



## AN APPRAISAL OF PERFORMANCE OF KOLKATA METRO RAILWAY

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### Abstract

Rapid population growth fuelled by in-migration has been the hallmark of the leading mega cities of India, creating a “top-heavy” structure of India’s urbanization resulting in urban sprawl. Like other metropolitan cities in India, Kolkata continues to struggle with the problems of urbanization: p especially traffic congestion. The burgeoning transport problem of Kolkata drew the attention of the city planners, the State government leading to the development of a Mass rapid transit system. The aim of the work is also to analyse the impact and assessing degree of satisfaction of present day access of the people of Kolkata (under current operational stretch) to one of the sought after modes of transport and also to chalk out feasible remedial measures, which will be helpful for planners and policy makers to improve the system.

**Keywords-** traffic congestion, mass rapid transit, satisfaction, lacuna

**BACKDROP OF STUDY-** Rapid population growth fuelled by in-migration has been the hallmark of the leading mega cities of India, creating a “top-heavy” structure of India’s urbanization resulting in a continuous urban sprawl and deterioration of the social, physical and economic infrastructure in most of these cities. Like other metropolitan cities in India, Kolkata continues to struggle with the problems of urbanization: poverty, pollution and **especially traffic congestion**.

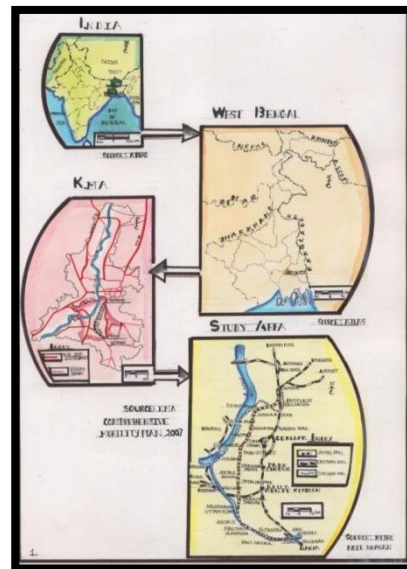
- Like any other growing city and the nerve centre of Eastern and Northeastern India, Kolkata has also come of age in its traffic demand .
- The burgeoning transport problem of Kolkata drew the attention of the city planners, the State Government and also the Government of India . Hence a transport system that did not add to the existing traffic problems of the city has to be developed ,Studies concluded that a Mass Rapid Transit System alone was the solution to the ever-increasing traffic problem.



LOCATION MAP

**SELECTION AND OBJECTIVES OF THE STUDY** - The present work is an attempt to decipher the impact of Mass Rapid Transit System on the burgeoning traffic problem of Kolkata and also to analyse the degree of satisfaction of present day access of the people of Kolkata to one of the most preferred and sought after modes of transport and also to chalk out feasible remedial measures.

- Metro railway in Kolkata, the first modern mass rapid transit in India and fifth in Asia is presently running commercial services from Dum Dum in the north to Kavi Subhash (New Garia. in the south ):25.135 Kms with 23 stations and has brought North and South 24 Parganas districts closer to Kolkata's CBD area but has a myriad of technological, social, economic and environmental problems.
- The mishmash of these two sides of the coin-the most sought after mode of MRT has enthralled my entity as a geographer, which leads to select the operational stretch of 25.107 km of Kolkata Metro from DumDum to Kavi Subhas.



### ***DATABASE AND METHODS***

Data has been drawn from a wide variety of sources including primary and secondary sources.

- A detailed data base has been obtained comprising of both secondary ( Metro Rail Bhavan ,KMA and New Secretariat library) in accordance with direct interaction of the metro railway passengers of certain stations along the operational stretch.
- **In order to pursue the study**, a four phase approach has been used : which involves a initial physical perception of the area ,data collection, analysis, documentation, cartographic representation ,ultimate evaluation for giving a final shape to the content. All the collected data were analyzed (both spatially and temporally) by statistical and cartographic analysis using MS Word, MS Excel, Adode Photoshop 7 and manual portrayal.

