

TRANSPORT DEVELOPMENT AND PRESENT ROAD NETWORK PATTERN: AN OVERVIEW

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ABSTRACT

The major part of the Shahpura tehsil is an undulating sandy tract. The greater part of its area being sandy and devoid of motor- roads and modern transport facilities. The main means of transport have been camels and bullock-carts, which served not only this tehsil but the entire State of Rajasthan for thousand of years. There were hardly any road in the sense in which we understand this term¹, "for handling consignments of produce and merchandise and facilitating travelling bullock-carts, as mentioned by the nontemporary writers and depicted by artists, where commonly used in eastern parts of Rajasthan, where ground was generally even and hard.

Keywords: Motor- Roads, Consignments of Produce, Travelling Bullock-Carts, Hardground.

Introduction

Transport Development

For uneven tracts of hilly regions pack-horses and bullocks were used". "In deserts, camel was the most convenient means of travelling and transport. Humayun had a large number of them when he crossed the desert of Rajasthan, carts drawn by the camels were also used in the old State of Jaipur". The roads both in village and towns were very sandy and were practicable for carriages which were drawn by bullocks and camels or by horses. Horses were used by the Jagirdars, Bhomiss and Barbers. The Kumhars used donkeys as a means of transport. These means of transport have now become absolute. "The gradual development of roads indicates that trade had been a great incentive to road building and the demand for goods not supplied locally stimulated road constructing".

For many years road system was grossly inadequate for the needs of the tehsil as the roads were mere sandy tracts. The village paths were So narrow that even a jeep could not pass through them. Therefore, the motor transport could not develop much due to the shortage of motorable roads in the tehsil.

Motorised transport came to this tehsil as late as 1965. Before this there was only one National Highway No. 8, 8, across the middle part of tehsil. Shahpura tehsil total length of National Highway is 18 kms only.

Roads and Road Transport

The development of roads appears to have been slow even during the 19th century. Till independence, transport organisation were not given the attention they deserved for a developing state, with the result that many villages in this tehsil were untouched by the progress made elsewhere.

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After independence when Rajasthan Panchayat Act, 1951 came into force, the village panchayats started broadening the existing paths and laying new tracks to connect the villages with each other. During monsoon some portions of these roads and village-paths used to cover with water and resulted in breaking of the connections of between the villages of the tehsil. Hence the traffic continued to be carried by camels and bullock-carts in the interior regions of the tehsil where there were no roads.

Prior to implementation of the First Five Year Plan, Rajasthan State was backward in roads and the sandy paths were fixed from one village to another. Accordingly due attention was paid towards the development to existing roads and increasing the mileages. Roads in the Shahpura tehsil were mere tracks full of dust in the summer season, and of mud and water in the rainy season. There were no metalled roads in this tehsil except the National Highway No. 8, about 18 kms length to the east of Shahpura. In the town of Shahpura there was a metalled road for horse driven 'tongas' and in other towns where there were only sandy tracks, tongas were driven by camels. According to the Census of 1951, the following fair-weather roads had been demarcated. Nawalpur-Manoharpur-Shahpura 18 kms. In the interior of the tehsil, where road facilities were not available, camels, bullock-carts and horses still remained the chief means of transport.

During the year 1980-81 there were 61 kms of roads in the tehsil. Out of this road length, 27 kms were metalled, and 18 kms formed National Highway. In spite of road development works in the tehsil only a small number of villages in the tehsil are served by pucca roads. A large number of villages are accessible by kutcha roads only, while a good many of them were not connected by roads. Under famine and drought relief schemes, 92 kms of kutcha roads were constructed from time to time.

There are three types of highways viz.,

- **National Highway**

Only one National Highway No. 8 passes through the tehsil. The total length of this national highway in the tehsil 18 kms which is painted.

- **State Highway**

There are two roads which fall within the category of state highways, their total length being 19 kms in present time. All the two state highways are painted and are motorable throughout the year.

- **Other Roads, Village Roads and Approaches to Village**

Other tehsil roads are also of the same type as major tehsil roads except that they are subject to more frequent interruptions of traffic during the rains. They serve market places and are generally painted and have water bound surface. The village roads and approaches to village are mostly fair weather roads and are not motorable throughout the year.

