

TRANSPORT LINKAGE ANALYSIS OF RURAL MARKETS IN PERIPHERAL BLOCKS OF RANCHI, JHARKHAND

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Transport linkages are the wealth of a nation. They act as a tool for social inclusion, economic development and environmental sustainability. Transport link communities and their agricultural produce to the main transport system and markets. This results in increased production and productivity, crop diversification and increased profitability. Network has great impact on rural markets. The selling and buying activity has increased to a large extent due to the inner-connecting lanes of the markets. One characteristic feature of the rural markets of Ranchi city and its periphery is that they have developed with close association with network i.e. transportation routes.

In a city like Ranchi, two types of transport network predominate - Roadways and Railways. This paper aims to throw light on network of rural markets in the periphery of Ranchi city and assesses how they can be improved. The existing inadequacy of network in the peripheral area has been discussed in this study which is mainly based on the collection of primary data. A total of 52 rural markets were surveyed from 3 peripheral blocks (Kanke -20, Namkum -15 and Ratu -17 rural markets). The study concludes that the existence of rural markets is threatened due to the lack of connectivity as the producers/sellers are not getting adequate benefit from their produce as lot of profit is lost by the middlemen, cost of transport, perishable goods rot during the time taken to reach the market. Demand Responsive Transport (DRT) services, or Para-transit is a solution to transport linkage problem in periphery of Ranchi city.

Keywords : *Transport linkage, Roadways, Railways, Rural Markets, Producers, Development Jharkhand.*

Introduction

The transport needs of rural people are associated with basic needs such as water, food and firewood, social welfare aspects of rural life such as health and education and with economic welfare aspects of rural life such as agriculture, livestock and home industries. Improved transport reduces isolation. People need to have access to a wide variety of goods, services and information in order to live a productive economic and social life. Because of transportation, it is possible for a producer to reach a large number of markets. A transportation network makes markets more competitive. Geographers often study resource allocation that is, how specific goods and resources are used. Transportation is very important for a market growth and development. The quality of

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connectivity or the network of transportation means directly affects the growth and development of market either it is a urban one or one remote rural one.

A good network of roads will expand the distribution of agricultural goods as well as open up additional opportunities for agricultural trade (Inoni & Omotur, 2009). Good infrastructure leads to expansion of markets, economies of scale and improvement in factor market operations. It also opens up the rural economy to greater competition. This may take the form of cheaper products from lower-cost sources of supply or new or improved products that may displace some locally produced items.

Review of Literature

Market activity has gradually evolved with the increasing demand and self-sufficiency of human beings. In the beginning a form of barter might have evolved without knowing when people started exchanging gifts among themselves. The surplus production on one hand and subsistence production on the other necessitated exchange. At such exchange system nodal points were established along the areas of different resources. At these nodal points participants gathered at a fixed time to facilitate exchange of goods. The initial exchange was in kind which gradually grew into monetary exchange. The market activity strengthens the social relation, thereby weakening the self sufficiency, and increases the specialization and subsistence level production (Reddy, 1994).

Haats are weekly markets where villagers from not only that village but also the surrounding villages assemble to buy and sell goods. These *haats* are developed over a long period of time as there were many villages that did not have fixed location of retail shops. The villagers came to the haats not only to do shopping outside the village or to sell produce and buy goods and services but also for recreations. The *haats* serve as the place for gathering and socializing for the villagers (Velayudhan, 2008).

Periodic markets are point for sale of farm produce into large sacks for sale in urban markets. An organization of rural markets overseas takes into cognizance the distribution of population and settlement, degree of mobility of traders and purchasers and local variations in productive capacity and resource endowment (Lado, 1988).

Anderson, Ernesto & Dominique, 2010 and Anderson, & Will, 2011 in their studies have demonstrated that developing countries would gain in welfare (in the form of increased farm-income and the demand for unskilled labour, and of reduced inequality and poverty) if current agricultural and trade distortions are eliminated.

Rural–Urban linkages are sustained through livestock ownership and land tenure because migrant households that own livestock and land return home more often (Edaku, 2010; Uchenna Ezeh, Chepngeno-Langat, Kimani, Oti & Beguy, 2012; Posel & Marx, 2013).

OECD (2013) also adopts the rural-urban partnerships approach for economic development, since they argue that this approach help economic development through enhancing the production of public goods, achieving economies of scale in public services, developing new economic opportunities and capacity building, improving administration, taking into account negative externalities, and dealing with the coordination failures. Likewise, Global Monitoring Report (2013) emphasizes the important role of the rural-urban linkages for poverty reduction.

The temporal structuring of periodic markets fulfills the local need for which they are built and the interval between markets afforded sufficient time for preparation (within the context of money and wares) for the next market day (Omole, 2002).

Majumdar (2002), on the basis of regression analysis of the State level cross-section data for each of the years from 1971 to 1995 indicated that among various physical infrastructures, it was the transport infrastructure that significantly affected the agricultural output level and the agricultural development index.

Thorat and Sirohi (2002) attempted to analyse the impact of infrastructure on agricultural development using larger data set, both in terms of time period and coverage of infrastructural variables. The results indicated that transport, power, irrigation and research infrastructure are four critical components, which affect the agricultural productivity in a significant manner.

