

Nature, Flow and Constraints of the Railway Commuters: An Analytical Study on Sealdah Section

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Abstract: Railways are the major transportation networks upon which the development of any country depends. It acts as veins through which movement of the commodities and flow of the passengers occurs. Sealdah station is one of the important node in terms of railways movement in West Bengal. This is an important part of the suburban railway system around Kolkata. Huge segment of commuters move through the railway lines surrounding Sealdah railway station. Maximum flow of the local trains is circulated within nearest peripheral parts of the city core areas. Thus, the area of influence is also confined within these peripheral areas. Degree of interaction with the city core areas and the surrounding outskirts mainly occur through passengers flow. The growth potential zones are also projected within these areas of maximum degree of interaction. The outer segments have relatively poorer passengers flow and resultant growth. In spite of the huge flow, lots of constraints are faced by the commuters related to the paucity and inadequacy of railway services. The services may be upgraded and maintained up to a better level through quite attention. These management related approaches must be focused to have better railway services within Kolkata suburban railway system surrounding Sealdah station.

Keywords: Commuters, passengers flow, area of influence, growth potential zones, Kolkata suburban railway system, constraints, degree of interaction.

1. Introduction: Commuters are meant to those people who move either daily or weekly from one region to another region and go back with no intention of staying near the work place. Railway commuters within Sealdah section move through different divisions of railway lines from different places. Commuters may opt, select, eliminate, adopt or may modify the facilities and difficulties of different modes of transport along with the networks. They are very much vulnerable to the conditions associated with movement through the transportation networks. They are the direct beneficiaries or sufferers of the transportation services. Sealdah railway section is one of the busiest section in terms of movement and flow of the railway passengers. Lots of people move daily with different purposes and different constraints at different distance. Hence, these huge numbers of commuters contribute a lot in the economic profit and monetary flow of the Indian Railways Authority. However, the services associated with railway linkages needs to be upgraded and developed too. The perception of the railway commuters related to these services is not up to the satisfaction level. The present study focusses

Fig. 2 Area under Study of the Railway Network around Sealdah Station

Source: Compiled from data provided by Railway Board, Govt. of India, 2017

5.A Brief Note on Sealdah Railway Section:Sealdah is one of the busiest rail station in India and it is famous for the suburban local train terminal (maplandia.com). Sealdah division was formed in 1952 after reorganization of the railways. It is predominantly a suburban division, which connects Kolkata with suburbs, surrounding metropolis and villages (Indian Railways Fan Club Association, 2017). Sealdah railway station has two major sections. Those are Sealdah main and Sealdah south sections. Sealdah main division operates train plying between Kolkata and Barrackpore, Naihati, Kalyani, Krishnanagar, Ranaghat and others. The Bongaon division functions trains for Birati, Madhyamgram, Hridaypur, Barasat, Duttapukur, Habra, Gobardanga, Bongaon and others. The main division also handles trains with the eastern India. Besides, Sealdah south section operates between Kolkata and Diamond Harbour, Budge budge and Lakshmikantapur.

6. Nature of the Railway Commuters:Railway commuters are mainly dependent on the railways movement for earning their livelihood because railways provide faster, cheaper and comfortable transportation at both short and long distance. The major economic flow is circulated through the railways. Most of the commuters are eager to have the ‘last mile connectivity’ that is rare in railway networks. The aspect of providing economic and convenient ‘last mile connectivity’ that is from the trip ends to the point of accessing a public transport system is an area of much neglect in Indian cities (Chidambaram, 2013).

6.1 Types of Railway Commuters:Railway commuters move on different purposes. Based on the purposes, they are classified into different types viz. domestic attendants, office passengers, unorganized sector workers, people moving for the medical checkups and treatment, students moving for the educational purposes etc. Besides, based on the frequency of commutation they are again classified into different categories

viz. daily, weekly, fortnightly, monthly commuters etc. Among all of them daily commuters are the most experienced about different facilities and adversities of railways movement.