More than 85 per cent of settlements of the tehsil are now connected with the roads and bus routes, on which buses of private companies and of Rajasthan State Road Transport Corporation (RSRTC) are serving well. This Corporation operates only passenger transport services, Rajasthan State Road Transport Corporation is serving the following routes in the tehsil.

Jaipur – Shahpura

Jaipur – Manoharpur – Khora – Larkhani – Gathwari

Jaipur – Chomu – Dholi – Amarsar – Ajitgarh

Jaipur – Dholi

Shahpura – Ajitgarh – Neem-ka-Thana

Amarsar – Kareeri

Manoharpur – Gathwari

Present Road Network Patterns

A set of transportation lines or routes which may and frequently do, join and cross at junctions forms a transportation net. Basically a transportation network may be regarded as a set of inter-connected routeways along which movement takes place. But in addition to its function of distribution, whether of commodities or people, the network also serves to link locations together, e.g. a farm to a market, a factory to a railway station, one town to another. At this point it is worth emphasising that networks may change with time, they may become more or less, complex and they may change their functions.

Roads are seldom laid at random, as they normally fulfil specific needs and demands of the people living in the region. The layout of roads therefore, developed a system or pattern of network which may be identified in many ways. The simple method is to relate the patterns with the design of network. Such patterns are mainly influenced by the physical, cultural, economic factors.

The following patterns of road network in Shahpura tehsil can be identified.

- **Circuit Pattern**

This pattern formed by closed finite paths in which the initial node coincides with the terminal nodes. These patterns are the characteristics of plain topography with rich agricultural land. The circuit patterns observed in the study region can be subdivided into two types:

- Quadrilateral pattern
- Delta pattern
- **Quadrilateral Pattern**

These are integrated pattern with circuits and are conspicuous in the central-eastern part of Shahpura tehsil. In this pattern the circuits are formed by a plane figure bounded by four straight roads. The following are the examples.

- Roads connecting Amarsar-Radawas, agatpura and back to Amarsar.
- Roads connecting Nawalpura-Bishangarh, Nawalpura-Bishangarh, Amarpura, back to Nawalpura.
- Roads connecting Shahpura-Sahiwad, Ajitgarh, back to Ajitgarh.
- Roads connecting Jagatpura-Majipura and back to Jagapura.
- Roads connecting Shahpura-Manoharpur, Bishangarh, Nathawala and back to Shahpura.

- **Delta Pattern**

This is also known as a triangular pattern. In this sub-type the circuits are formed by plane figure bounded by three roads. Since it resembles the greek letter delta, it may also be called delta pattern. In river delta the trunk stream branches out to join further down, so does a road has a tendency to bifurcate and join again with two nodes to complete a circuit.

The following are the examples:

- Road from Manoharpur bifurcates at Nawalpura to join again at Bishangarh and Khojawala to complete a delta circuit.
- Road from Bishangarh branches out of Nathawala to join again at Shahpura and Manoharpur to complete delta circuit.

- **Radial Pattern**

The roads radiate from a central node in different directions in this pattern e.g.,

- From Shahpura roads are radiating to Devan, Devipura, Dholi, Rampura and Manoharpur, Rajpura.

- **Herringbone Pattern**

This pattern short transverse lines linking together by a longitudinal line e.g., Amolada to Amolada to Manoharpur, a longitudinal road connected by transverse roads from Gathwari, Khumawash, Chharsa, Surana and Nithara.

- **Identification of Nodes and Linkages: Selection of Nodes**

Transportation geography is a special branch of human geography. Men and places are predominant element of study. Human interaction in space involves people of certain places interacting with people of other places. Without either people or places there is no interaction. These interaction leads to movement. Thus the nodes are the geographical locations from where either the movement generates or where the movement terminates. Nodes are both "source" and "sinks" of all types of interaction and movement. Nodes are the places from where there are many types of modes. Each one with its own particular type of interaction but certain common themes of interaction may be recognised. In the study region 64 nodes have been selected on the basis of the following criteria :

- **Number of Road Junction**

Nodes with three or more road junction e.g., Shahpura, Manoharpur, Khora-Larkhani, Dhanota, Amarsar and Bishangarh.

- **Population**

In view of distribution and density of the study region, population of 5,000 persons or above has been taken as the criteria for the primary nodes e.g. Shahpura, Manoharpur and Kareeri. Settlements with 2000-5000 persons form the secondary nodes e.g., Amarsar, Khora-Larkhani, Rampura, Dholi etc.