The market centres being an area of intense human activity are very much affected by the environmental and human aspects. Change and improvement in transport and communication, population growth, urbanization, social, economic and environmental changes influence the market centres operating in any region (Dash, 2007).

The literature on rural roads and economic development has emphasised impacts on transport costs and prices with consequent welfare impacts. For example, rural roads may allow farmers in remote (and often poor) rural areas to obtain higher prices for their outputs, and/or reduce the prices they face for inputs and consumer goods.

World Bank study (1997) estimated that 15% of the agricultural produce is lost between the farm gate and the consumer because of poor roads and inappropriate storage facilities alone, adversely

influencing the income of farmers. Poor rural road infrastructure limits the ability of the traders to travel to and communicate with remote farming areas, limiting market access from these areas and eliminating competition for their produce. Easier access to market allows expansion of perishable and transport-cost intensive products.

Objectives of the study

The study aims at analysing the present pattern, network and frequency of rural markets of peripheral Blocks of Ranchi city.

Study Area

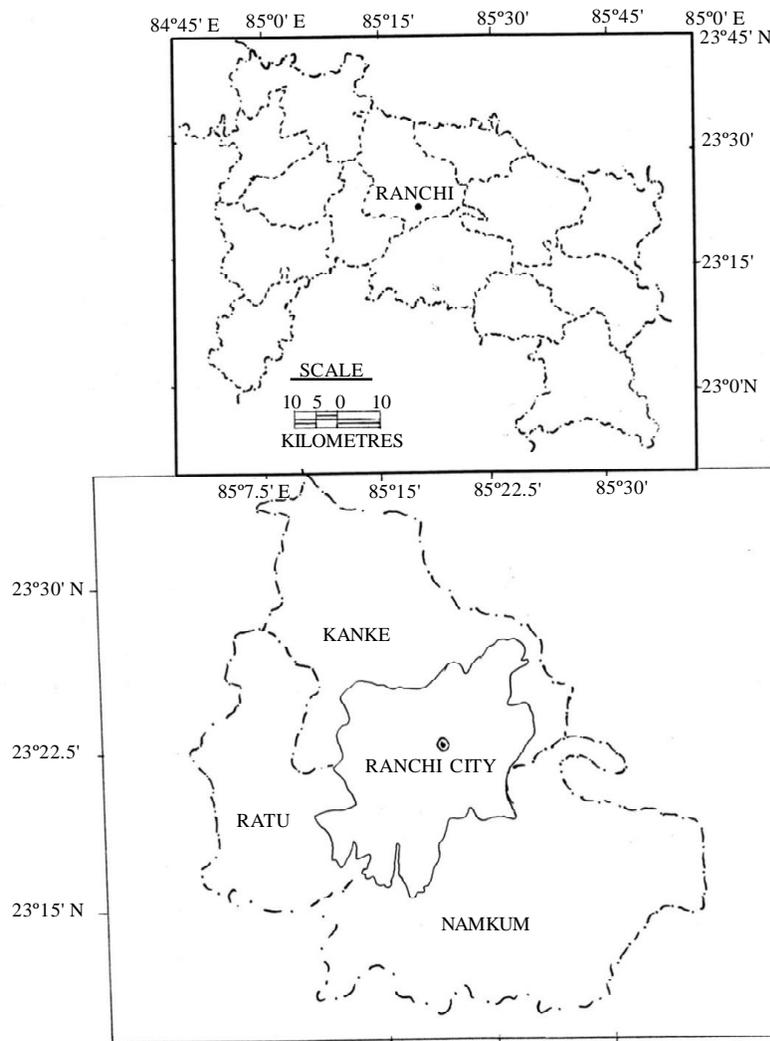
The district of Ranchi has almost the central location in the state of Jharkhand. Ranchi limits its geographical size confining to 23° 23' N Latitude and 85° 23' E Longitudes. This district comprises an area of 7574 sq km. (Sinha & Singh, 2003). The name of the district was changed in 1899 from Lohardaga to Ranchi, after the name of a small village now comprised within the headquarters station. It is bounded on the North, by Hazaribagh, Chatra and newly created Ramgarh district. On the East, by the district of Purulia (in West Bengal) and Saraikela Kharsawan and towards the West by the districts of Latehar, Lohardaga and Gumla and South by newly created Khunti district. In recent years, Ranchi has become a magnetic or nodal center of the state. Therefore, it is necessary to study the peripheral rural markets of the Ranchi city.

In the present study, the periphery of Ranchi city has been delimited on the basis of the administrative boundaries. The entire district of Ranchi which is the capital city of Jharkhand (Fig 1) is divided into 14 blocks of which 3 peripheral blocks have been taken into consideration for study. The three C.D. blocks (Table 1 and Fig No. 1) in the periphery of Ranchi city are –Kanke, Namkum and Ratu.