6.2 Distance of Commutation:Commuters move at different distance with different purposes. Most of the passengers move within a distance below 50 kilometers (Fig. 3). Passengers moving at long distance are comparatively less in number. Commutation occurs mainly from suburban outskirts areas to the city core areas. Short distance commutation is comparatively higher than long distance commutation. The same fact is also reflected in the matter of number of intermediate stations. Most of the passengers move from one to ten intermediate distances apart (Fig. 3). Therefore, larger the number of daily commuters, shorter is the distance of commutation.

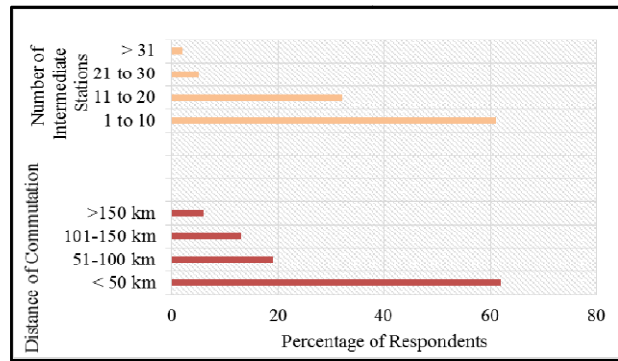
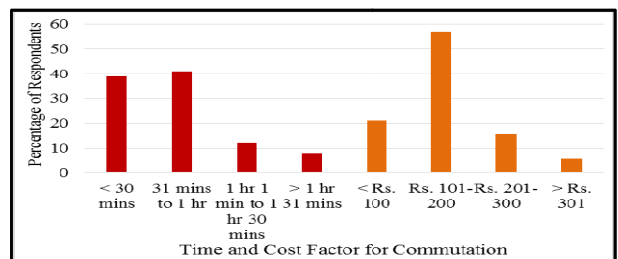


Fig. 3 Zones of Commutation at Sealdah Railway Station, 2017

Source: Primary Data, 2016

6.3 Time-Cost Factors of Commutation:Commuters at Sealdah railway station move within short and medium distance areas and hence they require shorter and medium time and cost for expense. Movement through railway transport becomes cheaper at long distance. Therefore, medium level of costing is very common for the commuters



(Fig. 4).

Fig. 4 Time-Cost Factors of Commutation at Sealdah Railway Station, 2017
Source: Primary Data, 2016

7. Flow of the Commuters through Different Divisions of Sealdah Railway Station: Before discussion on the flow of the commuters, flow and frequency of the local trains around Sealdah railway station must be considered. Sealdah is connected with about 27 terminal and 21 junction railway stations and that is a part of Kolkata suburban railway system. Maximum flow of the local trains is circulated within Sealdah to Krishnanagar, Sealdah to Budge budge and Sealdah to Barddhaman (Fig. 5).

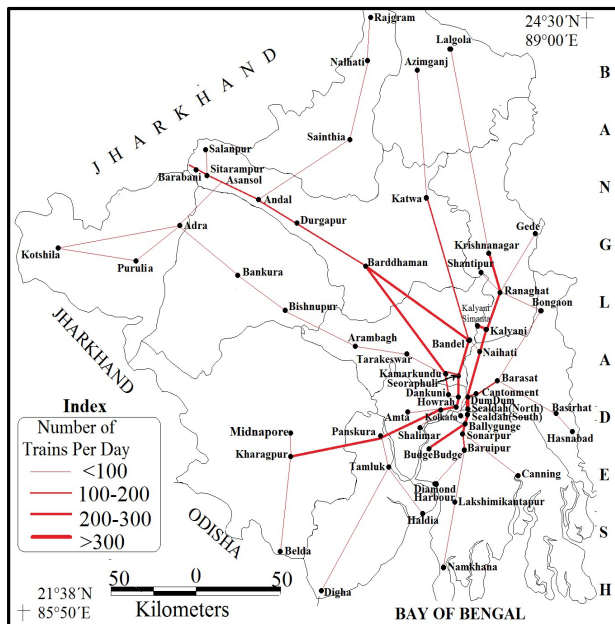


Fig. 5 Flow and Frequency of the Local Trains through Sealdah Railway Station in the Southern Parts of West Bengal, 2017

