* Significant at .01 level of significance

\* Significant at .05 level of significance

Computed

The inverse relationship between the distance and the interaction (hypothesis no.5, as referred in 'Introduction') levels has been significantly validated for all the regions except for the hinterland of Alipurduar. It implies that the interaction diminishes along with increase in the distance from the towns.

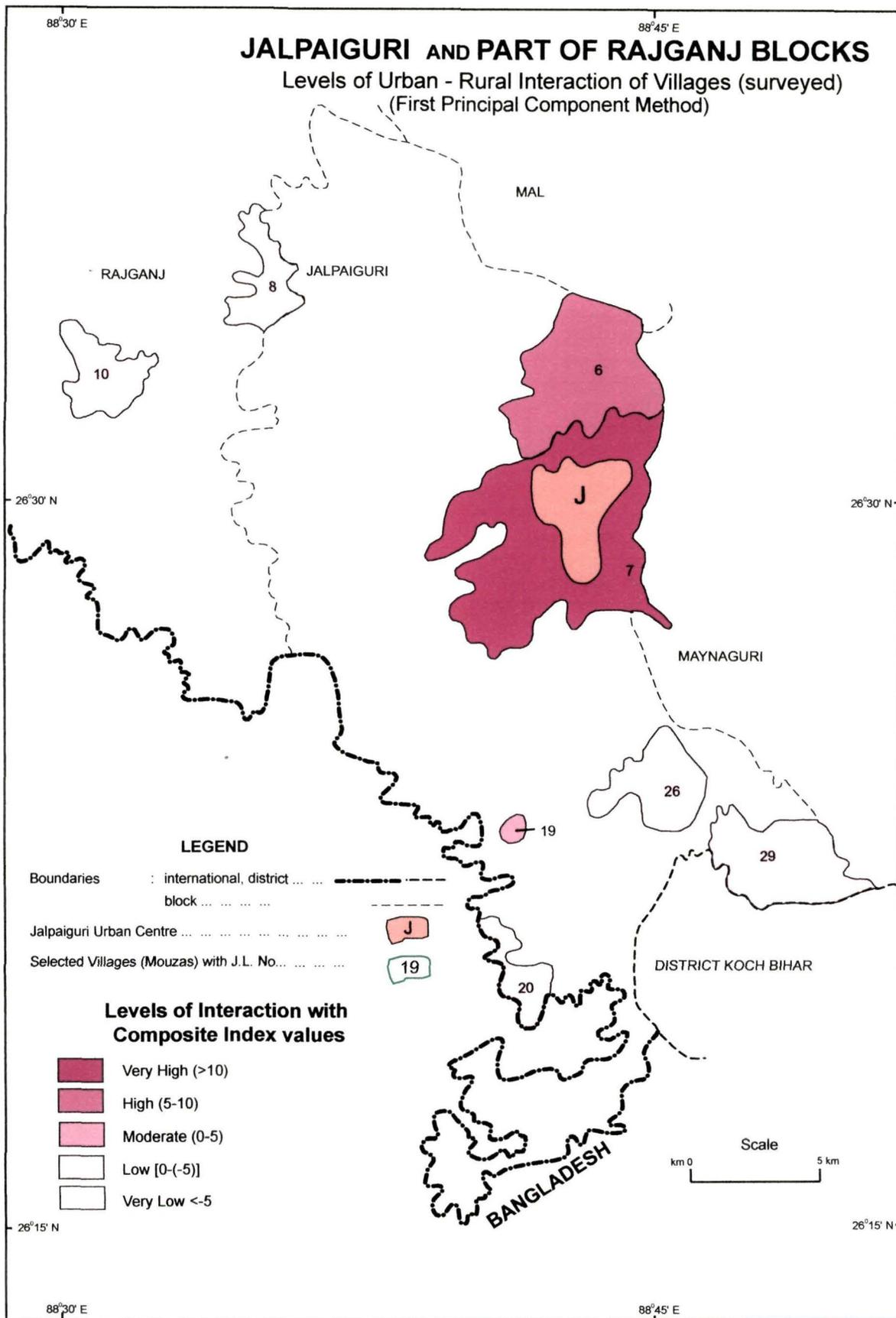


Fig. 5.12

Comparing the individual hinterlands, this relationship is the most prominent for the villages around Jalpaiguri, which is followed by the hinterlands of Tufanganj, Koch Bihar and Dinhata. From the corresponding  $R^2$  values, it has been understood that while for the hinterlands of Jalpaiguri, Tufanganj and Koch Bihar the factor of distance has explained respectively 92%, 90% and 70% of variations in the interaction levels, this proportion is 56.5% for the urban field of Dinhata.

Between the two districts, the effect of distance has been more pronounced in case of the urban fields of Jalpaiguri district than that of Koch Bihar district, as 66% of the variations in the interaction index have been explained by distance of the villages from their nearest towns in Jalpaiguri district as a whole, while this percentage is 60% for the hinterland villages of Koch Bihar district.

The notional assumption that the transport linkage of the villages with their nearest urban centre may have an impact on the process of urban-rural interaction, has also been examined hereafter. To find out the comparative influence of the four explanatory variables, viz., Distance ( $X_1$ ), Frequency of buses ( $X_2$ ), Travel time ( $X_3$ ) and Transport fare ( $X_4$ ) explaining the phenomenon of urban-rural interaction, the step-wise analysis of multiple regression has been made. Table 5.15 gives the results of multiple regression.

Table 5.15 **Results of Step-wise Regression analysis explaining Urban-Rural Interaction (Koch Bihar and Jalpaiguri Districts—combined)**

Step	Independent Variables & Constant	Regression Coefficient (b)	Standard Error	t-statistics	R	$R^2$	Change in $R^2$	F-statistics
1	Travel Time ( $X_3$ )	-.162	.020	-8.072**	-.787	.620	---	65.149**
	(Constant) (a)	6.648	.963	6.900**				
2	Travel Time ( $X_3$ )	-.103	.030	-3.415**	-.820	.672	.052	39.984**
	Distance ( $X_1$ )	-.274	.110	-2.501**				
	(Constant) (a)	7.933	1.041	7.618**				

