FLAME UNIVERSITY

DISCOVER INDIA


# Back on Track

## The Tramways of Kolkata

# Back on Track: The Tramways of Kolkata

## DISCOVER INDIA PROGRAM

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**CERTIFICATE**

This is to certify that the work incorporated in this report entitled ***"Back on Track: The Tramways of Kolkata"*** submitted by the undersigned Research Team was carried out under my mentorship. Such material as has been obtained from other sources has been duly acknowledged.

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**ABSTRACT**

This research is an exploratory study into the future of trams survivals and the consequential effects it can have on its various stakeholders. Our research will be three fold- from the perspectives of the public, CTC & employees and workers. The analysis for the public is based on questionnaires and is purely quantitative while the other two are qualitative. The analysis for CTC & employees is based on questionnaires and interviews with officials. The analysis for the workers is based on questionnaires, interviews and focus group discussions. This paper will explore in detail the policies which the CTC establishes and how it affects the tramways and their future as well as implications for an assumed eventual demise. We will also explore the historical influence of labor unions and the reduction of power in recent times. We have also studied how the tram workshops work and their influence.

*Keywords* : exploratory study, public, CTC, workers, policies, assumed demise, labor unions, tram workshops.

## LIST OF IMAGES, FIGURES AND MAPS

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# CHAPTER 1

*"Her name's Kamala:*

*I've seen it written on her file.*

*She was on the tram-car, with her brother, on her way to college…"*

*"…One day the car was packed with jostling crowds.*

*A Eurasian sitting next to Kamala…"*

(Tagore, 2012)

## 1.1 Introduction: A City's Lost Heritage

India's transport sector currently caters to the needs of 1.1 billion people across the country ("India Transport Sector"). The oldest running public transport system, which began in Kolkata in 1902 was the tramway system, which is still active to this day, transporting approximately 0.16 million passengers a day (Ahmen and Khatun, 2016; Srinivasan, 2011).

In a fast changing world, one would expect the new to easily push out the old and take its place. But the tramways system of Kolkata has survived for over a 100 years, and is now considered an integral part of the city. It is interesting to see the changes in power, and the rebuilding and maintenance efforts put in place by every changing hand.

## 1.2 Geographical Overview

Kolkata is one of India's largest cities, and lies on the banks of the Hooghly River. The area surrounding the river and the city is a flat, swampy region. Due to this, the city of Kolkata is restricted only to the area directly surrounding the river (PIA01844).

The limitations of the area means that the city of Kolkata is restricted geographically and that large geographical expansion over the years is not a possibility here. Attached below are two satellite images of the city - one taken in 2001, the other in 2011. It is quite clear that while there have been hints of expansion, the shape and, more importantly, the size of the city have not changed.

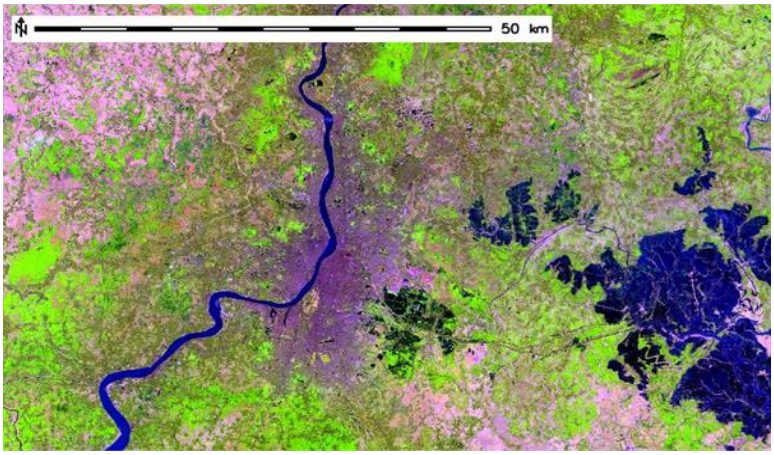


*Image 1: Satellite image of the city of Kolkata as seen in 2001*

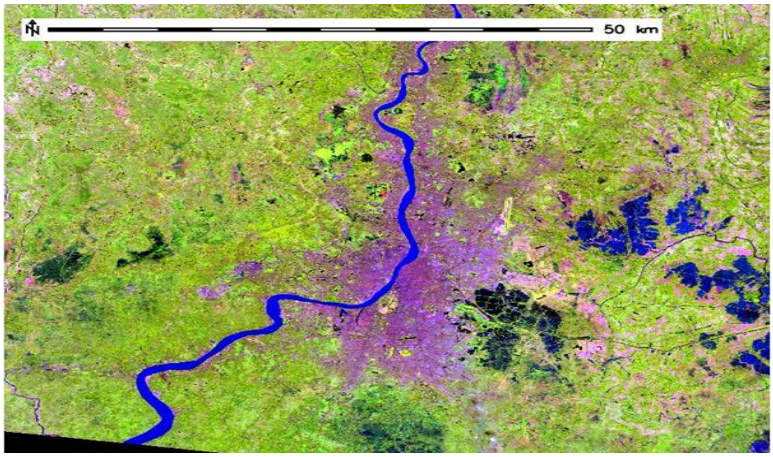


*Image 2: Satellite image of the city of Kolkata as seen in 2011*

### 1.3 Historical Overview

The city of Kolkata was put together in 1639 by Job Charnock, a member of the East India Company, who created the city by buying three different villages and putting them together to form one huge city called Calcutta. Job Charnock went on to become the governor of Bengal, and Calcutta went on to become the centre of British Power in India (Calcutta, 2014).

This position as the centre of British power is reflected in their architecture, with old buildings designed in British as well as French styles. The French architecture did not come from any French occupation of Kolkata, but from the beginning of globalisation - French architecture was spreading through Britain, and through Britain to the British people living in India at the time. This architecture spread largely through their centres of power - the most notable one of the time being Kolkata (Ray, 2017).

### 1.4 Research Statement

Our research statement is to explore the future of trams and tram systems survival and the consequential effects it can have on its various stakeholders - public, CTC & employees and workers.

### 1.5 Aims and Objectives

We have three main aims that we hope to accomplish through this project:

**First**, we have observed the presence and demise of tram systems in different parts of India, including cities like Delhi, Mumbai, Cochin, and Chennai. These tram systems were introduced shortly after the tram system in Kolkata, but they were all phased out while the trams in Kolkata survived. We want to try and understand the reason behind the survival of the trams in Kolkata, when they couldn't survive anywhere else.

**Second**, all the data we have found so far has been quantitative data; there are no qualitative records that we have been able to find just yet. Our aim is to gain a better understanding of the tram system in the eyes of the people of Kolkata, including both the people who travel by trams, and also those who don't. We will also look at the employees who work for the Calcutta Tramways Corporation, and the workers directly in charge of the running of the trams through the city.

**Three**, there may be a possible future in which the tram system may have to come to an end. We want to understand what the implications of this end may be, i.e. how the city and its people may be affected by this change.

## 1.6 Pre-Field Hypothesis

We are going on field with certain ideas that we have, based on the research we have been able to do so far, through papers, newspaper articles, journals etc. It is quite possible that a lot of our assumptions will be proven false.

A lot of our aims are based on the information that we have been able to collect through the sources we have been able to gain access to. Our hope is that our on-field evaluation will help us fill the gaps in our knowledge, and answer the aims of our research a lot better than we are able to do up to this point.

However, given that we do not know as yet what we will be able to uncover, and given that it is hard to what is missing from one's knowledge until one comes face to face with the missing pieces that put everything into a new perspective, we cannot comment just yet on a lot of the aspects of our research, or things that may be missing until now.

We entered the field with the assumption that trams are in the process of being phased out based on an interview from an official from the West Bengal Transport Sector that the trams are being systematically phased out. Our research, as mentioned in detail in research methodology, is three-fold i.e. from the perspectives of the public, the workers and the employees. Hence our hypotheses will follow the same structure.

### 1.6.1 Public

- We hypothesized that individuals belonging to the older age groups would be using trams more than those belonging to other age groups.
- Another hypothesis was that people wouldn't want to use trams because they are slow and cause traffic congestion due to the tram tracks being opened for other vehicles to use.

### 1.6.2 Employees

- We hypothesized that even though the CTC states that it is attempting to promote trams and tramways systems, their policies go against this objective, leading to the assumed eventual demise of the tramways systems

- A second hypothesis is that the CTC is using most of its funds for public transport other than trams, specifically, bus systems.

### 1.6.3 Workers

- We hypothesized that the workers would be unhappy with the working conditions that they are under, and would want the government to provide more funding to revitalize the tram system.

## 1.7 Research Methodology

Our aim is to perform an exploratory study, i.e. looking for information that has not been researched on before. Our main aim is to focus on the people related to the tramway systems, as there is not a lot written about all those associated with the tram system. These people will become the stakeholders for the tramways.

An exploratory research basically aims to examine the research questions and differs from conclusive research as it does not aim to offer a final solution to the problems being examined (Dudovskiy, n.d.). Our focus would fall on the people related to the tramway systems, as there is not a lot written about such people. They are the stakeholders in this system and gaining an understanding of these people becomes an important part of our research.

Our research would be held as a non-participatory study, since our personal biases would be likely to alter the results of a participatory study.

The primary stakeholders in our study would be:

**1.7.1 Public:** We will be looking both at those who use the tram systems, and those who don't. Our aim here is to gain an understanding of what aspects of the tram system are appealing to the public, and what is not.

**1.7.2 Employees:** The Calcutta Tramways Corporation and those in charge of the continuation of the tram system are clearly major stakeholders in this system. From them, we hope to understand the strengths of the operation, the importance of the tram system, the reason for the lack of any advertising presence, and also to hopefully gain access to their financial records, which are not available online.