Source: Data Provided by the Indian Railways, Govt. of India, 2017

The area of influence of the local trains' flow is concentrated within these aforementioned stations. The centrally located nodes have better flow and frequency pattern than the outskirts (Fig. 6). Here lies the polarized pattern of local transport movement. The areas of influence are measured through the 'breaking point analyses' after Reilly. The purpose of Reilly's law of retail gravitation (1931) is to find

out a point of indifference between two locations, so that the trading area of each can be determined and this point is assumed to be a function of the distance between two locations pondered by their respective size (Rodrigue, 2013). The growth potential zones of the passengers flow at Sealdah railway station is mandatory to be measured and Gravity Potential Model after Stewart (1948) is applied in this context. The gravity model, one of the earliest models to be applied in the social sciences is a simple attempt to treat two basic factors affecting the volume of flow or interaction between any two points: population and distance (Taaffe et. al, 1996). The growth potential zones of the passengers flow around Sealdah railway station is projected at the eastern segment surrounding Barddhaman, Krishnanagar, Ranaghat, Naihati, Barasat, Dumdum, Budge budge, Canning etc. (Fig. 7). The most effective growth potential zone is concentrated within the Kolkata city core areas.

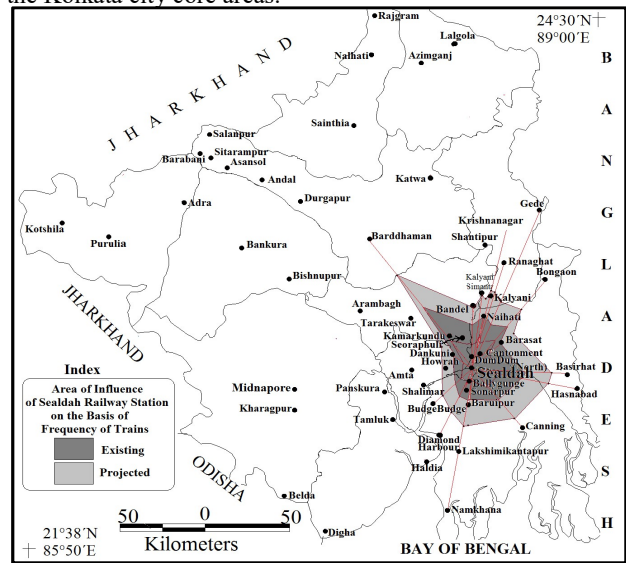


Fig. 6 Areas of Influence of the Local Trains' Flow to and from Sealdah Railway Station in West Bengal, 2017

Source: Computed from the Data of the Indian Railways, 2017

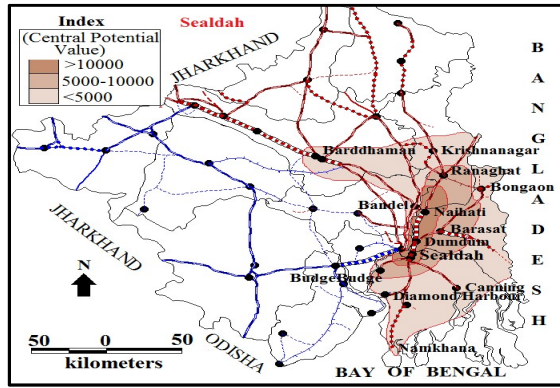


Fig. 7 Growth Potential Zones of the Passengers Flow at Sealdah Railway Station, 2017

Source: Computed from the Data of the Indian Railways, 2017

8. Constraints Faced by the Railway Commuters:

The railway commuters faced different types of constraints related to inadequate railway services within Sealdah railway suburban system. These are listed below:

- i. There are excessive hassle prone crowd at both the railway compartments and platforms especially during the busy hours.
- ii. Absence of proper crowd control management system creates major problem.
- iii. Irregularity in the announcement of trains before arrival at different stations creates obstacles.
- iv. Congestion of the trains on the single line and inefficiency of the signaling system result in delay and loss of time.
- v. Disturbances like damage of overhead extension electric wires due to inclement weather culminates into cancellation and delay in railway movement.
- vi. Waterlogged condition at the railway lines during rainy season causes hindrance to the railway services.
- vii. Delay due to foggy weather conditions especially during the winter months causes hindrance in services.
- viii. Cancellation of the scheduled trains due to unknown factors with no alternate arrangement gives trouble to the passengers.

ix. Degradation of the utility of different railway properties viz. Railway Over Bridges (ROB), Electronic Ticket Vending Machines (ETVM), Escalators, Underpasses, Platform Seats and Sheds at different railway stations create obstacles.