Note: \*\* Significant at .01 level

\* Significant at .05 level of significance

Computed

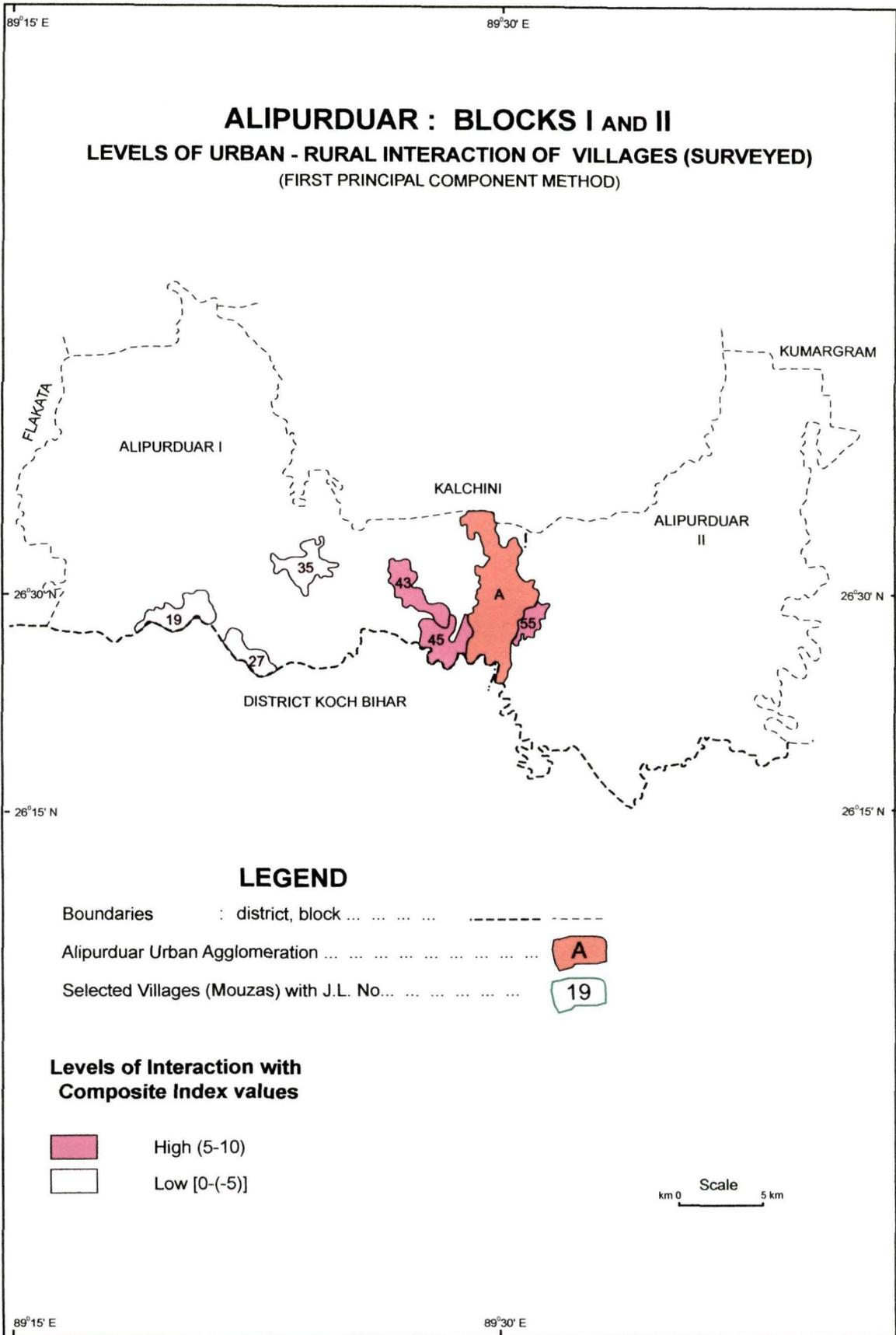


Fig. 5.13

It has been observed that two of the four explanatory variables, such as, travel time and distance have been proved to be significantly explaining urban-rural interaction as a whole for all the villages of the two districts. Travel time ( $X_3$ ) alone can explain 62% of the variations in 'urban-rural interaction index'. The distance ( $X_1$ ) between the village and the nearest town comes next in contribution. Both travel time and distance jointly explains 67% variations of urban-rural interaction.

The other two explanatory variables, viz., frequency of buses ( $X_2$ ), and transport fare ( $X_4$ ) have been excluded by this process of analysis (made with the help of the 'spss' software). The probable reason for that could be the problem of multicollinearity, which is a technical hinge in the process of multiple regression, arising out of the inter-correlation among the variables. The correlation matrix of these variables has been given in Appendix X. Although a question may crop up about the application of the model of multiple regression with the inter-correlated variables (mentioned above), yet all these variables have been considered as very significant factors affecting the process of urban-rural interaction. Further, from our survey, it has been understood that despite the inter-correlation among these variables, there are some variants within these factors. However, for all these reasons, the method of step-wise regression has been applied, which takes into considerations the influence of dominant variables and eliminates the unimportant factors.

Despite the statistical correlation between the two most important explanatory variables, i.e., travel time ( $X_3$ ) and distance ( $X_1$ ), the model of step-wise regression has considered the joint influence of these variables as significant.

Thus the optimal regression equation in the present context can be written as follows:

$$Y = 7.993 - .103 X_3 - .274 X_1 \quad \text{or}$$

$$\text{Index of Urban-Rural Interaction} = 7.993 - .103 (\text{Travel time}) - .274 (\text{Distance})$$

The expression mentioned above, can be interpreted as that the Index of Urban-Rural Interaction decreases by .103 for each unit change in travel time and decreases by .274 for a unit change in distance.