**1.7.3 Workers:** At the base of the operation of the tram systems are those in charge of the maintenance and survival of the tram system - the conductors, ticket collectors, tram drivers, cleaners, repairmen etc. We hope to understand why they choose to work for the tram system, the benefits of working for the CTC, advantages of working for CTC over any other company and so forth.

## 1.8 Limitations

Our goals include hosting a focus group discussion with some of the tramway workers, in hopes of coming to understand the tramways and their working a little better through what we witness in this conversation amongst those directly involved in the system. However, we don't know how feasible such a plan it.

We have also filed an RTI request for the financial records of the company, which were not available to us in any degree. Of course, it is very difficult to predict what the result of an RTI request would be, and even if it comes through, when that would be. We are currently keeping the RTI as a hopeful future resource, but we are also keeping in mind that we may not get access to this report.

Also, the biggest cause for concern for us is that this is a largely government-run organisation; the trams are a very cheap mode of transport because they run on government subsidy. A large part of our research will be based on the cooperation of government related offices, which we are not certain about. That may become a very big limitation in our research.

## 1.9 Rationale

As a group, we are all fascinated by the resilience of this transport system. Realistically, it should have been pushed out of use by the presence of newer, faster modes of transport years ago (as we will cover in more detail in the next chapter), yet it continues to stick around through

the years. We would like to understand what it is about this city that the tram system could survive despite all logical reasoning saying that it shouldn’t.

# CHAPTER 2

## Literature Review

### 2.1. History and Culture

The banks of river Hoogly have been inhabited for over two millennia. The 2200-year-old artefacts and potsherds discovered on the outskirts of the city prove that urban settlements existed in Kolkata long before the arrival of the British and the setting up of the colonial town (Das, 2003). But the recorded history of Kolkata only begins with the arrival of the English East India Company in 1690. By the end of the 18th century, the East India Company had taken complete control over the city of Kolkata and its surrounding provinces, using the city to serve as the main port for the company and developing it accordingly. This planning was carried out under the guise of 'improvement' and entailed heavy intervention by the colonial government. Despite resistance and scepticism, and some reversals, the task of imposing a rational urban order on the city continued (Dutta, 2003). This involvement was largely justified as 'improvement' and that it was an important function of the colonial government. The colonial urban policy and its impact have shaped and continued to shape the very structure of modern day Kolkata (Datta, 2012). It was the capital of the British Indian empire until 1911 when the capital was relocated to Delhi. Kolkata flourished in the 19th century to become the second most important city of the British Empire. This resulted in Kolkata's very own renaissance with the development of an unique cultural identity that fused European philosophies with Indian tradition (Dutta, 2003).

Even though Kolkata was the epicentre of the British Empire, it was also a forerunner in the freedom movement. The emulsification of colonial and anti-colonial ideologies resulted in the birth of a very unique city that is constantly battling with itself while simultaneously showcasing a synthesis of both colonial and independent India. The two main identities that develop out of this battle are: firstly the image of Kolkata as a city lost in time and the worst representation of a Third World city; the second identity encompasses the evolution of the city and its people into the sprawling multi-cultural metropolitan of the 21st century (Chattopadhyay, 2005).

A sprawling city like Kolkata, with its huge population, has its own traffic and commuter culture. The transport system of the city comprises of many different parts - the local and suburban rails and buses, taxis and Auto-rickshaws, as well as the newly built underground

Kolkata Metro. Another important part of this culture is the trams of Kolkata. Since their introduction, trams have become an integral part of Kolkata's identity (Hemalata, 2013).

The trams in Kolkata are the oldest operating electric tram in Asia, running since 1873. Much like the rest of the urban development in the city, tram services were first initiated by the East India Company and the then-Viceroy of India, Lord Curzon. It was aimed at improving public transport for citizens and served as a passage for goods from dockyards and ports to their respective destinations. Horse-drawn trams were first introduced in 1873. Electric trams were introduced in 1902 (Srinivasan, 2011).

After the end of the British rule, Calcutta Tramways Company was founded to take over the running of the trams. CTC works under the purview of the Transport Ministry of the West Bengal Government. In the past few decades, they have initiated a mass transit system which aims at an effective transport system. This system consists of increased bus services, introduction of the metro and slow phasing out of trams. Trams just do not seem to have a place in the quickly modernizing world where speed and efficiency are given the most importance (Pucher, 2004). CTC has also been criticized for terrible working conditions and unfair wages. The history of CTC is riddled with numerous strikes and unionizations of these workers (Ray, 2007).

### 2.2. Corporation

Established in 1873, the Kolkata tram system is the oldest running organization of its kind in Asia. In 1880, the Calcutta Tramways Company (CTC) was officially registered to oversee the operation. The company initially owned 166 horse-drawn trams running on a 19-mile route before trams were electrified. Today, the CTC runs 275 trams with a capacity of 200 passengers. The city is home to seven tram depots (Basu, 2014).

However, with tram usage steeply declining over the years and costs of operations increasing, the CTC is facing a crisis, being forced to discontinue over half its tram routes in the last decade alone. There are several other causes for the CTC's deteriorating state; they cannot defer the payment of energy and transformer oil bills, the daily earnings from running trams is barely enough to cover the wages of fewer than a thousand employees, and the positioning of trams in the middle of congested roads makes it difficult for potential passengers to access them.

To make matters worse, the CTC augmented its financial woes when it sunk money to fund infrastructural improvements to the trams, such as fitting them with air conditioning, which

were leased to the tourism department to be used in a “Heritage Tour” of the city, priced at 260 per ticket, in a bid to boost popularity. However, the move was unsuccessful, the Heritage Tour campaign fared poorly, and tram use continued to decline (Bandyopadhyay, 2013).

Many financial analysts believe trams to be obsolete an unprofitable, and an article from The Economist states that trams will be unable to compete with contemporary modes of transport, both economically, and in terms of convenience. However, developers maintain that trams are necessary for job generation and increasing employment rates, although there does not seem to be any empirical evidence backing their claims; for instance, a 2010 survey conducted by the Federal Transit Administration found no indication of tram systems causing any significant stimulation in employment or the economy. In addition, there is a large cost incurred in the setting up of tracks and manufacturing of trolleys (Why trams are a waste of money, 2014).

Nonetheless, trams have managed to endure in Kolkata, while every other major Indian city has all but phased them out completely. The reason behind this is how cheap the fare is. "When our fare was one anna, the magazine Desh used to cost one-and-a-half anna. Now Desh costs Rs 2.50 and we're only up to 35p.", said A.K. Dutta, head of the CTC.

The CTC itself has undergone substantive changes since its inception. Taken over in July 1967, by the West Bengal Government under its transport department, it was formally nationalized in 1976, but reverted to nearly its original status when a government owned company was formed on February 1, 1983. It now functions like a public-sector corporation and has the powers to raise a market loan.

The CTC plays a huge role in the survival of trams today. The managers argue that trams, far from being obsolete, may be the real answer to India's decaying urban transport systems. Their argument is supplemented by the National Transport Policy Committee chaired by B.D. Pande which, in 1980, declared that all efforts should be made to extend the existing tram service in Calcutta; furthermore, it recommended the introduction of tramways in the metros of Hyderabad, Bangalore, Ahmedabad, Kanpur and Pune.

Another major factor for the survival of the tram system in the city wracked by a perpetual power crisis, is that trams depend on an exclusive supply of about 17 MW a day, which is never curtailed. Occasionally there may be a brief cut of a few seconds, never more. Ten substations of the Calcutta Electric Supply Corporation provide the power to operate the system

and treat it as a priority area. Hence, commuters are rarely stranded by electrical shutdowns (Singh, 1984).

### 2.3. Environment

Trams are known for being eco-friendly. From horse drawn trams to electric trams, the tramways have become synonymous with Kolkata's identity. Electrically run, the tramways do not cause pollution which in turn makes them environment friendly. The tramways are a disciplined mode of transport, following a specific track with minimal route changes (Boral 2012). The environment-friendly aspects of trams are numerous; for one thing, the quantity of harmful emissions released by trams is much lower compared to other modes of transport. In addition, trams have a great advantage with regards to their "energy recovery system", which allows the engine to act as a generator while the tram is in the process of deceleration, resulting in energy being fed back into the system, reducing the need to create and supply additional power to the tram, thereby decreasing the emissions (Carrese et al 2014). Compared to buses, the service lives of trams are far superior, with trams having a service life around sixty to seventy years, while buses average only five to seven years (Bera n.d). Trams also economize in terms of space, with a carrying capacity of 150 passengers, and the equivalent to 40 cars, they reduce both congestion and pollution. (Carrese et al 2014). Some argue that the advent of energy-efficient car engines render the low emission-levels of trams obsolete, but the fact is that the positive effect of more energy-efficient car engines is cancelled by the exponential increase of the number of cars being used on a daily basis in the city; the number of registered vehicles in Kolkata increased from "50,000 in 1951 to 500,000 in 1991" as the population expanded. To add to this, the amount of road space relative to population density in Kolkata is only 6%. For cities like Mumbai and Delhi, those figures stand at 17% and 23% respectively (Gurjar et al 2010).

Trams are also known for their slow speeds and safety, which, though considered a disadvantage by some, also results in them being favoured by the elderly and young children as a reliable mode of transport. Trams have an almost accident free report with no casualties being reported in many years (Boral 2012). Apart from this the subsidized tickets make it easier for the lower sections of society to travel by them.