### **METRO BHAVAN**



**NEW PHASE STATION**



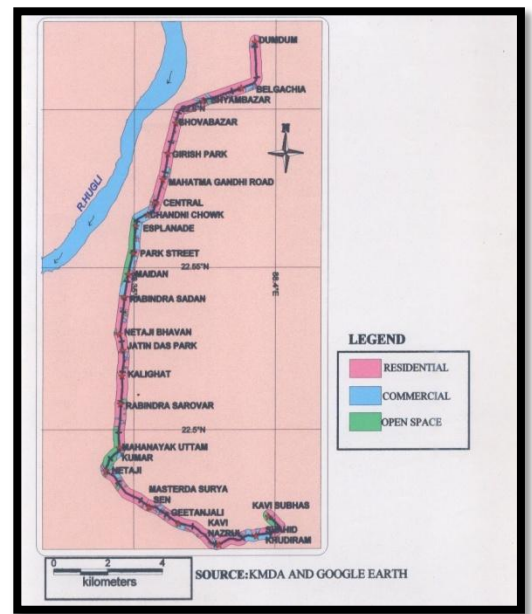
## A MOMENTOUS JOURNEY OF KOLKATA METRO RAILWAYS

- The history of Kolkata's Metro rail goes as far back as 1949, when the idea of setting up an underground railway system to solve the burgeoning traffic problem in the city was conceived by the then Chief Minister of West Bengal Dr. B.C. Roy, a great visionary. After detailed studies, the MTP (RIys) came to the conclusion that there was no other alternative but to construct a Mass Rapid Transit System .
- Thereafter, overcoming innumerable hurdles and crossing all barriers of disbelief, Calcutta Metro, India's first and Asia's fifth, became a reality on October 24, 1984.
- The foundation stone of the project was laid by Smt. Indira Gandhi, the then Prime Minister of India, on December 29, 1972 and the construction work started in 1973-74. And of late Kolkata Metro, is designated as 17th zone of Indian Railways is extending its wings both in the north and south of the city .

### ATTRIBUTES OF THE STUDY

- Metro being the lifeline of kolkata runs through the heart of the city touching few important landmarks along its route. METRO indefinitely bears some impact on the surrounding landuse of the area, mostly residential with distant commercial centres.
- Perhaps the most regular time schedule is run by metro railways with a relatively nominal fare structure. Although in terms of amenities ,a lopsided pattern may be witnessed with Dumdum being the most important station followed by Esplanade and Mahanayak Uttam Kumar.

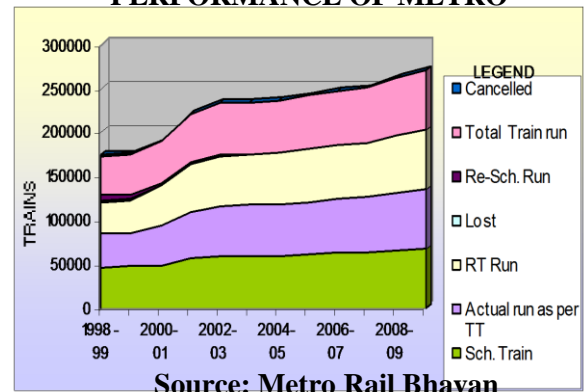
**LANDUSE ALONG METRO**



### METRO ECONOMICS

- The year wise rising growth of **passengers and earnings** (2002-2003 to 2010-2011) evidence that Dumdum, Tollygunge, Esplanade, Kalighat serve the highest in terms of both.