It can be inferred that the propensity of the rural people to interact with their nearest town declines with the increase of travel time and distance between their native place and the nearest town. Here, travel time has come out to be the most important factor of the transport linkage between the village and the town. Hence, for all the villagers (surveyed) of the two districts, time to reach their nearest town and distance between them are important matter of consideration.

Considering the two districts separately, it has been observed that travel time ( $X_3$ ) has come out to be the single determinant in case of Koch Bihar district explaining 68.6% variations in the process; but for the district of Jalpaiguri, distance ( $X_1$ ) happens to be the single determinant of urban-rural interaction explaining 66% of variations. Table 5.16 shows the results.

Thus, the equations are as follows:

$$Y = 5.493 - .153 X_3 \quad (\text{for Koch Bihar district})$$

$$Y = 10.726 - .657 X_1 \quad (\text{for Jalpaiguri district})$$

The interpretation is that the 'Index of Urban-Rural Interaction' decreases by .153 for each unit change in travel time in the district of Koch Bihar and decreases by .657 for a unit change in distance in the district Jalpaiguri.

Table 5.16 Results of Step-wise Regression analysis explaining Urban-Rural Interaction: For the hinterland villages of Koch Bihar and Jalpaiguri districts (individually) and of Koch Bihar and Dinhat towns

District/ Town	Step	Independent Variables and Constant	Regression Coefficient (b)	Std. Error	t-statistics	R	R <sup>2</sup>	Change in R <sup>2</sup>	F-statistics
Koch Bihar Dist.	1	Travel Time (X <sub>3</sub> )	-.153	.020	-7.540**	-.828**	.686		56.858**
		Constant(a)	5.493	.984	5.584**				
Jalpaiguri Dist.	1	Distance (X <sub>1</sub> )	-.657	.137	-4.808**	-.811	.658		23.113**
		(Constant) (a)	10.726	2.096	5.117**				
Koch Bihar Town	1	Travel Time (X <sub>3</sub> )	-.191	.032	-5.886**	-.862**	.743		34.65**
		(Constant) (a)	6.934	1.552	4.467**				
	2	Travel Time (X <sub>3</sub> )	-.120	.037	-3.276**	-.920**	.846	.103	30.304**
		Transport Fare (X <sub>4</sub> )	-.801	.294	-2.724*				
		(Constant) (a)	11.198	2.005	5.585**				
Dinhata town	1	Transport Fare (X <sub>4</sub> )	-.394	.091	-4.324**	-.853**	.728		18.695**
		(Constant) (a)	2.921	1.136	2.572*				

Note:\*\* Significant at .01 level of significance  
\* Significant at .05 level of significance

Computed

Applying the model of multiple regression for the hinterlands of each towns individually, it has been observed that, distance (X<sub>1</sub>) happens to be the sole determinant of interaction for the hinterlands of Jalpaiguri, Alipurduar and Tufanganj. The regression coefficients of these cases have already been shown in table 5.14. But for the hinterland of Dinhat, transport fare has happened to be the sole determinant. Thus, in this particular case (Dinhata's hinterland) the hypothesis (no. 6c--'Introduction') of inverse relation between transport fare and levels of interaction has been proved significantly. For the hinterland of Koch Bihar town the variables of travel time and transport fare have come out to be the two important determinants. The regression equations are as follows:

$$Y = 11.198 - .120 X_3 - .801 X_4 \quad (\text{for the hinterland of Koch Bihar town})$$

$$Y = 2.921 - .394 X_4 \quad (\text{for the hinterland of Dinhata town})$$

For Koch Bihar's hinterland, travel time and transport fare jointly explain 85% variations in the process of urban-rural interaction, while for Dinhata's hinterland transport fare explains 73% variations in the interaction.