Table-1. Block-wise Area and Distribution of Population

S.No.	Block	Area (Sq.km.)	Population (in persons)	No. of Rural Markets
1.	Kanke	524	243253	20
2.	Namkum	497	114397	15
3.	Ratu	104	76513	17
Total		1125	434163	52

Source: Census of India, 2011, District Census Handbook Ranchi, Series-21 Part XII-A

Fig 1. Study Area: Peripheral Blocks of Ranchi**Data base and Methodology**

The study is mainly based on the collection of primary data, which were gathered through visiting rural markets. A total of 52 rural markets were surveyed from 3 peripheral blocks (Kanke-20, Namkum-15, and Ratu-17 rural markets). The reference year for the secondary data is 2011, which have been obtained particularly from Census publications and occasional papers published by the office of the Registrar General and Census Commissioner, India, New Delhi. Some

relevant data meant for the purpose have also been obtained from previous years publications of the Census of India. Administrative boundaries were taken into consideration for delimiting the periphery of Ranchi city. Based on observations the cartographic work has been done.

Findings and Discussion

Network means complex system of railways, roadways or in simple words transportation. Before beginning about the network or the connectivity of the rural markets, with respect to Ranchi city we must know the distance of rural markets from the Ranchi city (Table 2-4) and what exactly transportation is and what are its limits and importance in a regional/country's development. Transportation is the movement of goods and persons from place to place and the various means by which these movements are accomplished. The word infrastructure is used to devise all the facilities that a economy has it place, including its transportation, network of roadways and railways as well as the vehicles to use them. An adequate infrastructure is a perquisite to economic development. Transportation and communication is important for developing and strengthening social, political and commercial ties in the periphery of Ranchi city. These ties must be developed before trade can be handled on a regular basis. Transportation is necessary for goods to reach the market where they can be handled on a regular basis i.e. sold or exchanged for other merchandized or services. Much of the dynamic growth of the peripheral region can be attested to transportation. Means of transportation are the basic needs for all regions for further growth. One good example of a region being affected by its proper transportation system is Ranchi city.

Table-2. Distance of Rural Markets of Kanke Block from Ranchi City

S. No.	Haats	Market Days	Distance Covered (in Kms)
1.	Pithouriya	Thursday, Sunday	16
2.	Uruguttu	Saturday	30
3.	Katamkuli	Tuesday	20
4.	Sirango	Friday	16
5.	Ichapiri	Thursday, Sunday	16
6.	Kumhariya	Monday	25
7.	Hundur	Saturday	14
8.	Neuri	Monday, Thursday	15
9.	Dubhiya	Thursday	13
10.	Murum	Friday	15
11.	Bukru	Tuesday	12
12.	Manatu	Wednesday, Saturday	10
13.	Simliya	Wednesday	10

14.	Jhiri	Tuesday	5
15.	Pandra	Tuesday	4
16.	Garu	Wednesday, Friday	10
17.	Sukurhuttu	Monday, Friday	14
18.	Patratu	Tuesday	14
19.	Hombai	Saturday	14
20.	Mesra	Monday, Thursday	14

Source: Field Survey

Table-3. Distance of Rural Markets of Namkum Block from Ranchi City

S. No.	Haats	Market Days	Distance Covered (in Kms)
1.	Tati	Tuesday, Friday	15
2.	Barganwan	Thursday, Sunday	9
3.	Khijri	Thursday, Sunday	10
4.	Hardag	Tuesday	18
5.	Dundigarha	Sunday	25
6.	Nachaldag	Saturday	27
7.	Ubriya	Thursday	18
8.	Ulatu	Friday	40
9.	Jareya	Sunday	35
10.	Koeinribera	Wednesday	28
11.	Kharsidag	Tuesday	5
12.	Sarwal	Wednesday	25
13.	Ganrke	Friday	4
14.	Rampur	Friday	30
15.	Lali	Friday	45

Source: Field Survey

Table-4. Distance of Rural Markets of Ratu Block from Ranchi City

S.No.	Haats	Market Days	Distance Covered (in Kms)
1.	Hochar	Friday	14
2.	Jari	Wednesday	23
3.	Hurhuri	Thursday	15
4.	Ratu	Sunday	10
5.	Makhmandro	Monday, Thursday	15
6.	Lahna	Monday, Thursday	10
7.	Belangi	Monday, Thursday	13
8.	Tigra	Friday	26
9.	Bajpur	Monday, Thursday	18
10.	Nagri	Tuesday, Friday	15
11.	Naro	Tuesday, Friday	17
12.	Bhonra	Tuesday	15
13.	Daladili	Wednesday, Sunday	12
14.	Saparom	Monday, Thursday	12
15.	Harser	Thursday, Sunday	10
16.	Baridih	Sunday	15
17.	Chete	Sunday	10

