

SUPERFAST EXPRESSES - A GEOGRAPHICAL CONSIDERATION

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ABSTRACT : The paper attempts to analyse the role of superfast trains in bringing New Delhi, the national capital, closer to different parts of the country. Seventeen superfast trains, trains originate from New Delhi. Using time distance techniques for the seventeen destinations, a comparison of time distance by the superfast express with that by the second fastest train is made. The comparison reveals that the superfast expresses have been extremely useful in reducing the time for travel to New Delhi particularly from peninsular India, which is reflected in the decrease in time distance.

The reduction in time for travel is possible only after a minimum distance and hence superfast expresses are more effective for long distance journeys than for short distance journeys. As many as ten state capitals have benefitted from these trains in terms of their link with the national capital.

Introduction

Geography has been defined as a discipline in distance (Watson, 1955). Distance as a factor influences human decisions from those going to work or marketing to those of buying of a new house. The frictional effect of distance has, thus, resulted in variations of different human activities, in an order over space.

Distance is a variable that can be measured in several ways. Geographic distance (the length in Kilometers) is one basic measure of distance. In commuting studies, time rather than distance might be an appropriate measure because small distances in urban areas are equal to longer distances in the rural areas (Haggett, 1972). Taylor had used generalised isopleths, (which he called isochrones) to divide England and Wales into four zones in respect of accessibility by rail to and from London, Leeds, Liverpool, New Castle, Manchester and Birmingham (Taylor, 1938). In movement models, travel time,

transport costs or road distances weighed according to different kinds of road surface have proved more important than linear distance (Garner, 1970). Density distance, income distance, landvalue distance are some non-linear distance measures.

Distance forms a major dimension in the study of patterns over space. One such pattern over space which is of great national importance is the pattern of railway network of a country as 'the railways symbolise the human significance of a region...they hint at their (people's) going out and coming in' (O'Dell and Richards, 1971).

While the analysis of the pattern itself is interesting, another rewarding study could be to apply the concept of time distance to the network. The time distance also referred to as length, is measured in time units, usually conceived in terms of phenomena experience (Cole and King 1968). Thus places are located on the map according to the time taken to reach them from some centre rather than the distance.

Transport innovations which may be entirely new types of transportation or improvements in the existing types may lead to an increase in the speed of movement and thus reduce the time distance (Lloyd, 1972). Janelle has, in fact, developed a model to show the process of spatial reorganisation in response to transportation improvement (Janelle, 1969).

Aim of the Study

The study aims at the following:

(1) The analysis of time for travelling between New Delhi and different parts of the country.

(2) The analysis of the role played by Superfast Expresses originating from New Delhi in reducing the time for travel between New Delhi and destinations of these trains, in terms of time distance.

The study has been carried out on the basis of railway time-tables. The consolidated time-table 'Trains at a Glance' published by the Railway Board provided the information as the Indian Railway Bradshaw is no more available. Trains starting from Delhi, New Delhi and Hazarat Nizamuddin on 1st March 1979 have been considered and whatever station they originate from, they are assumed to have started from New Delhi, the national capital. Superfast expresses include Rajdhani Express, Jayanti Janata Expresses and such others that are run as superfast expresses and for which an additional surcharge is levied. The metergauge Jayanti Janata Express between Delhi and Ahmedabad has not been included following the direct broad gauge superfast express via Vadodra.

Time for travel between New Delhi and different parts of India

The time taken for travel between New Delhi and different parts of India is depicted in Fig. 1. These time intervals have been calculated with reference to about sixty eight mail and express trains, generally non-superfast, from New Delhi. It may be seen that all places accessible by railway can be reached at the maximum within sixty hours

from New Delhi. Trivandrum is the farthest place from New Delhi, a journey which takes 56 hours by a non-superfast express. (Jammu and Kashmir state north of Jammu Tawi has not been considered due to the absence of railway network there.)

That for reaching places, with increasing distance for New Delhi in southern parts of peninsular India, one needs more time for travel is well reflected in the map. Mangalore which is geographically almost on the same latitude as Madras, however, shifts farther away from New Delhi in terms of travel time due to a circuitous route. A direct link along the West Coast perhaps would have reduced the travelling time to Managalore.

In Orissa, it takes approximately 45 hours to reach Puri via Bina, Katni, Bilaspur and Kharagpur, (A journey with a change of trains at Howrah takes 30 hours). The long time required for the journey is on account of long halts at the intermediate stations as well as lack of direct link through Chattisgarh region into Orissa. Madras situated geographically farther than Puri is reached in shorter time.

Places in Saurashtra and Kutch regions of Western India also seem to be at a disadvantage. It takes a longer time to reach these places from New Delhi. The delays in journey result primarily because of travelling by meter gauge trains which are slow in speed. Mostly the lines are single track and stopping of the trains for crossing also retards the speed. It takes, for instance, 36 hours to reach Bhuj (1160 km).

In North India, the travel time appears more or less to vary directly with the distance. Almost the entire network here is of the broad gauge and that too on a terrain which is generally flat or gradually sloping. These two factors encourage faster movement of the trains.