After a thorough investigation of the determinants of urban-rural interaction, the significant fact that emerges is that travel time to reach the nearest town plays a determining role in the process of interaction in majority of the cases which is followed by the factor of distance. Hence, the distance-based obstacle in the interaction process can be offset by lessening travel time to reach the urban centre and so the distant villages with lesser travel time may have higher interaction level than that of the nearer villages with greater travel time. Thus the hypothesis no.6b (spelt out in 'Introduction') has been substantiated.

Here, it may be noted, that the role of bus-frequency is of least importance among all the determinants considered for assessing the levels of interaction. So the hypothesis no 6a, i.e., the distant villages with greater frequencies of buses plying between the villages and their nearest town, (a component of transport linkage), have higher levels of interaction with their nearest town as compared to that of the nearer villages with lesser frequencies of buses, has been nullified.

## Summary

To wind up the foregoing discussion of nature and intensity of urban-rural interface in a nutshell, the following features have come into light:

1) The nature of *economic relation* of the commuters with their core towns, represented by the volume of rural workforce in the core towns, their occupational structure and the pattern of income earned from those core towns is characterised by the following features:

a) The module of *sustenance linkage*, symbolised by the volume of rural workforce in the core towns, has certainly been a resultant of the distance between the place of origin (villages) of the human resource and the place of destination (urban cores) and this has been significantly established in case of the hinterlands of the towns of Koch Bihar, Jalpaiguri and Alipurduar. In this respect, it may also be noted that the importance of the server towns, the self-sufficiency of the participating villages and the nature of transport linkage are significant for motivating rural workers to move to urban centres.

b) Both the formal and the informal sectors shape the *occupational disposition* of the rural mass working in their core towns, of which the formal sector, represented by business and especially by various town services, is the major employer for the neighbouring and remote rural workers absorbed in the towns of Koch Bihar district, while the urban informal sectors of the towns of Jalpaiguri district are the mainstay of the commuting workers only from the adjacent communities. The employment diversities have been narrowed down along with increasing distance from the towns in general. The distant workers are provided primarily with tertiary employment in the towns and the urban informal employment is restricted basically for the fringe inhabitants.

c) The *economic condition* as focussed by the household income structure of the rural people working in the core towns suggests that a majority of the commuters from the adjacent rural communities belong to the lowest and the lower-middle income strata, as a sizeable section of them are engaged in poorly-paid urban informal employment. The income disparity is marked among the neighbouring commuters because of their diverse employment scenario, whereas the uniformity in livelihood

pattern has resulted in an almost uniform income distribution of the distant commuters. An inter-zonal comparison reveals that as a whole the town of Jalpaiguri has provided the highest economic level for the rural workers coming from its hinterland.

2) The *cultural interface*, as revealed by the recreational commuting, is contingent upon the distance and the cultural activities of the source village community on the one hand, and its economic condition on the other hand. The villages around Koch Bihar, Tufanganj and Jalpaiguri have witnessed the significant association between the distance and the spatial movement for recreational purpose.

3) In view of the *social contacts*, a weak inverse relationship of distance with the villagers' travel for meeting urban relatives is witnessed only by the urban-hinterlands of Koch Bihar district and of the districts taken together. Again, the tour for attending political meeting in towns has ignored the obstacle of distance because of the preference of the remote villagers for such costless urban-roaming that may even offer food and cash to them.

Thus, the hypothesis (no. 2b—in the 'Introduction') of inverse relation between distance from towns and the proportion of rural households deriving benefits of urban services has been validated mostly for economic and cultural interaction; for social contacts, the relationship is weak and regarding the political commuting it has been nullified.

4) The *intensity of interaction* as highlighted by the *frequency of commuting* of the villagers is predominantly controlled by the distance episode. Yet, their necessities to have urban services can disturb the effect of distance and also the communication link with the respective town. In that sense, the purposes of commuting is to be identified thoroughly. The question of transport linkage seems to be more important for the rural people in the hinterlands of Alipurduar and Dinhata for commuting to their nearest town. Thus, except for the hinterlands of Dinhata and Alipurduar, the hypothesis (no.4, as discussed in the 'Introduction') of inverse relationship between distance and the intensity of interaction has been substantiated for all the regions.