Source: Field Survey

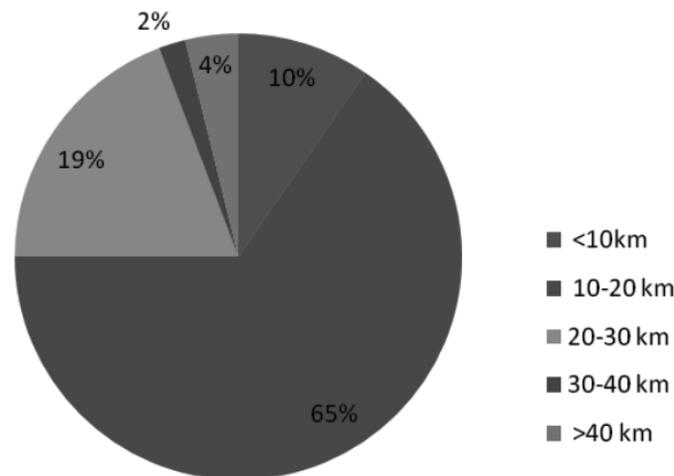
From Table 5 and Fig 2 it is inferred that of the 52 rural markets studied from 3 peripheral blocks, 65% of the rural markets are at a distance of 10-20 km from Ranchi city. This provides the locational advantage to the sellers/producers of being close to the Ranchi city as it gives them better access to wide range of customers. 19% of the rural markets are held at a distance of about 20-30 km from Ranchi city. It is alarming to notice that only 6% of the rural markets are at a distance of >30 Km.

Table-5. Distance of Rural Markets from Ranchi City

S. No.	Name of Block	No. of Markets	<10km	10-20 km	20-30 km	30-40 km	>40 km
1.	Kanke	20	02	15	03	00	00
2.	Namkum	15	03	04	05	01	02
3.	Ratu	17	00	15	02	00	00
Total		52	05	34	10	01	02

Source: Computed from Table 2, 3 and 4

Fig-2. Distance of Peripheral Rural Markets from Ranchi City (in %)



Roadways

The development of markets means the development of the land. Almost the entire market centre must be connected into central villages and this central village should be linked at least by unmetalled roads with the surrounding villages so that there may be an easy access for the villagers to the market centres. The rural markets must be linked with metalled roads with block development centres on higher order

centres. This will help to a great extent in the rapid development of these rural markets to a peak point from where a rapid development of other areas will also start.

Table 6-8 presents a statistical picture of the connectivity of rural markets by roadways.

Table-6. Connectivity to Rural Markets of Kanke Block

S. No.	Haats	Paved Road*	Mud Road*
1.	Pithouriya	2	1
2.	Uruguttu	2	1
3.	Katamkuli	1	1
4.	Sirango	2	1
5.	Ichapiri	2	1
6.	Kumhariya	1	1
7.	Hundur	2	1
8.	Neuri	2	1
9.	Dubhiya	2	1
10.	Murum	2	1
11.	Bukru	1	1
12.	Manatu	2	1
13.	Simliya	1	1
14.	Jhiri	2	1
15.	Pandra	1	1
16.	Garu	2	1
17.	Sukurhuttu	1	1
18.	Patratu	1	1
19.	Hombai	1	1
20.	Mesra	1	1

Source: Field Survey (Note: *1=Yes, 2=No)

Table 7. Connectivity to Rural Markets of Namkum Block

S. No.	Haats	Paved Road*	Mud Road*
1.	Tati	1	2
2.	Barganwan	1	1
3.	Khijri	1	1
4.	Hardag	2	1
5.	Dundigarha	2	1
6.	Nachaldag	2	1
7.	Ubriya	2	1
8.	Ulatu	2	1
9.	Jareya	2	1
10.	Koeinribera	2	1
11.	Kharsidag	1	2
12.	Sarwal	2	1
13.	Ganrke	1	2
14.	Rampur	1	1
15.	Lali	2	1

Source: Field Survey (Note: *1=Yes, 2=No)

Table-8. Connectivity to Rural Markets of Ratu Block

S. No.	Haats	Paved Road*	Mud Road*
1.	Hochar	1	1
2.	Jari	1	1
3.	Hurhuri	1	1
4.	Ratu	1	2
5.	Makhmandro	1	1
6.	Lahna	2	1
7.	Belangi	1	1
8.	Tigra	1	1
9.	Bajpur	1	1
10.	Nagri	1	1
11.	Naro	1	1
12.	Bhonra	1	1
13.	Daladili	2	1
14.	Saparom	1	1
15.	Harser	1	1
16.	Baridih	2	1
17.	Chete	2	1

Source: Field Survey (**Note: *1=Yes, 2=No**)

The two prominent types of network-roadways and railways play a decisive role in the development of rural markets. There are mud roads, paved roads and concrete roads leading to the different rural markets. From Table 9 it is inferred that even today Kanke block has 20 rural markets and all of them are accessible by mud roads. Ratu block has 16 rural markets which are well connected by mud roads. Namkum block has 6 and 12 rural markets with paved road and mud roads respectively linking rural markets of the block. From Table 9, it is evident that all the rural markets are not linked with the Pucca roads. Therefore, Plans must be formulated to join all the corridors which will necessarily run throughout rural areas providing some amount of connectivity to peripheral rural markets/villages. There must be special efforts to connect these rural markets with all weather roads so that they are accessible throughout the year.