But, this is not to say that trams are infallible; there are, in fact a great number of disadvantages associated with their usage. A major complaint against the running of trams,

especially older models, is the resulting noise pollution and vibration, although this is not such a major issue for newer trams, leading the Chief Justice to announce that it was the Government's responsibility to curb or reduce the noise pollution. A possible solution offered to control the vibrations was placing rubber belts on the wheels (Legal reporter 2016). Another damaging aspect of trams is the source of the electricity used to power them. This energy is obtained by the burning of fossil fuels in coal plants, although the actual operation of trams in the city may outweigh this problem, as they do not release pollutants into the city the way other modes of transport do. (Venkatraman 2016).

And in a city as congested as Kolkata, the trams are more of a hindrance than being helpful. The reason why the tramways are successful all around the world and not in Kolkata is because the citizens actively moved from private transport to public transport. This change didn't take place in Kolkata which is why the city faces all these issues. While the lack of funds is a major issue for the CTC, they haven't done anything to promote the fact that trams are eco-friendly. Another major reason given for phasing trams out was the lack of road space, since, although trams can take the place of several cars, they are restricted by tram lines and have no flexibility to change their direction in order to accommodate traffic. Trams can only be efficient in terms of space if their routes are properly designed to be integrated within the city, which has been successful in European countries, but disastrous in Calcutta, which has seen exponential and unmitigated growth without adequate planning (Ghosh 2016).

Although there are some legitimate reasons for calling into question the viability of trams, many would argue that it's eco-friendly nature is reason enough to make the effort of instituting them on a large scale. Some speculate that the reason of trams being phased out can be attributed to the greed of the State Government to sell land owned by the CTC to raise money to cover the huge losses (Ghosh 2016).

## 2.4. Comparison

Our research has shown that cities in India which have had trams, with the exception of Kolkata have all discontinued tramway systems and services due to reasons pertaining to congestion and traffic, the advent of more efficient modes of transport, and financial crises among others.

### 2.4.1. Delhi

Trams began operating in Delhi in March, 1908 and by 1921 there were 24 trams linking the focal points of Old Delhi and New Delhi. These trams, which ran on electricity (hence making them eco-friendly), were divided into three compartments on the basis of class. These trams were considered to be the lifeline of the city (Sinhal, 2011).

- In November, 2014, it was announced that the construction of trams would be included in the Chandni Chowk Redevelopment Plan (Trams to run in Chandni Chowk in 3 years, 2014). However in 2015, this plan was thrown out by the government and e-buses were slated to replace trams due to their increased cost efficiency (No trams in Delhi, govt scraps project, 2015). In January, 2017, it was announced that a comparative study of plying of electric trams and e-buses was to be prepared and decisions could be taken based on that study. Till date however, no such change has been announced (Sultan, 2017).

### 2.4.2. Chennai

- Chennai was introduced to horse drawn trams in 1877, and the public were comfortable with the idea of the same. The concept of electric run trams, however, was very new to the public. In May, 1895 the first electric tram in Chennai commenced operation (Kolappan, 2013). The company was rife with infighting and problems throughout the operation of the tramway systems and services in Chennai. In April, 1953, the tram service in Madras came to a final halt. The company stated that it was incurring a loss of about Rs.50, 000 a month and could not continue further (Madras and its tram services: 1895 to 1953, 2010).

### 2.4.3. Kochi

- The Cochin State Forest Tramway commenced operation in 1907. The trams were used mainly for the transportation of timber and rosewood from the forest to the city. This system proved to be highly profitable and brought in revenues for the state (Churchill et al, 2005). From 1926 onwards, special finance committees were designed to gauge whether trams were still required since other methods of transporting the same

material were present at the time. Finally in 1963, after operating for 56 years, the Cochin State Forest Tramway was abolished, ostensibly on the basis of the special finance committee's report, but in reality due to the new ministry's apathy concerning tram revival. (M.B., 2016).

#### 2.4.4. Mumbai

- The Bombay Tramway Company Limited was set up in 1873, and introduced its first horse-drawn carriage in May, 1874. In 1907, the first electrically operated tram made its debut in the city. The company ran smoothly for a time, but modernization in the following years aggravated the problem of rush hour traffic, and to combat the problem double decker trams were introduced in September 1920. However, the efforts were in vain as, in 1964, following years of low patronage, operating losses, and inefficient technology, the Company shut down the nearly 100 year old tram system (The Evolution of Trams, 2016).

Other smaller cities

- Trams were also temporarily operational in four relatively smaller cities. These were Patna (1886-87) Nashik (1889), Kanpur (1907), and Bhavnagar (1926). They were shut down for reasons such as non-viability and, shifting of companies among other unstated reasons. Literature on the same is very scarce (Srinivasan, 2011).

## 2.5 Gaps in literature

### 2.5.1 Public and Workers

Our literature review doesn't provide information for the following- the age group that travels in trams, the gender composition of users, the social and economic status of the users, user's attitude towards trams and the CTC.

### 2.5.2 CTC and Employees

Our literature review failed to provide information for the following- the number of employees, attitude towards employees, workers and users, upgradation policies, financial records.

# CHAPTER 3

## Public: Observations, Analysis and Inferences

### 3.1 Methodology

To understand the reasons for the survival of the tramway systems in Kolkata, our research led us to doing a quantitative study on one of the major stakeholders in the tramways system: the public. In this regard, both the people who travel by trams and the ones that don't, become important aspects to look at. For our research into the public of Kolkata, we went on-field with a set of questionnaires that aimed at understanding the reason behind the survival of trams, why it was such an integral part of the city and if the lives of the public would be affected with the phasing out of trams. Our questions were mainly focused on what their perception of the trams were and as such the questions included demographic details, their personal and family income bracket, how often they used trams, what other modes of transport they used, their satisfaction with the tram services and the present quality of the tram services, whether they think the trams will survive and if they wanted them to survive etc (Appendix 1, Questionnaire 1).

### 3.2 Sample Description

In order to collect data from a wide range of people, we attempted to give out and fill questionnaires from various parts of Kolkata: Esplanade, Jadavpur, Maidan, Victoria Memorial, Tollygunge, Salt Lake, College Street, Kalighat etc.

The sample consisted of 130 individuals. 88 were male and 48 were females. The age group was divided into five categories- below 18, 18 to 25, 26 to 40, 40 to 60 and above 60 years of age. The maximum population fell into the second category- 18 to 25 years of age, with 49 individuals. There were 34 individuals in the category of 26 to 40 and 28 in the category of 40 to 60. There were only 12 individuals above the age of 60 and the category of the smallest size was below 18 with seven individuals. The educational qualification of the sample varied between below matric to post graduate levels. There were seven individuals in the below matric category and nine individuals in the matric category. Twenty six individuals had completed their higher secondary education only. Fifty four individuals had completed their undergraduate degree and twenty three had completed their postgraduate study. Ten individuals chose not to answer this

question. The occupation of the sample was varied, from students and teachers to housewives and businessmen and also included retired individuals.

The graphical representations of the sample description can be found below:

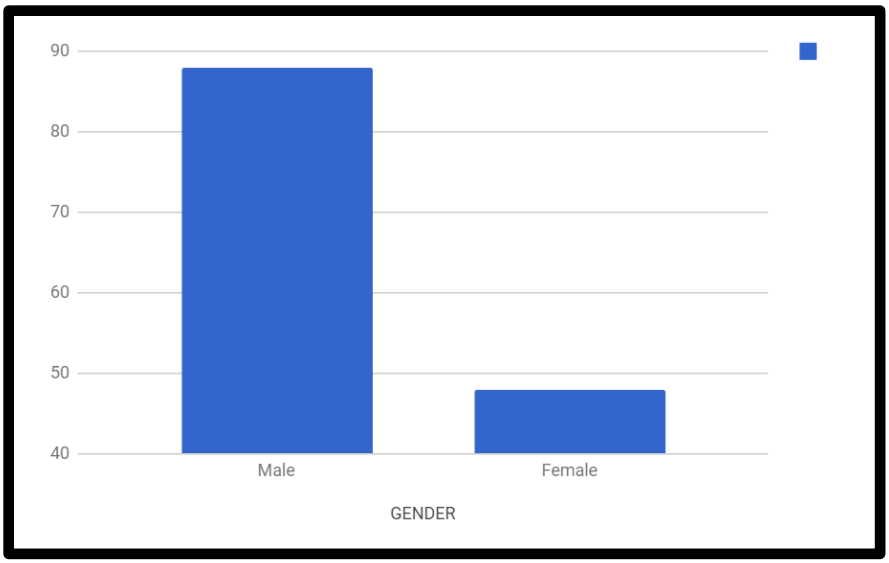


*Figure 1: Gender distribution of public*

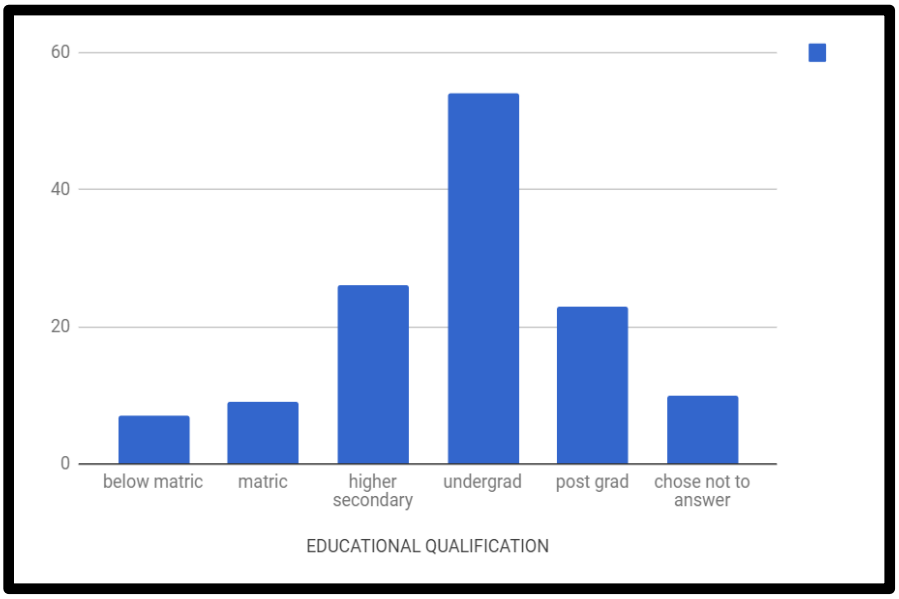


*Figure 2: Educational qualification of public*

### 3.3 Analysis

The Chi Square Test of Independence was one of the methods used for this analysis. This test is used to identify whether there is a significant association between two categorical variables in a single population. This method is used with a simple random sample population. There are four components to this analysis technique. The first step is to state the null hypothesis and the alternate hypothesis. The second step is to develop an analysis plan which will consist of the significance level and the test method. The third step is to analyze the data, where the degrees of freedom, expected frequencies, test statistic, and the P-value associated with the test statistic are found. The final step is to interpret the results of the test ("Chi-Square Test for Independence", n.d).