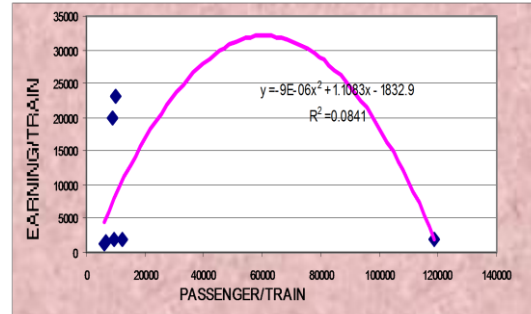
**PERFORMANCE OF METRO**



Source: Metro Rail Bhavan

- Although the puja days contribute to a sudden hike in earnings, the strikes and bandhs accounts for the immense loss in earnings causing distress to the passengers. Though passenger and earning profile of metro railway records a spectacular progressive trend within the last decade of the present century, balance sheet of metro railways shows continuous losses. This is due to the fact that gross working expenses exceed earnings.
- An overall picture shows a close positive relationship between passenger and earnings, both portray a hike over the years with a pronounced disparity in terms of special circumstances.
- At the outset, it may be inferred that well correlated components of passenger, earnings and trains collectively contribute to the balance sheet of metro rail.

**CORRELATION BETWEEN TRAIN, PASSENGERS AND EARNING**

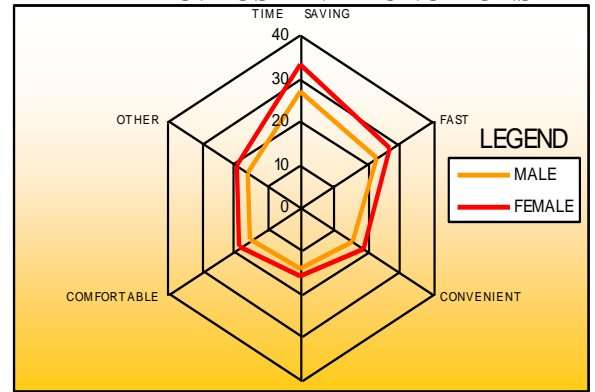


**PASSENGER’S REVIEW: GENERAL PERCEPTION**

**Source: Metro Rail Bhavan**

- The feedback accumulated against specific queries to the surveyor is as per the perceptions and senses of the target group of 100 passengers.
- The satisfaction level on metro service bags mostly a mixed reaction .
- The general trend in view is that ,working age group mostly avails metro during the immediate office hours for convenience ,linkage and time savings ,additional com forts etc.
- The amenities like provision for separate women special trains and more seating arrangements in regular trains , more air-conditioned rakes and separate terminals,elevators,escalators,upgraded punching systems,need for feeder transport are demanded by majority of the passengers .

**METRO: POSITIVE FUNCTIONS**



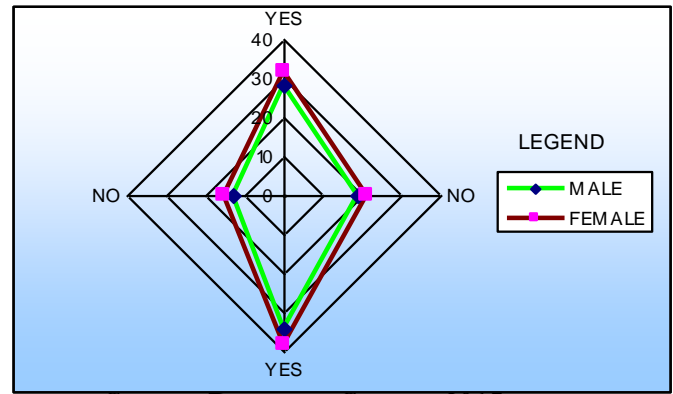
**Source: Passenger Survey, 2015**

**STRIKING PROBLEMS**

- Striking problems :inefficient network connections and ineffective doors ,absence of emergency exits, improper disaster management system, improper announcements, distant loctaion of stataions, recent naming systems,suicides .

**SNAGS IN METRO**

- Among few basic utilities , toilet facilities, emergency medical aids, and stationery shops , should be provided with immediate effect.
- The unbearable heating of metro floor along with the ticket system are the perceived health as well as environmental hazards. The travel - time comparison shows that time taken for travel during construction phase was much higher with its associated problems.