Table-9. Blockwise Connectivity to Rural Markets

S. No.	Name of Block	No. of Markets	Paved Road		Mud Road	
			Available	Not Available	Available	Not Available
1.	Kanke	20	09	11	20	00
2.	Namkum	15	06	09	12	03
3.	Ratu	17	13	04	16	01
Total		52	28	14	48	04

Source: Computed from Table 6, 7 and 8

The weekly markets located in these areas have very poor business. Only the local villagers come here on the market days. Outsiders do not come to these markets. Traders nearer from Ranchi go there to sell their readymade garments, household utensils, etc.

Some rural markets are very far away from proper communication lines. This hinders outsiders from coming into the market. Taking the advantage of the situation, traders do very less transactions with the local cultivators in these markets. The absence of communication lines has resulted in the closer of the markets to the outside world. A visit to these places revealed that the basic amenities which help in the socio-economic growth of the area were completely lacking. Products such as insecticides and pesticides and fertilizer are completely absent from these markets.

The only solution to get rid of these problems is to maintain proper communication lines with one place, however interior they might be. In rural setting, transportation alone can break their isolation. Due to lack of transportation facilities large and wide price variations are found from place to place.

Railways

The railways in Ranchi have done a lot to unify and modernize and develop the rural markets as the railway network runs through rural areas connecting peripheral village and other parts of the country. So, railways always play an important role in rapid development. They are an easy and cheap means of transportation. But in the case of the development of rural markets, they have a slightly less important role to play than the roadways. It is because of the fact that the railway network is not very vast and the rural areas are not properly connected and only a few markets have such location.

Railways provide an easy access for the villagers to the rural markets (Table 10-12). It is clear from Table 13 and Fig 3 that 17 rural markets are linked by railways within a distance of >10 km in the Kanke block. Rail transport is available only at a distance of >10 km in Namkum block for 11 rural markets. Only 10 rural markets are connected by rail in Ratu block at a distance of >10 km. Though railway connectivity is available in all the 3 peripheral blocks, still on 5 rural markets (10%) have railway facility at a distance <5 Km. Due to this the producers/sellers have to carry their goods to long distance. This encourages the middlemen to intervene which causes huge loss to the producers/sellers as they take away a large share of profit.

Table-10. Connectivity to Rural Markets of Kanke Block by Railways

S. No.	Haats	Distance of Railway Services Available*
1.	Pithouriya	3
2.	Uruguttu	3
3.	Katamkuli	3
4.	Sirango	3
5.	Ichapiri	3
6.	Kumhariya	3
7.	Hundur	3
8.	Neuri	3
9.	Dubhiya	3
10.	Murum	3
11.	Bukru	3
12.	Manatu	3
13.	Simliya	3
14.	Jhiri	2
15.	Pandra	1
16.	Garu	3
17.	Sukurhuttu	3
18.	Patratu	2
19.	Hombai	3
20.	Mesra	3

Source: Field Survey (Note: *1=<5 Km, 2=5-10 Km, 3=>10 Km)

Table-11. Connectivity to Rural Markets of Namkum Block by Railways

S. No.	Haats	Distance of Railway Services Available*
1.	Tati	1
2.	Barganwan	2
3.	Khijri	3
4.	Hardag	3
5.	Dundigarha	3
6.	Nachaldag	3
7.	Ubriya	3
8.	Ulatu	3
9.	Jareya	3
10.	Koeinribera	3
11.	Kharsidag	3
12.	Sarwal	3
13.	Ganrke	2
14.	Rampur	2
15.	Lali	3

Source: Field Survey (Note: *1=<5 Km, 2=5-10 Km, 3=>10 Km)

Table-12. Connectivity to Rural Markets of Ratu Block by Railways

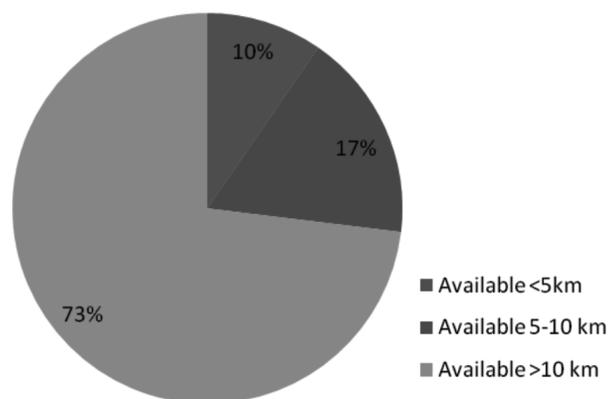
S. No.	Haats	Distance of Railway Services Available*
1.	Hochar	3
2.	Jari	3
3.	Hurhuri	3
4.	Ratu	3
5.	Makhmandro	3
6.	Lahna	2
7.	Belangi	3
8.	Tigra	3
9.	Bajpur	2
10.	Nagri	1
11.	Naro	1
12.	Bhonra	2
13.	Daladili	2
14.	Saparom	3
15.	Harser	3
16.	Baridih	1
17.	Chete	3

Source: Field Survey (Note: *1=<5 Km, 2=5-10 Km, 3=>10 Km)

Table-13. Blockwise Availability of Railways to Rural Markets

S. No.	Name of Block	No. of Markets	Available <5km	Available 5-10 km	Available >10 km
1.	Kanke	20	01	02	17
2.	Namkum	15	01	03	11
3.	Ratu	17	03	04	10
Total		52	05	09	38

Source: Computed from Table 10, 11 and 12

Fig-3. Availability of Railways to Rural Markets (in %) in Peripheral Blocks of Ranchi City

Ranchi Jn., Tatisilwai, Hatia and Namkum are the main stations in the region. They act as entrepot for goods from one part of the region to the other parts. The broad gauge double railway line railway track traverses the city area for nearly 29 km in length with four station namely, Ranchi, Hatia, Namkum and Tatisilway. Railway is a cheap means for rural people to transport their goods.