- **Location**

Location of the node in relation of the road termination, nodes have been Larkhani etc. identified. They are Dholi, Dhanota, Khora

- **Relative Distance**

A tehsil type of nodes have been selected on the basis of the selective distance of a node from the primary nodes i.e. the nodes with the population 2,000 or more but lying beyond 5 kms of the primary nodes have been considered separate node. The arbitrary distance of 5 kms have been taken in view of the terrain, density of population and the agricultural economy.

- **Specific Function**

In this category nodes which fulfil specific function such as administrative, tourism, religion etc. are included. There is no node in study region which can be regarded as a separate node on the basis of specific function. The selected nodes of the study region satisfy one or more of the first four criteria alongwith the functional criteria.

On the basis of the above criteria nodes have been divided into following three types.

Table 1: Types of Nodes and their Numbers

S. No.	Revenue Circle	Primary Nodes	Secondary Nodes			Tertiary Nodes	Total
			(A)S.E.N.	(B) B.E.N.			
				I	II		
1.	Amarsar	1	13	6	-	2	22
2.	Manoharpur	1	15	4	1	2	23
3.	Shahpura	1	12	5	-	1	19
	Total :	3	40	15	1	5	64

Primary Nodes

Nodes with three or more road junctions with population of more than 5000 persons have been termed as a primary nodes. There are 3 primary nodes. All the revenue circle headquarters of the study region also come under this category e.g., Amarsar, Shahpura and Manoharpur.

Shahpura is the foremost primary nodes with one junction and population of 12,669 persons (Census of India, 1981) and fulfilling the administrative religion, tourist, economic facilities. Other examples are Amarsar and Manoharpur.

Secondary Nodes

These are generally the end node, where the road terminate and population size of the settlement is above 2,000 persons. There are 56 secondary nodes. Two types of the secondary nodes have been identified.

- **Simple End Nodes**
- **Boundary End Nodes**
- **Simple End Nodes :**

Those nodes located beyond 5 kms from the primary nodes with population of less than 5,000 persons came under this types. There have been no road junction and the road finally terminate at this node. There are 40 simple end node e.g., Majipura, Raipura, Hanutpura, Rajpura, Let-ka-Was, Bichpuri, Rampura, Amarpura etc.

- **Boundary End Nodes**

These nodes are situated near the administrative boundary of the study region. There are considered as the end nodes where road do not terminate. The boundary and nodes can further by subdivided in two types:

- Simple Boundary End Nodes: These end nodes situated at boundary of the study region with extra regional extension of the route. They have population size of over 2000 persons. There are 15 simple boundary end nodes.
- Junctional Boundary End Nodes: These are nodes with three or more road junctions located beyond 5 kms of the primary nodes and population over 2000 persons. There is one junctional boundary end nodes e.g., Khora-Larkhani.

- **Tertiary Nodes**

These are unique and special nodes. Nodes with three or more junctions located beyond 5 kms of the primary nodes with population less less than 5,000 persons are termed as tertiary nodes. Thus, in this unique type of node simple end nodes have more population than tertiary node. There are There are 5 tertiary nodes.

Characteristics of Nodes

The nodes have varied locations and distribution which determine their functions and the salient characteristics of the node are :

- The nodes are both 'sources' (origin) and 'sinks' (destinations) of interaction receiving and relaying flow. The amount of movement originated and received by any node is mainly related to its size.
- The second function of nodes is to relay movement as they transit flow to other nodes. Shahpura, Manoharpur, Nathawala are important relaying nodes.
- Another significant characteristics of nodes in a network is the gateway function which means that they act as entry and exist points for a region. In the region under study Dholi, Manoharpur, Khora-Larkhani, Shahpura, Amarsar, Dhanota are good examples.
- The distribution of nodes in the region is uneven. The hypothetical distribution is either clustered, random or uniform, clustering of nodes of nodes is observed in Shahpura and Manoharpur, Girdawar circle. Whereas random pattern of distribution of nodes is in the hilly tract of the north and the south and uniform pattern of distribution of nodes is in the middle part and the east part of the region.
- To understand relative locations of nodes are either arranged in alphabetic order or in terms of time, distance, cost, spatial sequence and so forth. In the present study the nodes have been arranged in alphabetic order to facilitate the representation of nodes in matrix.

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