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Age Group\What modes of transport** | **Bus** | **Metro** | **Train** | **Personal Vehicle** | **Taxi** | **Auto** | **Cabs** | **Walk** | **Trams** | **Total** | | | | CHIDIST | | |
| 2 | Below 18 | 5 | 1 | | 1 | 1 | 2 | | | 2 | 12 | | Chi | 28.41976 | 0.648453 | | |
| 3 | 18-25 | 23 | 20 | | 6 | 12 | 10 | 9 | 1 | 17 | 98 | | DoF | (r-1)*(c-1) | 32 | | |
| 4 | 26-40 | 17 | 10 | 2 | 11 | 6 | 6 | 4 | | 16 | 72 | | Alpha = 0.05 | | | | |
| 5 | 40-60 | 18 | 8 | | 8 | 3 | 3 | | | 11 | 51 | | Chi Value > Critical Value | | | | |
| 6 | Above 60 | 6 | 4 | | 3 | 3 | 2 | | | 7 | 25 | | 0.648453 > 0.05 | | | | |
| 7 | | 69 | 43 | 2 | 29 | 25 | 23 | 13 | 1 | 53 | **258** | H0: Age and Transport Preferences are independent. | | | | | |
| 8 | | | | | | | | | | | | H1: Age and Transport Preferences are not independent. | | | | | |
| 9 | **Age Group\What modes of transport** | **Bus** | **Metro** | **Train** | **Personal Vehicle** | **Taxi** | **Auto** | **Cabs** | **Walk** | **Trams** | | | | | | | |
| 10 | Below 18 Expected Value | 3.209302 | 2 | 0.093023 | 1.348837209 | 1.162791 | 1.069767 | 0.604651 | 0.046512 | 2.4651163 | | The relationship is not significant. | | | | | |
| 11 | Observed - Expected | 1.790698 | -1 | -0.09302 | -0.348837209 | -0.16279 | 0.930233 | -0.60465 | -0.04651 | -0.465116 | | We accept the null hypothesis. | | | | | |
| 12 | (Observed - Expected)square | 3.206598 | 1 | 0.008653 | 0.121687399 | 0.026501 | 0.865333 | 0.365603 | 0.002163 | 0.2163332 | | | | | | | |
| 13 | (Observed - Expected)square/Exp | 0.999157 | 0.5 | 0.093023 | 0.09021652 | 0.022791 | 0.808898 | 0.604651 | 0.046512 | 0.0877578 | 3.25300633 | | | | | | |
| 14 | | | | | | | | | | | | | | | | | |
| 15 | **Age Group\What modes of transport** | **Bus** | **Metro** | **Train** | **Personal Vehicle** | **Taxi** | **Auto** | **Cabs** | **Walk** | **Trams** | | | | | | | |
| 16 | 18 - 25 Expected Value | 26.2093 | 16.33333 | 0.75969 | 11.01550388 | 9.496124 | 8.736434 | 4.937984 | 0.379845 | 20.131783 | | | | | | | |
| 17 | Observed - Expected | -3.2093 | 3.666667 | -0.75969 | -5.015503876 | 2.503876 | 1.263566 | 4.062016 | 0.620155 | -3.131783 | | | | | | | |
| 18 | (Observed - Expected)square | 10.29962 | 13.44444 | 0.577129 | 25.15527913 | 6.269395 | 1.596599 | 16.49997 | 0.384592 | 9.8080644 | | | | | | | |
| 19 | (Observed - Expected)square/Exp | 0.392976 | 0.823129 | 0.75969 | 2.283624917 | 0.660206 | 0.182752 | 3.341438 | 1.012498 | 0.487193 | 9.94350656 | | | | | | |
| 20 | | | | | | | | | | | | | | | | | |
| 21 | **Age Group\What modes of transport** | **Bus** | **Metro** | **Train** | **Personal Vehicle** | **Taxi** | **Auto** | **Cabs** | **Walk** | **Trams** | | | | | | | |
| 22 | 26 - 40 Expected Value | 19.25581 | 12 | 0.55814 | 8.093023256 | 6.976744 | 6.418605 | 3.627907 | 0.27907 | 14.790698 | | | | | | | |
| 23 | Observed - Expected | -2.25581 | -2 | 1.44186 | 2.906976744 | -0.97674 | -0.4186 | 0.372093 | -0.27907 | 1.2093023 | | | | | | | |
| 24 | (Observed - Expected)square | 5.088697 | 4 | 2.078962 | 8.450513791 | 0.954029 | 0.17523 | 0.138453 | 0.07788 | 1.4624121 | | | | | | | |
| 25 | (Observed - Expected)square/Exp | 0.264268 | 0.333333 | 3.724806 | 1.044172681 | 0.136744 | 0.0273 | 0.038163 | 0.27907 | 0.0988738 | 5.94673169 | | | | | | |

*Image 3: Calculation of Chi Square test for independence*

For the analysis, we selected age groups and transport preferences of people as the categorical variables, hence connecting to one of our pre-field hypotheses.

The null hypothesis for this analysis is:

$H_0$ : Age and transport preferences are independent.

The alternate hypothesis for this analysis is:

$H_A$ : Age and transport preferences are not independent.

The significance level for our analysis is 0.05. The test method used is Chi Square Test for Independence.

The equation for degrees of freedom is:

$$DF = (r - 1) * (c - 1)$$

Here r is the number of age group categories and c is the number of transport preferences.

Hence, DF= 32

The expected frequency counts is:

$$E_{r,c} = (n_r * n_c) / n$$

where $E_{r,c}$ is the expected frequency count of variable A in $r_1$, which, for example is the age group 'Below 18', and frequency count for variable B in $c_1$, which, for example is the transport preference: 'Bus'. $n_r$ is the total number of sample observations of variable A in row 1, $n_c$ is the total number of sample observations of variable B in column 1 and n is the total sample size. For example:

$n_r = 12$

$n_c = 69$

$n = 258$

$E_{r,c} = (12*69)/258 = 3.2093$

The equation for the Chi square test variable ($x^2$) is as follows:

$$X^2 = \Sigma [ (O_{r,c} - E_{r,c})^2 / E_{r,c} ]$$

where $O_{r,c}$ is the observed frequency count in $r_1$ of variable A and $c_1$ of variable B, in this case, the observed frequency count of variable A ie. 'Below 18' and variable B ie. transport preference 'Bus' and $E_{r,c}$ is the corresponding expected frequency count. For example (Below 18 and Bus):

$O_{r,c} = 5$

$E_{r,c} = 3.2093$

$O_{r,c} - E_{r,c} = 1.7906$

$(O_{r,c} - E_{r,c})^2 = 3.2065$

$X^2 = 0.9991$

The $X^2$ value for all the transport preferences for the respective age group gives us the total Chi value of that variable. For example, the total $X^2$ value for the age group Below 18 with all the transport preferences is 3.253. Following are the values for all the age groups with the various transport preferences:

Age group 18 - 25 with all transport preferences - 9.9435

Age group 26 - 40 with all transport preferences - 5.9467

Age group 40 - 60 with all transport preferences - 6.7982

Age group Above 60 with all transport preferences - 2.4782

The sum of all these values is the total Chi Value (=28.4198). This value is put into the Chi Square Distribution function which generates the p-value. The p-value is the probability of finding the observed sample statistic as extreme as the test statistic ("Chi-Square Test for Independence", n.d). We use the CHIDIST function that inputs the Chi Value and the Degree of Freedom value to generate the p-value (=0.6485). This value is then compared with our significance level which is 0.05 to interpret the results.

To answer our second hypothesis, we included a section in the questionnaire which included reasons why people don't use trams services. According to our results, the maximum population didn't use trams because they weren't accessible (28.9%). 27.3% of the population didn't use trams because they were slow and 24.2% of the population didn't use trams because they were inconvenient. The least percentage of the population (19.5%) used other means of transport such as bus, metro or personal vehicles and hence didn't use tram services.