Muri-Dhanbad, Ranchi-Rourkela lines and the Ranchi-Lohardaga line (over a distance of 67 km) also play a significant role in the development of the rural markets. One thing is quite apparent that the middlemen are playing an important role in the transaction of goods. It has been observed that green vegetables from remote villages are brought to Ranchi station, where the agents of the middlemen buy them in bulk and bring them to the urban centers where the demand is greater. This practice has come in after rapid urbanization and industrialization. In the end one can say that, in this hilly area, road transport is advantageous and easier to use than the railways. But let us not neglect the importance of railways, for it is cheaper and faster than any other mode of transportation which would help to develop the rural markets. Railways will help in the diffusion of social development in the interior of the city.

It has been emphasized earlier that transportation is a key factor in development of urban land use along with the peripheral areas. It directly affects the development of a market specially that of the periphery. This general principle is well applicable to the development of the peripheral rural markets of the city. In fact, the city has grown around the convergence points of highways.

As there is no proper road connection, the peripheral growth has, however, occurred only along the highways on which the public transport system is available, though the frequency of services differs from section to section. An efficient network of roads, connecting central area helps the growth of a city around its inner zone. In Ranchi, such development has been hindered in the peripheral area due to lack of proper communication facilities, especially fast moving transport services.

Infact, barring a few peripheral areas, the frequency of fast moving transport is almost negligible in the periphery. Cycle, Rickshaw and auto rickshaw is the only easily available means of public transport in most of the peripheral rural markets. Mandal (2000) highlighted that Urban centres are conspicuous by virtue of their services which they perform for the rural inhabitants. In Bihar plain the centres of the highest ranks are Patna, Muzaffarpur, Gaya, Darbhanga, Motihari and others to name a few. It is apparent that the hinterland depends upon these urban centres and, in turn, these centres depend on the

surrounding hinterland. Mishra (1977) while delineating the 'rural-urban continuum' highlighted the spatial interaction at various levels of functional hierarchy of central places in Raichur district, India. He considered all the central places as growth foci which will develop into small towns of Raichur rural-urban continuum, bridging the existing gap between towns and rural settlements in Raichur district.

Centrality of Rural Markets

Rural markets fulfill all the basic needs of the rural people, as such, they are downward terminus for manufactured goods and the upward entry point for the farm produce that flow through the regional marketing system. Centrality is a major aspect of rural markets. Fig 4 and 5 explains the hierarchy of service centers, range and Threshold of peripheral rural markets of Ranchi. It is evident from Fig 6 that each order of central places are interrelated to each other where Zone I denotes the sphere of Regional Markets, Zone II marks the limit of sphere of Town Markets and Zone III highlights the lowest order central places or sphere of Village/Rural Markets which serves the nearby villages/Auxiliary central places. This provides efficient marketing, and in simple form, allows consumers in lower order centers, to choose between three competing central places. The network is the most economical arrangement for traffic flow, i.e., *traffic optimizing* situation. The lower order centers lies along straight lines between higher order centres. A central place serves one half of the population of six lower order centres and its own population. They serve as nuclei of exchange and barter, places of entertainment, worship, meeting of friends and getting new from beyond the sphere of village (Singh, 1966). Moreover, it is at the rural markets that the village microcosm touches the greater external world, where rural milieu represents a cross section of the country gentry of various social grades and strata. (Singh, 1962).