Source: Passenger Survey, 2015

**MAJOR FINDINGS**

- Thus planning for metro should be comprehensive so that other MRTs could serve as interchanging mode of transport with metro.
- . An Integrated Public Transport Master Plan for Kolkata urban area is recommended with a multi-modal public transport system.
- Amenities like AC platforms, overhead luggage space, more seating facility within the stations, better positioning of escalators, lifts, medical aids with better timings, frequency, maintenance are the

**GAPS WIDENING**



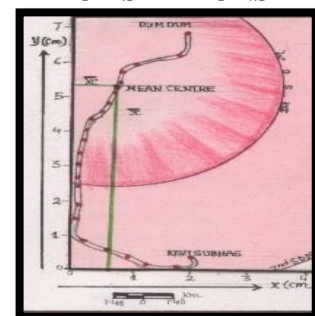
**LIFTS NEEDED FOR TIRED LEGS**



needs of the hour.

- Late night metro facility at few specific nodes ( IT hub Saltlake , Rajarhat) for avoidance of social hazards in lonely areas with provisions of fare hike to minimize financial loss.
- Moreover passengers’ feedback identify some major problems like lack of feeder transport facilities, absence of major parking lot, deficiency in major infrastructural facilities which is the guiding factor behind the discrepancy in stations availed and the destination places of the commuters.

**ZONE OF INFLUENCE OF STATIONS**



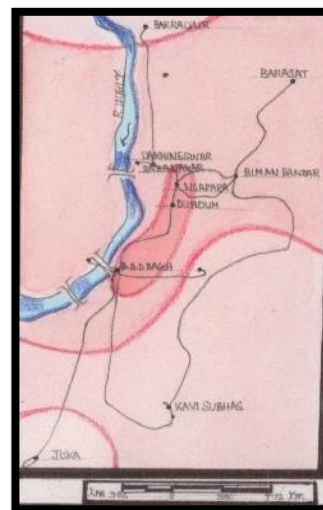
Source: Passenger Survey, 2015

**A WAY TO UPGRADATION**

- In a nutshell planning techniques also brings to light the unevenness in metro facilities of the stations: Tollygunge, Dumdum(diversified land use), Park Street and Maidan (major commercial areas) BEING THE MOST PREFERRED STATIONS. A time – cost and travel-time

comparison shows that time taken by other vehicles is much higher than metro (a variation of 10 minutes of time on an average) and fare is also higher for other modes compared to metro (Rs. 8 on average).

## METRO ACCESSIBILITY



- This comparison undoubtedly signifies that this heavy mass rapid transit system of Kolkata is now the most desired one and both the routes (previous and extended) face the identical basic problems. **The passenger carried by various transport modes of transit, para transit, railways has been compared** and the expected is unveiled till year 2025 which shows that private bus holds the highest capacity (surface) . Thus the overall picture depicts that in a city like Kolkata the only mass rapid transit system is yet to cater the service of passengers in terms of preference.

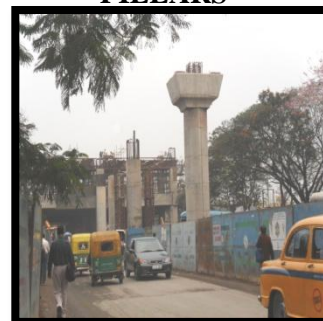
## AN OVERVIEW FOR FUTURE

Source: Passenger Survey, 2015

- Considering the soil structure of Kolkata (riverine alluvium) planning of subsidence proof multi-tier systems (Japan's model) should be executed with special considerations of Delhi Metro.
- Being a high density mass rapid transit system Metro Railway in Kolkata should pay highest priority to safety , security of passengers along with punctuality .
- The projected benefits for the next 30 years of the Metro rail system signifies avoidance of new buses and other vehicles on the road (savings of Rs.8179 crore) as well as minimizing traffic congestion .
- Metro likely to achieve: PASSENGER(2024-25)-2931.80 LAKHS  
NO. OF TRAINS (2024-25)-92858

**This mode of MRT will be the most preferred and sought after mode of transport for the Generation Next people and rise in metro craze will outstrip all other modes of conveyance, may be, for many years to come..**

## METRO FUTURE ON PILLARS



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