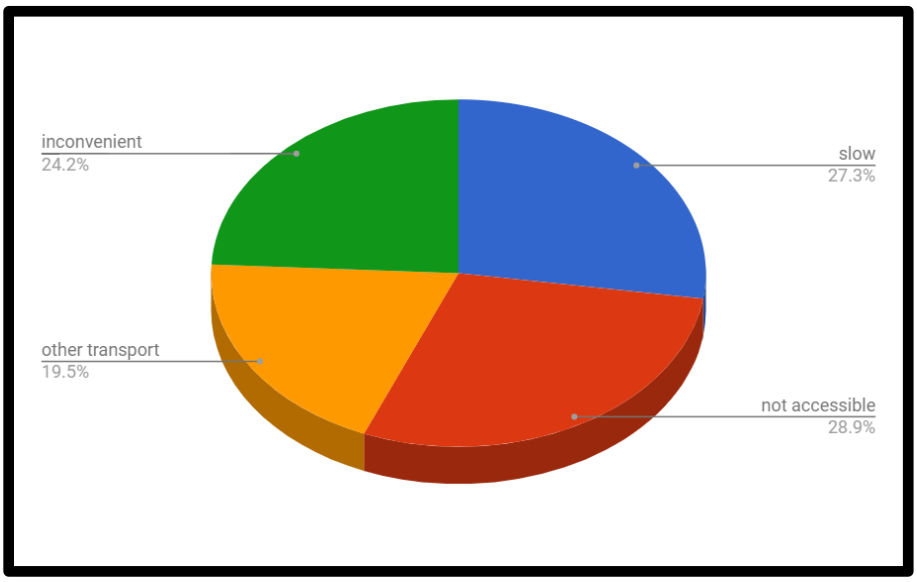


*Figure 3: Reasons for not using tram services*

We also found additional results that weren't related to our pre-field hypothesis. We found a positive correlation between wanting trams to survive and opinions on whether trams will survive as well as a positive correlation between tram service satisfaction and opinions on whether trams will survive.

| | Age Group | Gender | Want trams to survive (Y/N) | Will trams survive | How often do you use trams | Tram service satisfaction (1-7) |
|---|---|---|---|---|---|---|
| Age Group | 1 | | | | | |
| Gender | -0.2262771357 | 1 | | | | |
| Want trams to survive (Y/N) | 0.06669187354 | -0.112085 | 1 | | | |
| Will trams survive | -0.04078597204 | -0.175245 | 0.3157951294 | 1 | | |
| How often do you use trams | -0.1614030181 | 0.082860 | -0.2002990682 | -0.2217968299 | 1 | |
| Tram service satisfaction (1-7) | -0.03571630459 | 0.000599 | 0.2126202027 | 0.3805495602 | -0.4592765865 | 1 |

*Image 4: Correlation table*

### 3.4 Results and Inferences

In the Chi Square analysis, the p-value that we got was greater than the significance level (0.6485>0.05). This shows that the relation between age groups and their transport preferences is not significant and hence we accept the null hypothesis i.e. age groups and transport preferences are independent. This disproves our first pre-field hypothesis which was that people belonging to older age groups used trams more than other age groups.

For the results of why people didn't want to use trams, non accessibility was the highest reason stated. This could be because of the reduction of tramways across the city and hence only certain parts of the city may have the trams running. As we had predicted in our second hypothesis, traffic congestion and reduced speed were also causes for not using the trams. A certain percentage of the sample preferred to use other modes of transport, possibly because they are faster and more convenient. Overall our second hypothesis was proven and additional information was added to the same.

For additional correlations that we found, it showed that there was a positive correlation between the want for trams to survive and opinions on whether trams would survive. This means that if one increased so would the other. The same correlation is there for tram service satisfaction and opinions on whether trams would survive. Both of these show that the public think that the trams will survive and hence doesn't support our assumption of the eventual demise of the tramways.

*Image 5: Public lining up to use trams at Esplanade Tram Depot*

### 3.5 Limitations

There was a language barrier between the interviewer and the population. This could have led to them misunderstanding certain questions and answering accordingly. Many people didn’t want to fill the questionnaires or didn’t fill out the questionnaires completely. The information may not be accurate as it may be subject to a bias from the perspective of the person filling it out such a positive bias (when you want to appear desirable so you mark positively) or an extreme bias (marking answers as extreme).

## CHAPTER 4

### CTC and Employees

The Calcutta Tramways Company was founded in 1880, and the dilapidated office building reflects this age; this is a rather justifiable thought when you first visit the CTC headquarters. The damp and dark building on Mukherjee Road houses everyone from the top management to the lower rung employees. The windows are old with rusted bars, the doors are heavy and rickety, the walls are stained and covered partially by piled high old files; the building itself is deteriorating, much like the company it houses. The building is completely air-conditioned though, and the top management have nice rooms with giant desks covered in papers and paperweights.


*Image 6: The entrance to the CTC Office building*

## 4.1 Methodology

One of the largest stakeholders in the tramways in Kolkata is the company that runs the tramways and all of its employees. These are the people responsible for all policies concerning the survival or demise of trams. For our research regarding CTC and its employees we planned to use the following methods:

- Questionnaires: The questions focused on lower-level employees of CTC and were specifically designed to fish out specific information like demographic information, their personal and family income bracket, their thoughts about the functioning of CTC, their thoughts about the survival of trams, their thoughts about possible changes in philosophy, and their personal opinion about trams (Appendix 1, Questionnaire 2).
- Personal Interview: We managed to interview two top level officers of the transport department. The questions in the interview pertained specifically to the policies regarding Trams in Kolkata.

## 4.2 Sample Description

We distributed questionnaires to 16 employees at the CTC Headquarters, now officially known as West Bengal Transport Corporation. Six of these employees fell into the 26-40 age bracket, five were in the 40-60 age bracket, and five refused to state their age. Nine of them were female and the seven were male. Two of the employees had received education till the matric level, four individuals fell into the higher secondary category, four in the post under graduate category, four in the post graduate category, and two did not share their educational qualification. Six of the individuals held administrative positions, five were service providers, four worked in operations, and one was a peon. Much of the information from the questionnaire could not be used and the same has been discussed further in the analysis.

## 4.3 Main Observations

- CTC was started to control and maintain the functioning of trams in Kolkata during the British Raj and has changed hands several times since then. These changes have affected the underlying approach of the organization.
- The organization is highly hierarchical and bureaucratic. This affects the decision making process heavily.

- There are discrepancies in the various policies of the organizations and hence in their attitudes towards the survival of trams. CTC maintains that they are doing their best to ensure the survival of trams while most of their policies and decisions are aimed towards the phasing out of the trams
- Funds are being funneled towards other means of transport, especially buses.

## 4.4 Incidental Observations

- The CTC officials are reluctant to let any of their employees give official statements regarding the functioning of the corporation and the survival of trams so as to prevent personal opinions from slipping out and distort the carefully curated identity of the company.
- The Government, especially under the aegis of Mamta Banerjee, is mostly against the survival of trams.

## 4.5 Descriptive Analysis

### 4.5.1 About: CTC

The Organization is a Government of West Bengal Undertaking and functions under the purview of the West Bengal State Transport Corporation. The Calcutta Tramway Co. Ltd was formed and registered in London during the British rule on 22 December 1880. Under the aegis of two Viceroys of India-- Lord Curzon, who wanted to ensure better public transport for Indians and create an efficient way of transporting goods from ports and dockyards to their respective destinations, and Lord Rippon, who saw the project to its completion. After the first few years of its functioning, the company had grown to own 166 tram cars that were run by a 1000 horses and seven steam locomotives, and also over 30 kilometers of tram tracks. With the coming of the 20th century, the company and its operations began to grew. They invested heavily in the electrification of tramways and reconstruction of tracks to fit the new and improved tramcars. Existing routes were expanded and more lines were laid out to cover the length and breadth of the city. It was this point that trams were dubbed as “the lifeline of Kolkata”.

After independence, the company switched hands from the British to the West Bengal Government. First, the government of West Bengal and the Calcutta Tramways Company entered into an agreement and the Calcutta Tramways Act of 1951 was enacted, with this the government assumed all rights regarding the Tramways. Another act was passed in In 1967, Calcutta Tramways Company (Taking Over of Management) Act which transferred control of the management to the Government of West Bengal. The company and its assets were later merged with the government in 1976 with the Calcutta Tramways (Acquisition of Undertaking) ordinance being passed.

Today, the company has changed drastically and is now just a relic of its past self, much like the trams themselves. Tram routes have been shut and down-sized steadily since the 1970s. The Calcutta Tramways Company now operates Tram services in just 25 different routes in a radius of about 10 km from the centre of the city. The Company owns about 270 tramcars, of which most are not in use. The Company provides services from 8 different tram depots--Tollygunge, Kidderpore, Gariahat, Park Circus, Ghasbagan, Belgatchia, Khudiram Bose Sarani, Rajabazar, Kalighat, and it also operates a tram workshop in Nonapukur.


*Map 1: Tram routes*

The Company was also the first to introduce bus services to the public between 1920 and 1925, after which the venture was discontinued and was not taken up again till 1992. Today, the bus services offered by CTC are fast out-running the trams. CTC owns and runs 385 busses along 41 different routes across the city. It is the primary

government operator in the several districts, including Howrah, Hooghly, Nadia and others. The busses connect the districts between themselves and Kolkata. The company also operates along several long distance routes. The bus services were initially introduced to compliment the tram routes but have now grown to be a massive body of public transportation in itself that has already outgrown the tramways.