Fig-4. Hierarchy of Service Centers of Peripheral Rural Markets

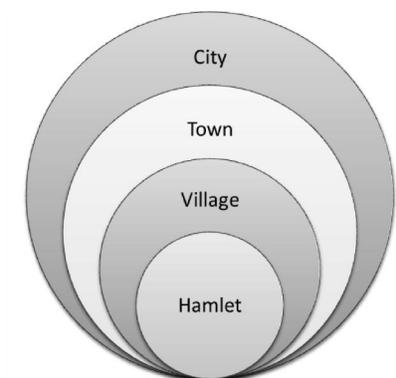


Fig-5. Range and Threshold of Peripheral Rural Markets

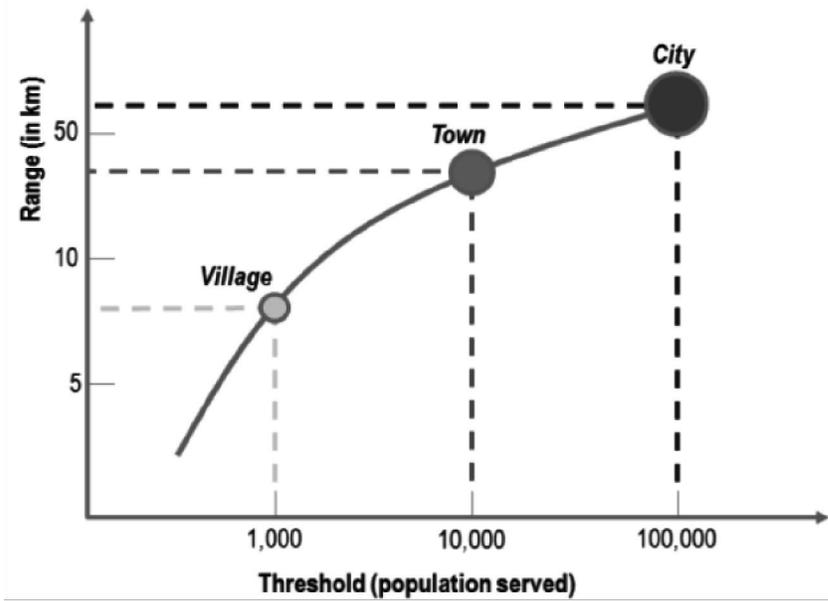
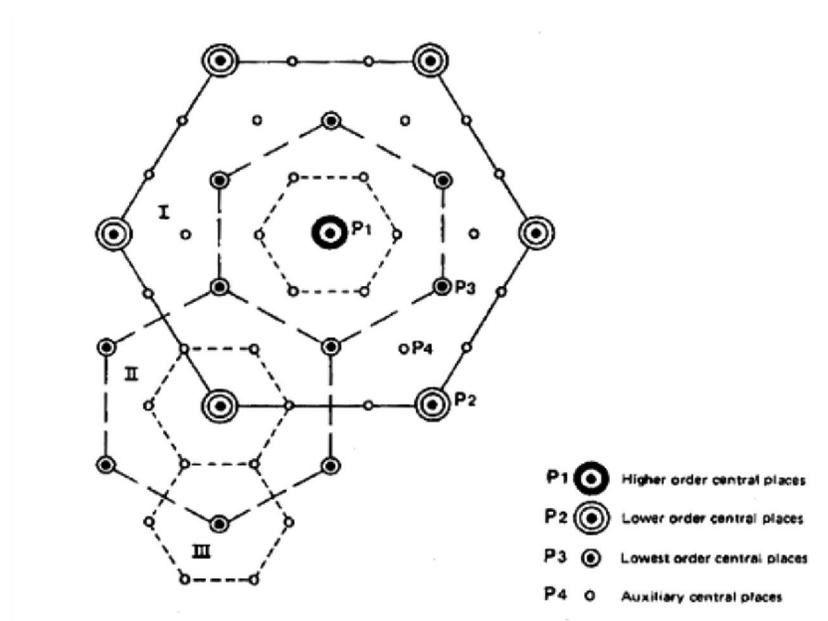


Fig-6. Central Place Networks



Benefits of transport linkage improvements:

Transport linkage provides support to a range of rural development activities, such as:

- providing improved access to areas outside the village, so that agricultural surplus can reach collection centres and markets more rapidly;
- reducing the time burden on family members, particularly (in some cultures) the younger and female members of the family;
- reducing damage to perishable crops during transport;
- reducing operating costs for vehicle users; and
- providing greater opportunities for social and educational journeys and providing more direct and cost-efficient access to public services, such as schools and health facilities.

Demand Responsive Transport (DRT) services, or Para-transit is a solution to transport linkage problem in periphery of Ranchi city as it offers public transport providers a more flexible and potentially more cost effective delivery option than conventional bus services, particularly in situations of low demand.

Conclusion

Thus, it can be concluded that to serve the existing and expanding needs of the city and its periphery, the roads are inadequate. As most of the roads are unmetalled, it is proposed to widen and improve the existing roads. So, that the rural markets of Ranchi and its periphery is made conveniently accessible to all parts. During field study, it was observed that roads along which rural markets are held are too narrow to allow free flow of traffic. In periphery of Ranchi, two types of network predominate (Roadways and Railways). Of which roads are the most important from the viewpoint of use, accessibility and development of rural markets. As the population is increasing rapidly it is high time for the construction of new roads and conversion of kuccha roads into pucca roads. A frequently suggested solution to this growing transport challenge is an enhancement through Demand Responsive Transport (DRT) services. Brake, Nelson and Wright (2004) suggest that DRT is "an intermediate form of public transport, somewhere between a regular service route and variably routed, highly personalised transport services".

The existence of rural markets is threatened due to the lack of connectivity as the producers/sellers are not getting adequate benefit from their produce as lot of profit is lost by the middlemen, cost of transport, perishable goods rot during the time taken to reach the market. Rural market is the essence of the rural economy. It is the

network that is giving the facilities to rural markets to flourish themselves in the periphery of Ranchi city and also providing significant infrastructure to prevent the rise in urban-rural disparities in growth and development.