Higher frequency of anti-social activities at the Railway Over Bridges, Underpasses degrade the function ability of those facilities.

x. Interruption in railway movement due to the railway strikes and blockages at different events and claims even on the working days has become very frequent in nature. This is the example of unawareness of common people.

xi. Accidental delay of the trains creates trouble sometimes.

xii. Some stretches of the railway lines had been diminished due to decaying of the railway connectivity. Besides, at some stretches there is absence of railway connectivity.

9. Major Observations: The overall study comes to some major observations that are highlighted underneath:

- i. A large share of people commutes daily through the railway network in the Sealdah railway section and its adjacent suburban areas for different purposes. They opt for railway movement due to its cheaper, faster, safer and more comfortable movement. Thus a huge segment of people depend on this mode of transport for their economic activities and others purposes.
- ii. Most of the commuters move from the surrounding suburban areas to the city core sections. The nature of movement is centripetal. Short distance movement predominates over long distance movement due to having maximum population towards city core areas.
- iii. Another observable fact is that although the flow of the local trains is extended up to Lalgola, Rajgram, Barabani, Namkhana, Gede and Hasnabad from Sealdah rail station. Maximum flow is seen within Bardhaman, Krishnanagar, Budge budge areas. Hence, the area of influence of the local trains is also concentrated within these regions. The potential growth of the passengers gradually decreases outward away from Sealdah station.

iv. There are lots of constraints related to the railway services often faced by the railway commuters.

10. Suggestions:The suggestions drawn regarding betterment of railway services have been put forward here:

i. Engagement of crowd control management system and crowd management personnel both within the trains and at railway platforms may be approached.

ii. Frequency of cancellation of scheduled trains must be checked and in that case alternate arrangement must be taken.

iii. Regularity and punctuality in the announcement of trains before arrival must be handled carefully.

iv. The utility of different railway properties like ROBs, ETVMs, Underpasses etc. should be maintained and monitored regularly in order to have their services.

v. Immediate actions and management with high-tech monitoring must be incorporated to handle the situations like damage of overhead extension wires, waterlogging at railway lines, accidental disturbances etc.

vi. Habits of unnecessary blockade and strikes as means of protesting against different issues by the common people must be restricted.

vii. Regular and effective monitoring against ticketless travelling should be practiced.

11. Conclusion:Commuters are said to be one of the major important factor of economic activity in any region. Therefore, the safety, comfort and cost of movement are important to be considered. The nature of commutation through the railways network around Sealdah station is concentrated within short distance areas. The flow of the trains if enhanced up to far areas, the commuters flow also will be extended. Hence, an approach towards extension and enhancement of the areas of influence under railway movement must be focused. Besides, the growth potential zones under passengers flow also must be extended. In some cases, commuters are eager to bear extra cost for their safer, comfortable and punctual movement. But, the railways authority has not performed well regarding better services related to railways movement. The constraints related to

commuters movement should be considered for betterment of the services. In most of the cases, the constraints are related to mismanagement of the railway services. If quite attention is given to the problems, it would be very much beneficial for the commuters. Besides, another concern should be given towards betterment of services related to the para transit modes at and around different railway stations. This would be helpful for the passengers to get 'last mile connectivity' of many places. It is expected, that the constraints of the railway commuters will be reduced in near future and it will lead towards a path of development.

References:

Printed References:

- [1] Chidambaram. (2013), *Last Mile Connectivity (LMC) for Enhancing Accessibility of Rapid Transit System*, Department of Urban Planning, School of Planning and Architecture, New Delhi.
- [2] Government of India. (2016), *Annual Report*, Railways Board, Ministry of Railways.
- [3] Rodrigue, J. P. (2013), *The Geography of Transport System*, Routledge, New York.
- [4] Taaffe, E. J., Gauthier, H. L., and O'Kelly, M. E. (1996), *Geography of Transportation*, Englewood Cliffs: Prentice-Hall, New Jersey.

Electronic References:

- [1] www.irfca.org.
- [2] www.maplandia.com.