### 4.5.2 About: CTC Employees

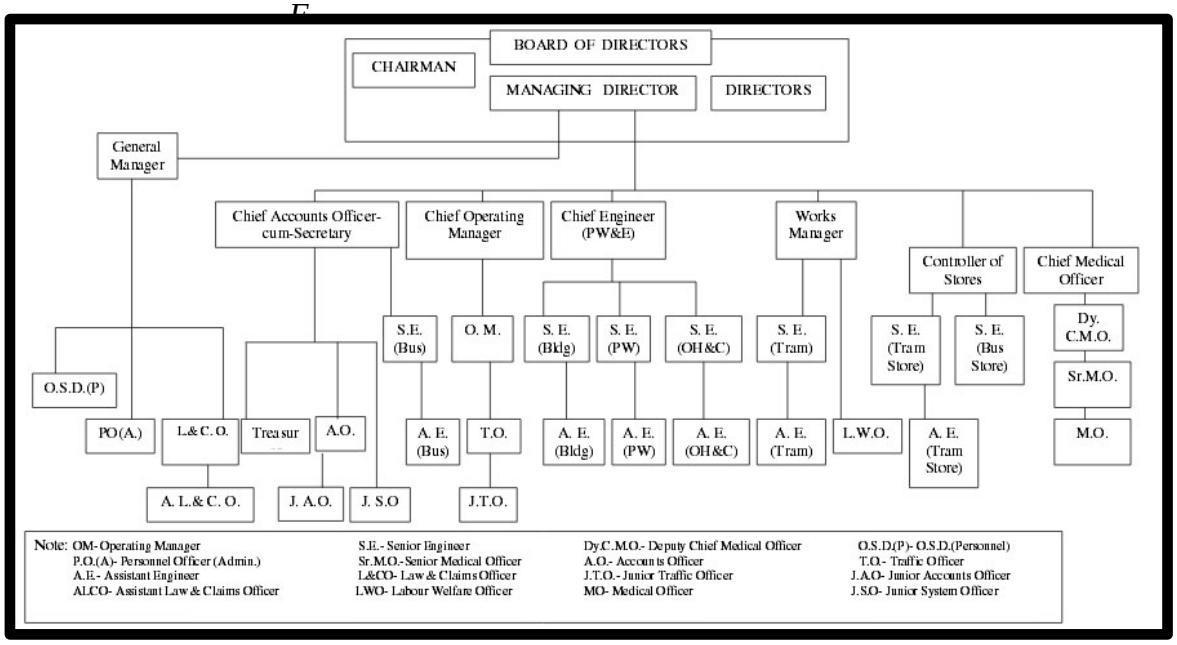


*Figure 4: Organization chart of the CTC*

The Calcutta Tramways Company is essentially a large transport organization. Its organizational structure dictates the method that the organization adopts to delegate lines of responsibilities, communication, policies, and authority. In the case of CTC, this structure is a highly hierarchical one, structured much like a pyramid. Every employee in the organization, except the ones on the very top, is subordinate to another higher level employee within the organization. There are many different entities in different departments and all of which descend into the base of staff level employees, who sit at the very bottom of the pyramid. Such a structure is not very uncommon for a government organization in India and has all the similar features of a government office.

Such a structure has both its advantages and disadvantages. This particular set-up it ensures that employees recognize and respect pre-defined hierarchy of leadership

within the organization and all major decisions are made while maintaining this order. It also serves to motivate employees to perform well and develop as specialists as most employees have narrow fields of focus and thus become experts in specific functions. This also promotes loyalty towards departments. All this is pretty evident in the case of CTC as most employees have worked there for a good majority of their careers. All top level employees are mostly public-servants who have risen through the ranks of West Bengal government officers and know the functioning of both the government and the CTC well.

While this structure does have certain advantages, the disadvantages might be enough to weigh them out. Firstly, communication between different departments is less effective and this is a problem that multiple CTC employees brought up in their interviews. They cited that since each department, within the West Bengal Transport Ministry and the CTC, have their own chain of commands and vested interests, it affects the efficient functioning of the entire system. One of the biggest problems of the organization stems from increased bureaucracy that often hinders an organization's ability to change and adapt quickly. This is one of the reasons why decisions about key changes takes so long to make and implement. This delay has gone a long way in the dilapidation of the organization and also the tramways themselves.

### 4.5.3 CTC Employees: Roles and Responsibilities

The employees of CTC can be divided broadly into two categories: Upper level employees, consisting of top and middle management, and lower level employees, consisting of lower-level management and other employees. All major decisions are made at the top level while all employees below the level of supervisors have no financial, administrative or functional power. They generally only carry out instructions of their superiors, while employees of the rank of Supervisor perform duties as per instruction of their superior, pass on the instructions to subordinates staff and supervise their work. The top level officers have financial, administrative and functional power which varies depending on the rank of the officers.

The Managing Director is at the very top of the organization and is the administrative head. Alternately, the Chairman is Chairman of the Board of Directors.

The Managing Director is responsible of all major decisions regarding the organization and they are taken by him as per existing guidelines of the Board of Directors and the Government. In matters which go beyond the existing guidelines, the Chairman and other members of the Board of Directors and the Secretary, Department of Transport, Govt. of West Bengal are consulted.

Decision in connection with various scheduled activities are normally taken at supervisory and officer levels. Supervisors are responsible in respect to various functions of operations, maintenance and administration. They are responsible for all scheduled activities as per guidelines of existing office orders. Junior level officers are responsible of decisions about any unscheduled actions that are needed are taken by them as per guidelines of existing office orders. However cases which are beyond their scope in respect of financial, administrative or technical aspects are forwarded to the Senior level officers or Departmental Heads who are responsible for decisions about cases which are forwarded by the lower level officers. All the employees discharge their duties on the basis of standing order, service rule and procedures which are established by pre-existing norms and instruction given by competent authority. The task done by an employee at any level is supervised by their immediate higher officer and they are held accountable for the same

Detailed records concerning all CTC employees is maintained by the organization and these include: Service file, Attendance register, Payroll, Asset register, miscellaneous communications and other documents. These documents are made available to the public under the Right to Information Act. The information regarding monthly remuneration of all officers can also be accessed by the public. Similarly, all boards, councils, committees and other bodies are open to the public, or the minutes of such meetings are accessible for public.

### 4.5.4 CTC Employees: Reluctance to Provide Information

The very first thing we experienced on field while interacting with CTC officers was the massive reluctance to provide any critical information. This was as much as we had expected before even starting our research. While they were warm and welcoming at

first, impressed that a young students from Pune were interested in their venture and looked to us expectantly to write a glowing and amature report; This turned to active reluctance as we started asking questions about the various shortcomings and criticisms that the CTC had been facing in the past decade. One of the things that most top level employees we interviewed avoided was commenting on the phasing out of the trams in Kolkata. In fact, in an interview with the Vice Manager of West Bengal Transport Corporation he said that he did not have the liberty to criticize the functioning of the CTC or even talk about the demise of trams in Kolkata (S. Ghosh, Vice Manager CTC. Personal Interview, 2017).

This reluctance was also manifested when we tried to get permission to interview the lower-level employees. We were strictly banned from taking any personal interviews or interact with the employees in any way. The reason that was cited was that the employees had their own politics that would affect their views on the CTC and trams. We were also told that their opinions did not hold much importance as they had no influence over the decisions made by the corporation and hence no control over the fate of the trams in Kolkata. The small compromise that we did reach was to hand out basic questionnaire to the employees but this ended up being of little use as they seemed to have been uniformly filled out by a single person. Out of the 25 questionnaires that we passed out, there were very little differences between the answers. Even the ink used to fill out the questionnaires was the same-- a result of common office supplies or a conspiracy to hide information?

This clearly points towards a discrepancy in the data that was collected and hence we have decided that it would be best to not use any of it in order to maintain the integrity of the results. However, below are the results from the questionnaires regarding the survival of trams, this also point towards such discrepancies as the policy of the CTC seems to be slow phase out but the answers do not reflect the same:

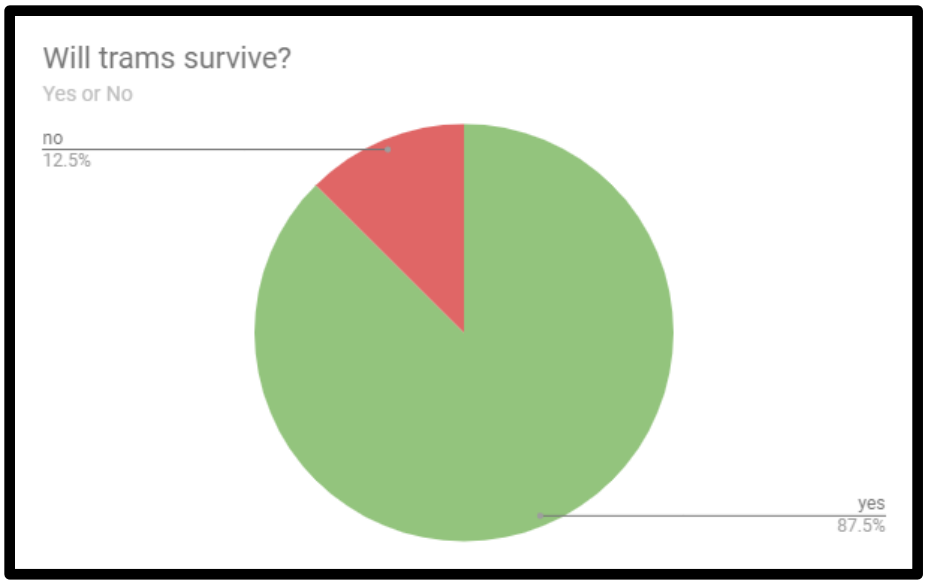


*Figure 5: Employees opinion on the survival of trams*

### 4.5.5 CTC Policies: Phasing Out Trams

Talks about phasing out the tram system in Kolkata have been floating around for a few years now. These talks gained new momentum after the three state-run transport undertakings -- Calcutta Tram Company (CTC), Calcutta State Transport Corporation (CSTC), and West Bengal Surface Transport Corporation (WBSTC)-- were merged to form the West Bengal Transport Corporation (WBTC) in 2016 and several high-level meetings were held to work out how to go about this task. The tram service have been blamed of taking up too much road space while carrying very few passengers and reducing the speed of other vehicles. Despite all the drawbacks, the task was not dubbed as being easy. The task at hand was considered massive because of its scale, as the tramways have been going through constant downsizing for close to two decades now; the task was considered massive because the large opposition the decision would face. The resistance to the phasing out comes from both the officials and workers who still want to hold on to the tramways as an efficient mode of transport and also from the public who have a special place for the trams in their hearts (Maiti, 2016).