Transportation acts as a catalyst for initial investments by many Smart Cities. Every aspect of Smart City planning has a contribution to emergency preparedness, such as smart lighting, smart transportation, smart energy, and of course, public safety. Ranchi is one of the 100 smart cities under the Smart City Mission of the Government of India. Accordingly, the Government of Jharkhand envisions to make Ranchi Smart City: A Knowledge hub for educational excellence and an efficiently managed traffic and transportation system based city aided by Information Technology (IT) in all aspects to reduce the travel time of commuters and incidents of traffic violations to make Ranchi a safe city for pedestrians and commuters.

REFERENCES

- Anderson, K., John, C., & Will, M. (2011). Would freeing up world trade reduce poverty and inequality? The vexed role of agricultural distortions. *The World Economy*, 34(4), 487-515.
- Anderson, K., Ernesto, V., & Dominique, van der M. (2010). Global poverty effects of agricultural and trade policies using the LINKAGE model. In Kym Anderson, John Cockburn & Martin Will (Eds.), *Agricultural Distortions, Inequality and Poverty*. Washington DC: World Bank.
- Census of India. (2011). Primary Census Abstract, Office of the Registrar General & Census Commissioner, New Delhi.
- Census of India. (2011). District Census Handbook Ranchi, Series-21 Part XII-A, Office of the Registrar General & Census Commissioner, New Delhi.
- Dash, N. (2007). A historical perspective of growth and development of market centres in the Cuttack-Bhubaneswar region, Orissa. *Hill Geographer*, 23(1, 2), 73-84.
- Edaku, C. (2010). Bridging the dichotomy: The role of small and medium sized urban centres in rural development. *Journal of Development Studies*, 7(1), 111-130.
- Global Monitoring Report. (2013). *Rural-Urban Dynamics and the Millennium Development Goals*. Washington DC: World Bank and International Monetary Fund. Retrieved from http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1327948020811/8401693-1355753354515/8980448-1366123749799/GMR_2013_Full_Report.pdf
- Inoni, O.E., & Omotur, D.G. (2009). Effect of road infrastructure on agricultural output and income of rural households in delta state. *Agricultura Tropica Et Subtropica*, 42(2).
- Brake, J., Nelson, J. D., & Wright, S. (2004). Demand responsive transport: Towards the emergence of a new market segment. *Journal of Transport Geography*, 12, 323-337.
- Lado, C. (1988). Some aspect of rural marketing systems and peasant farming on Marach sistrict Southern Sudan. *Transaction*, 13(3), 361-374.
- Mandal, R.B. (2000) *Urban Geography: A textbook*. New Delhi: Concept Publishing Company.

- Mishra, G.K. (1977) Rural-Urban Continuum, *Indian Journal of Regional Science*, IX (1), pp36-44
- Majumder, R. (2002). Infrastructure and economic development: A regional analysis. Unpublished Ph. D. Thesis at Jawaharlal Nehru University, New Delhi.
- OECD. (2013) Rural-urban partnerships: An integrated approach to economic development. Paris: OECD Publishing. Retrieved from http://www.oecd-ilibrary.org/urban-rural-and-regional-development/rural-urban-partnerships_9789264204812-en
- Omole, F.K. (2002). Analysis of market typology and functions in the development Osun state, Nigeria. *International Journal of Business and Common Market Studies*, 1, 163-176.
- Posel, D., & Colin, M. (2013). Circular migration: A view from destination households in two urban informal settlements in South Africa. *Journal of Development Studies*, 49(6), 819-831. doi:10.1080/00220388.2013.766717
- Reddy, S. (1994). *Periodic markets and rural development*. New Delhi: Ashish Publishing House.
- Singh, K. N. (1962). Rural markets and rural centres in eastern Uttar Pradesh- A geographical analysis. Ph. D. Thesis (Unpublished). Department of Geography, BHU, Varanasi, p. 273.
- Singh, S.M. (1966). The stability theory of rural central place development. *NGJI*, XI(1), 14.
- Sinha, V.N.P., & Singh, L.K.P. (2003). *Jharkhand- land and people*. New Delhi: Rajesh Publications.
- Thorat, S.K., & Sirohi, S. (2002). *Development of rural infrastructure in India: Trends and emerging issues. State of Indian farmer: A millennium study*. Ministry of Agriculture, Government of India, New Delhi.
- Uchenna, M. B., Ezech, A. C., Chepngeno-Langat, G., Kimani, J., Oti, S., & Beguy, D. (2012). Family ties and urban-rural linkages among older migrants in Nairobi informal settlements. *Population, Space and Place*, 19(3), 275-293.
- Velayudhan, S. K. (2008) 'Sustainability of Haats and retail stores in Rural Markets: A Study Across the States in India. Retrieved from <http://dSPACE.iimk.ac.in/bitstream/handle/2259/130/RM175.pdf?sequence=1>
- World Bank (1997). *Rural development: Vision to action. A sector strategy paper*. Washington DC: The World Bank. Retrieved from <http://documents.worldbank.org/curated/en/673121468150886687/pdf/532270WP0Rural10Box345600B01PUBLIC1.pdf>