The ease of travel and thus the relative decrease in travel time is also well marked in Eastern India in the Gangetic valley. To travel between New Delhi and Howrah, a

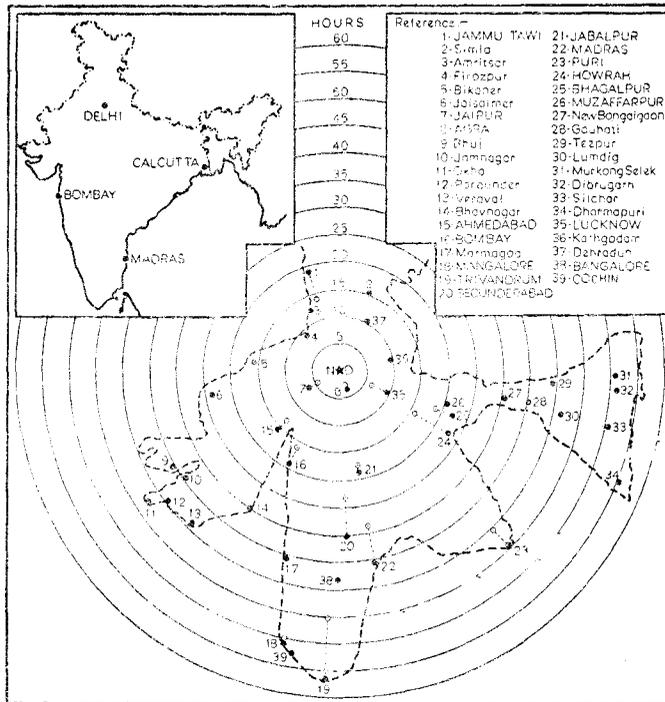


Fig 1 TRAVEL TIME FROM NEW DELHI TO SELECTED PLACES.

distance nearly two-thirds of that between New Delhi and Madras, it takes time less than two-thirds of the journey time between New Delhi and Madras. With the extension of the broad gauge railway up to New Bongaon that is directly linked with New Delhi, Assam has come closer in terms of travel time to New Delhi. In Assam and North Eastern India with only two major lines running on two sides of the Bramhaputra, time for travel from New Delhi changes in a regular pattern.

In the Terai region of Uttar Pradesh and Himalayan foothill region of Bihar, the secondary network of meter gauge railway acts as a feeder network increasing accessibility in terms of travel time from New Delhi.

Role of Superfast Expresses

Eighteen trains originating from New Delhi are classed as Superfast expresses. Table I lists them stating the place they connect, its distance from New Delhi, time

taken to travel by the Superfast express and also by the second fastest train running on the same line or route. Where the second fastest train is also a superfast express as in case of trains to the metropolitan cities viz. Bombay, Calcutta and Madras, it has been shown with a (+) sign. Places where no other direct link is available i. e. where there are no direct trains to New Delhi, are marked with an asterisk and travelling time in such cases is calculated assuming that the journey has been performed changing fast trains at minimum points. Of the three superfast trains between New Delhi and Howrah and New Delhi and Bombay, the two faster ones have been included.

The table shows clearly that in terms of travel by the superfast trains, trains to Ahmedabad, Bombay, Howrah, Madras, Bangalore and Trivandrum are really superfast. The places have been arranged in an increasing order of distance and comparisons

Table I
Superfast Expresses from New Delhi

| Place | Distance in km | Time taken to reach the place in hrs. & mins, by | | Name of the Superfast Express |
|--------------|-------------------|--|---------|----------------------------------|
| | | 1 | 2 | |
| Agra | 195 | 3.05 | 3.15 + | Taj Express |
| Jaipur | 308 | 4.30 | 7.15 | Pink City Express |
| Lucknow | 507 | 6.45 | 9.30 | Gomti Express |
| Jammu Tawi | 585 | 8.45 | 13.10 | Bombay J. Tawi Exp. |
| Jabalpur | 968 | 17.45 | 19.40* | Kutub Narmada Exp. |
| Ahmedabad | 1097 | 13.45 | 15.30* | Sarvodaya Exp. |
| Bhagalpur | 1199 | 19.00 | 22.00 | B' pur J. J. Exp. |
| Muzaffarpur | 1224 | 20.55 | 22.45* | M' pur J. J. Exp. |
| Bombay | 1384 | 17.30 | 19.15 + | Rajdhani Express |
| Howrah | 1445 | 16.30 | 23.45+ | Rajdhani Express |
| Secunderabad | 1619 | 22.55 | 31.55 | Andhra Pradesh Exp. |
| Puri | 2126 | 42.25 | 45.30 | Utkal Express |
| Madras | 2188 | 29.35 | 37.15 + | Tamilnadu Express |
| Bangalore | 2491 | 37.55 | 46.10* | Karnataka Express |
| Cochin | 2841 | 51.00 | 52.40* | Cochin J. J. Express |
| Mangalore | 3032 | 56.00 | 56.45* | M' iore J. J. Express |
| Trivandrum | 3054 | 46.30 | 57.15* | Kerala Express |

Notes : 1 * Superfast Express 2 = Second fastest Express J. J. Express = Jayanti Janata Express.