In an interview with Krishnanedu Bandyopadhyay, a Senior Assistant Editor with Times of India who has had several years of experience covering transportation and

tramways in Kolkata, we discovered several details about the plans to phase out the trams. He said that although Kolkata is the most public transport friendly city, this has decreased in the past few years as people have taken to private mode of transportation. With an increased dependent on other modes of transport, demand for more road space, construction of flyovers, and laying down of metro alignments, the tramlines have been cut off in several parts of the city. This phasing out first started when the Left took over the governance of the state and decided to increase the road space from the meagre 6% in Kolkata to something more comparable to other big metropolitan cities like Delhi which has over 24% road space; to facilitate this increase in road space, the government decided to de-reserve the tram track and that is when trams started to decline. This decline continued when Mamata Banerjee came into power, she clearly said that tramways are incurring a huge loss and that the government cannot continue to incur losses and hence the trams need to be shut down (K. Bandyopadhyay, TOI Senior Editor. Personal Interview, 2017).

Another government policy that points to a lack of interest in the continuation of tramways is the auctioning of tram depots. A lot of tram depots have been auctioned off to private companies and builders to make offices, commercial and residential complexes. These tram depots are located in the prime areas of the city and hence the real estate value of those spots are very high, the government finds that they can earn a lot of money by just auctioning off these plots. The Tollygunj tram depot was sold to a real estate agency for Rs 181 crore (Maiti, 2016).

### 4.5.6 CTC Policies: Replacing Trams

With the trams being phased out, CTC wanted to serve its pool of commuters and reach out to the places where it tramlines were cut off. The most commercially viable replacement were buses, hence they started running buses everywhere that trams were discontinued. The buses were faster and the public started shifting naturally to them as trams got slower and more dilapidated. Now, CTC runs over 285 buses and can compete

with other corporations that run buses in the city. A large sum of the government grants are being used to buy new buses and very little money is being invested in tramways.


*Image 7: CTC buses replacing trams in Kolkata*

### 4.5.7 CTC Policies: Attempts to Preserve Trams

The official stance of the CTC is that trams cannot be completely abolished from the city. A tram are an integral part of Kolkata's transport system and also has a special heritage significance; Hence, even when the tram system is downsized, it will continue to exist. The officials we interviewed reiterated that CTC is in the process of remodeling the trams and that they will be opening up certain tram routes again.

There are two sides to the story. The remodeling of the tram was workers driven initiative. Workers in Nonapukur Workshop built the modern trams to show how trams can be modernized and reintegrated into the city's transport system. There is also a longstanding friendship between Melbourne trams and Calcutta trams and the officials from Melbourne come to come regularly to Kolkata and attempt to help with the management and running of the tramways and even offer funds to the CTC. United Nations Economic Social and Cultural Organization has also shown interest in the tramways in Kolkata as they are the oldest and one of the few surviving tram systems in Kolkata. If the government really wants, they can monetize this tram system and bring in international funds for revamping the entire system (K. Bandyopadhyay, TOI Senior Editor. Personal Interview, 2017).

The CTC is also promoting the trams as eco-friendly mode of transport. With rising scarcity of fossil fuel there is an immediate need for transport systems utilizing

alternative source of energy like solar and nuclear; Trams seem like the perfect alternative because not only do they run on electricity that can be produced by renewable resources and produce no pollution. The center is also willing to spend huge amounts of money to revamp the tramways in Kolkata and use that as a model to base similar eco-friendly transport systems in different cities (Bandyopadhyay, 2012).

One of the biggest reasons for the phasing out of trams in Kolkata is the push from the bureaucracy. The bureaucrats are neither tram users nor do they see any profit margin in the current state that trams are operating in. Any funds invested in the trams takes away from the more profitable bus system. Trams are also an obstacle for cops because traffic policemen find it to be a slow moving vehicle on the road that contributes very highly to traffic. Bureaucrats are very successful in convincing the government that trams should be phased out. If they were interested, they could show all the benefits of the trams to the government and not only ensure their survival but also facilitate their revamping (K. Bandyopadhyay, TOI Senior Editor. Personal Interview, 2017).

### 4.6 Inferences

Before going on field, we had hypothesised:

- *CTC states that it is attempting to promote trams and tramways systems but their policies go against this objective, leading to the assumed eventual demise of the tramways systems.* This hypothesis proved to be true as all official statements by the CTC were in the favour of the survival of trams but all their policies seemed to be counterproductive towards this aim. Even though they are trying to give the trams new a new life by introducing modern changes, the attempt to manufacture indigenous hi-tech trams at the Nonapukur workshop was not met with much enthusiasm. Funds contributing towards the up gradation of trams were also refused. Major tram lines have already been shut down or in the process of being shut down and land meant for tram depots is being sold away to make up for the losses that the functioning trams incur. The CTC is simply not able to transition the trams into the twenty-first century and run it on roads alongside the fast paced traffic of the city.
- *The CTC is using most of its funds for public transport other than trams, specifically, bus systems.* This hypothesis also holds true. Pre-field research pointed to the fact that CTC

had invested heavily in buses in the past decade and several sources confirmed this in interviews. Buses seem to fit the requirements of both the public and the CTC: they are fast moving and cheap, this makes them perfect for the cosmopolitan citizen; They also seem to be breaking even and returning profit, this makes them an ideal venture for the CTC. The buses are hence used to cover all areas where trams are being discontinued, making the transition very smooth as the same passenger pools moves from trams to buses. The workers working for both Trams and buses also seem to be common.

**4.7 Limitations**

One of the biggest limitations that we faced on field was the navigation of the strict bureaucracy in the government offices. Many officials either refused to talk to us or say anything incriminating on record, fearing retaliation from higher ups. We were also not allowed to distribute questionnaires to the lower level employees, the few that we did were also returned botched up.

All interactions were governed by the bureaucracy and permissions were required for everything. Even the simplest requests required the a lot of processing and returned very little results. All of our major findings came from other sources like journalists and professors who have been working on transportation in Kolkata for several years. We, however, lacked the years of experience and contacts that navigating this labyrinth of bureaucracy required.

# CHAPTER 5

## Workers

### 5.1 Methodology

The workers make up the infantry of the entire workforce of the Calcutta Tramways Corporation - they may have a smaller role to play on a general basis, but without them the entire organization would come to a halt. Through our interactions with them, we hope to get a very close look into the day-to-day operations of the CTC. For them, we planned to use the following methods:

- Questionnaires: Our aim was to interact with all the workers we could as we hopped from tram to tram across the city, in order to get a general idea of the basic commonly held ideas that they all had about the work they were doing and the corporation they worked for (Appendix 1, Questionnaire 3).
- Focus Group Discussion: Our hope was that a conversation among some of the workers would yield more results than only asking them to fill the questionnaires one at a time. The idea was that they would build on each other's' opinions and we would find common points of agreement and disagreement.

### 5.2 Sample Description

In order to collect data from a wide range of people, we attempted to give out and fill questionnaires from various tram depots around Kolkata. The depots visited by us were located in Esplanade, Tollygunge and Nonapukur. The sample consisted of 30 individuals, of which 23 were male and 7 were female. The age groups were divided into categories of 26-40, containing 12 people, 0-60, containing 16 people (the maximum), and above 60, containing a single person.one person did not respond. The maximum education levels of the sample were categorized into below matric, matric, higher secondary, undergraduate and postgraduate. Out of the sample, the category with the highest number of people was postgraduate, with 7 constituents. As for the other categories, below matric had two people, matric had 6, higher secondary had 5, and undergraduate had 6. 4 people chose not to respond. The job roles consisted of Operations, Service Providers, and Senior Staff. Of this, 12 people were in Operations, 10 were Service Providers, 1 was a member of Senior Staff, and 7 chose not to respond.