5) The overall *levels of interaction*, illustrated by the '*Urban-Rural Interaction Index*', has been found to be the highest in the urban fields of the two higher order towns, viz. Koch Bihar and Jalpaiguri. Again, the disparities in the levels of interaction are also high in the same hinterlands of these two district towns. Actually, the spatial

disparities in the levels of interaction have been found to be maximum in the hinterland of Koch Bihar town, while the disparity in this regard is the least in the hinterland of Dinahata town.

6) The *levels of interaction* of the rural settlements with their nearest towns have been found to be inversely proportional to the distance between them in case of all the hinterlands, and this seems to match with our presumption. But this particular relationship has not been statistically justified only for Alipurduar's hinterland; the hypothesis (no.5, as mentioned in the 'Introduction') has been tested as significant for majority of the cases considered here.

Comparing the five hinterlands under study, the levels of interaction have been most affected by distance in Jalpaiguri's hinterland. That is why, among the two districts, the urban-hinterlands of Jalpaiguri district as a whole show greater influence of distance on interaction than those of the district of Koch Bihar.

7) A comparative analysis of the determinants of urban-rural interaction reveals that travel time to reach the nearest town is the most important decisive factor in determining the process of interaction of all the villages of the two districts taken together; the factor of distance comes next in order in this connection for all the surveyed villages considered together. Hence, the hypothesis (no. 6b spelt out in the 'Introduction') of an inverse relationship between travel time and the levels of interaction has been substantiated for the study area as a whole. It may further be said that distant villages with lesser travel time to reach their nearest town have higher levels of interaction (with their nearest towns) in contrast to the levels of interaction of the nearer villages wherefrom, more travel time is required to reach the concerned nearest towns.

An inter-district comparison reveals that travel time is the most important determinant of interaction for the urban-hinterlands of Koch Bihar district, while distance seems to be the most pertinent factor of interaction for the villages of Jalpaiguri district as a whole. Transport fare has also played a role in deciding the process of interaction for the hinterlands of Koch Bihar and Dinahata towns, although it is of secondary importance for Koch Bihar's region since travel time is the primary determinant in this context. For the urban fields of the other three towns, i.e., Jalpaiguri,

Alipurduar and Tufanganj, distance has been found to be the single determinant of urban-rural interaction. Thus, the hypothesis (no. 6c) of inverse relationship between the level of interaction and transport fare (between a village and its nearest town) has been validated for the two hinterlands of Koch Bihar and Dinhata towns.

In this context, it may be inferred that lessening of travel time between the town and the concerned villages, a) by establishing proper metalled road connection, b) by improving the condition of the existing roads and c) by setting up direct bus connection, may offset the remoteness of the villages from their nearest core town; it may ultimately enhance the levels of the interaction of the villages with their core towns. Further, for the poor villagers, fare to travel to the nearest town is surely a matter of concern as the commuting of the villagers may be affected by higher transport fare. Of course, transport fare may also be reduced by setting up direct bus connection from the town to the village.

Since the levels of interaction has not been affected much by the factor of bus-frequency, the hypothesis no 6a, i.e., the distant villages with greater frequencies of buses plying between the villages and their nearest town have higher levels of interaction with their nearest town as compared to that of the nearer villages with lesser frequencies of buses, has been nullified.

Thus, in the process of urban-rural interaction, *travel time* and *distance* between urban cores and their rural surroundings--being relativised to villagers' commuting purposes to towns--have been identified as the principal determinants of urban-rural interaction; of course, these two determinants, being accompanied by several factors, i.e., *transport fare*, the intrinsic character of rural habitat, the quality of rural human resources and the importance of the concerned urban centres, may lead to a healthy nature of interface.

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