Source : Trains at a glance and Zonal Railway time-tables

of distance and time for travel to these places with those immediately preceding would prove the point. Ahmedabad (1097 km.) is reached in 13.45 hrs. when compared to Jabalpur (968 km., 17.45 hrs.). Bangalore lying at a distance farther than Puri is reached earlier. Rajdhani Express to Bombay its counterpart, Sarvodaya Express to Ahmedabad Rajdhani Express to Howrah, Tamilnadu Express and Kerala-Karnataka Expresses are the prestigious superfast trains.

Even if the timings for the second fastest trains are compared with those of the fastest, one may note that the superfast expresses have reduced the travelling time. It may, however, range from a mere 45 minutes (Mangalore) to 8 hours 45 minutes (Trivandrum).

To bring in the element of speed, the data of Table 1 is converted into time distance by following the method by King (Cole and King, 1968), and this data is tabulated in Table 2. It may be observed that

(1) Agra, Jabalpur, Bhagalpur, Muzaffarpur, Puri, Bangalore, Cochin, Mangalore and Trivandrum have come closer to New Delhi as their time distance by Superfast expresses is less than the geographical distance, thus proving the utility of Superfast Expresses.

(2) Travel between New Delhi and Agra, Jabalpur, Ahmedabad, Bhagalpur Muzaffarpur, Bombay, Puri, Bangalore and Mangalore, Cochin has been speeded up by the Superfast Expresses. Comparisons of time distance by the Second fastest train and by the Superfast Express to each of the places

Table II
Time distance analysis from New Delhi

| Place | Distance in km. | Time distance by | | | No. of trains | | | | | | |
|--------------|--------------------|------------------|---------|-------|---------------|---|---|---|---|----|----|
| | | second | fastest | train | A | B | C | D | E | F | G |
| Agra | 195 | 211 | 185 | 1 | - | - | 1 | - | 1 | 9@ | 12 |
| Jaipur | 308 | 238 | 330 | - | - | - | - | - | - | 4* | 4 |
| Lucknow | 507 | 492 | 570 | - | 1 | - | 1 | - | 1 | 1 | 4 |
| Jammu Tawi | 585 | 474 | 591 | - | - | 1 | - | - | - | 2 | 3 |
| Jabalpur | 968 | 866 | 789 | - | - | - | - | - | - | 1* | 1 |
| Ahmedabad | 1097 | 1412 | 1319 | 1 | - | - | - | - | - | - | 1 |
| Bhagalpur | 1199 | 1188 | 1133 | - | 1 | - | - | - | - | 2 | 3 |
| Muzaffarpur | 1224 | 1198 | 1071 | - | 1 | - | - | - | - | - | 1 |
| Bombay | 1384 | 1809 | 1637 | - | 2 | - | - | - | - | 4* | 6 |
| Howrah | 1445 | 1598 | 1897 | - | 1 | - | - | 1 | - | 5* | 7 |
| Secunderabad | 1679 | 1606 | 1840 | - | 1 | - | - | - | - | 1 | 2 |
| Puri | 2126 | 1806 | 1593 | - | - | - | 1 | - | - | - | 2 |
| Madras | 2188 | 2337 | 2354 | - | - | 1 | - | - | - | 3* | 4 |
| Bangalore | 2491 | 2444 | 2450 | - | 1 | - | - | - | - | - | 1 |
| Cochin | 2841 | 2835 | 2291 | - | - | - | - | - | 1 | - | 1 |
| Mangalore | 3032 | 2945 | 2456 | - | - | - | - | - | 1 | - | 1 |
| Trivandrum | 3054 | 2999 | 2963 | - | 1 | - | - | - | - | - | 1 |

Notes : @ Two of these trains are superfast.

* One of these trains is superfast.

All trains in categories A to F are superfast

A = Once a week

E = Five times a week

B = Twice a week

F = Six times a week

C = Thrice a week

G = Daily

D = Four times a week

T = Total number of trains

shows decrease in the values of the latter.

(3) As many as ten state capitals- Bombay Ahmedabad, Bangalore, Trivandrum, Madras, Secunderabad, Bhubaneswar, Calcutta, Patna and Bhopal are benefited by the Superfast Expresses from New Delhi. (Bhubaneswar, Patna and Bhopal lie on the routes of some of the Superfast Expresses). Jaipur lies on the margin of benefit by Superfast Expresses and would have derived the benefit had it not been located on the slower meter gauge.

Conclusion

The Superfast Expresses have proved useful in improving accessibility in terms of time distance from New Delhi. These trains carry generally second class accommodation

meaning thereby that travel from different parts of India to the national capital is faster and one which may be afforded by a well-to-do Indian. Their utility is particularly more where no direct link with the national capital exists or where only one or two direct trains from New Delhi serve the place. Increase in the frequency of some of these trains will enhance their utility. Introduction of new Superfast trains, like the Jhelum Express to Pune, will bring New Delhi closer to some more parts of the country, which is aptly described as a sub-continent. The tests for introducing locomotives and rolling stock that can stand still higher speed is thus a welcome step (Hamara Desh, 1979).

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