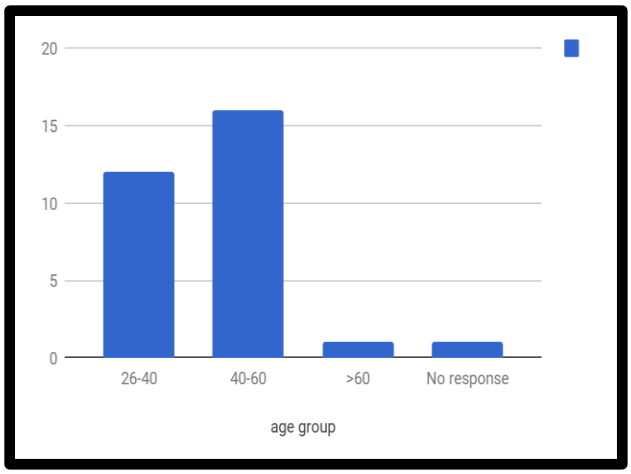


*Figure 6: Age distribution of workers*

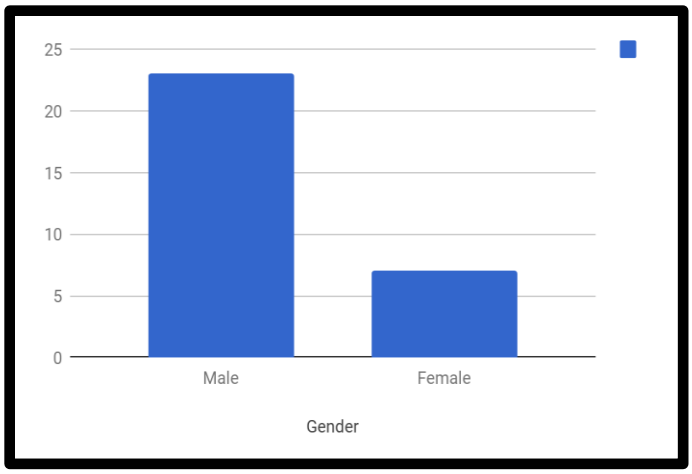


*Figure 7: Gender distribution of workers*

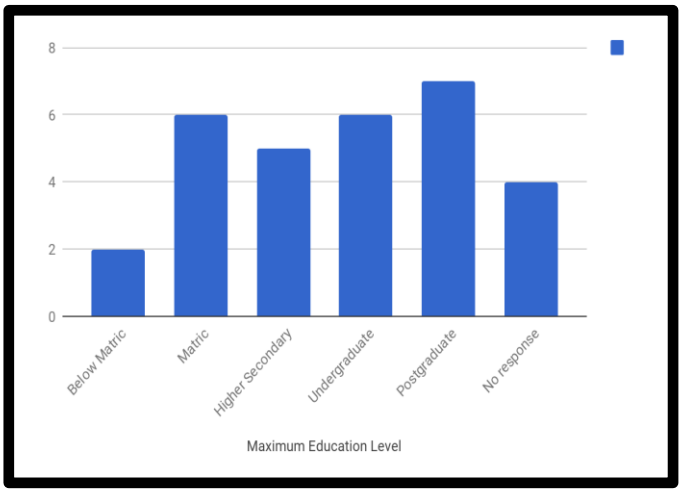


*Figure 8: Educational Qualification of workers*

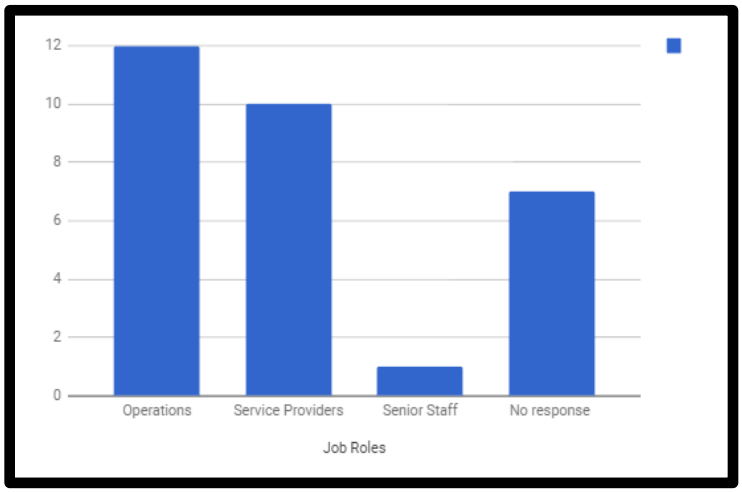


*Figure 9: Job roles of workers*

### 5.3 Main Observations

- The majority of the workers had been working for the CTC for over 10 years - less than half had been working for the CTC for less than 10 years. This told us that the CTC is not hiring a lot of people anymore.
- While most of those who received training for their job were happy with the training they received, less than half of those we interviewed received any training at all.
- Out of those who did receive training, the duration varied of said training varied from 1 year to 3 days.
- Most of them agreed that the tram systems will survive - most of them are very hopeful for their survival.

### 5.4 Incidental Observations

- There is a lot of effort that has been placed on maintaining the surviving trams, despite the lack of proper tools required to do so.
- The Workers' Union used to be a major stakeholder in the tramways system, but they have been edged out.

### 5.5 Detailed Analysis

#### 5.5.1. Tram Workshop

During our fieldwork, we visited Nonapukur tram depot for an interview with a CTC official. While a few members of the team took the interview, the rest of us were offered a tour of the establishment. Nonapukur, being the largest tram depot in Kolkata, also acts as the tram workshop, where faulty trams are brought in for repairs.


*Image 8: Tram workshop at Nonapukur*

Our tour took us all over the workshop floor, where we were given detailed information on the various parts that were being worked on - most of them were screws of different sizes, a few that the screws would be places into, bars that connect the trams to the electric lines etc. The most notable part of the tour was when we came across a motor repair.

The tram motors are all exported from Japan, and assembled in the workshop. Fixing motors had become a little bit of a hassle since there were no new motors being brought in, and all repairs had to be performed by using parts from old motors that were no longer in use from trams whose routes had been shut down a couple years ago.

The tour involved a lot of precise measurements for all the nuts and bolts that they showed us, most of which I was asked to note down. We found out later that they thought we were engineering students, for whom it was common practice to take tours of the tram workshop, hoping to understand the working of the machinery.

The tour made one thing very clear - our guide may have been passionate about the trams and the parts being created in the workshop, given his patience with us and his insistence on explaining each and every machine to us - but the workshop in itself was in a very sad state. The biggest production project at the workshop was the production of nuts and bolts that could

potentially come loose, and may have to be replaced. There did not seem to be any room for, or the tools required to create, an entirely new tram.

In the effort to bring the trams back to life, two luxury trams - *Banalata* and *Balaka* - were planned to be released during Durga Puja. These trams had been used for film shoots for years, but to get them into a condition where they could be run, they had to be built up with pieces from other trams that had been deemed unusable over the years ("The revival of…" 2011).

All parts of the trams have to be imported. Of course, there have been efforts to create indigenous trams in Kolkata. According to the official CTC website, an AC tram, *Charaibeti*, has been manufactured in the workshop, with more indigenous development projects underway ("Tram" 2014). Oddly enough, none of these indigenous trams were mentioned to us over the course of our tour. According to the Chief Operating Manager said that there was an effort to import more trams, but that the project had to be scrapped due to lack of funds. Their next project - replacing the body of the trams with a transparent polycarbonate structure - also turned out to be too expensive a project for them to undertake ("Tram to Oblivion" 2011). It seems unlikely that building indigenous trams is turning out to be a huge success.

From our experience at the workshop, we can definitely say that there was no room in which these trams would have been built, and hardly any of the machinery that would be needed for such a big project.

The potential for acquiring funds exists through the relationship with the Melbourne trams and their desire bring about a revival of trams. After all, people who can afford to travel from Melbourne to India to visit the trams every year are definitely people who can help fund the revival of trams in different ways (Bandyopadyay, Personal Interview 2017). The only reason for not utilising this resource seems to be the fact that there is indeed no motivation bring the trams back to their heyday glory.

### 5.5.2 FGD

*Image 9: FGD in progress*

A focus group discussion was conducted in order to obtain a clearer and more holistic understanding of the workers' attitudes towards the corporation they were employed in, as well as to gauge their opinions and understanding of the various facets of the public transportation industry as a whole.

The participants all work as conductors. They say they all primarily function as bus conductors, but many of them double as tram conductors as and when required. They further state that new recruits are employed solely as bus conductors, while older workers serve as tram conductors since the earlier years. They say that many workers have reason to be grateful for the introduction of buses by the CTC, as this enabled many people with low levels of education to find employment.

They are all aware that the number of trams and operational tram lines have gone down in recent years, and that the recruitment for tram conductors has all but ceased entirely, yet they are absolutely convinced that trams will continue to sustain in the future, citing their comfort and eco-friendly aspect as reasons, and regard it as an integral part of Calcutta's culture and identity. They have faith in Mamata Banerjee, and believe that she and the government are doing their best to continue the operation and improvement of trams.

The workers are on the government payroll, and receive their wages on the first day of every month, or in the case of it being a non-working day, on the 30th of the previous month, and receive holidays as per government regulation, being allowed 14 compensatory leaves, 30 earned leaves, and 15 medical leaves. They seem, for the most part, to be happy with the situation; the only inconvenience they regard is the fact that all workers cannot take a holiday on the same day, so mass festivals such as Durga Puja are working days for them. However, they also say they understand the nature of their jobs, and the necessity of having constantly running bus and tram routes, and say that they are duly compensated with other days-off provided to them.
When asked about the impact of the decline in trams on workers' lives, the participants describe the transfer of workers under 52 years old from trams to buses, clarifying that there had not been any cases of retrenchment, and that new recruits had been made until as recently as 2017, although these were for buses.

When asked further about the doubts surrounding the future of trams, they say that although they have been witnessing the decrease in tram usage, the un-reservation of tram lines, the lack of technological or structural advancement of trams, and the difficulties in effective traveling due to congestion and the closure of tram lines, they are still hopeful that they will thrive in the future, believing that public sentiment and Mamta Banerjee will prevent the closure of trams. They are also proud of the integrity of tram workers, saying that when valuable items go missing, their owners are all but guaranteed to get them back, provided that they have proof of ownership.

The participants were then asked about the role of women in the industry, to which they responded that although there were no female conductors or drivers, there were many who worked as officials in the cash department, leeds department, and head office. They also say that a few women have been recently recruited as bus conductors, but there are no women conductors for trams as of yet, although they claim that this is not due to any discrimination on the part of the CTC, but due to the fact that there have not been any female applicants.

The workers are all part of a Union named the Tram Mazdoor Sabha, which covers every worker in the tram company. Their president, Shivshankar Nandi was available to answer questions. When asked about his views on the recession of trams, he

said that the main problem, according to him, were the technological limitations, not only of the trams themselves, but with the structuring of the entire city, as trams need well-planned routes to function smoothly on, and Calcutta's growth has been unplanned and haphazard. In addition, he says that the overhead wires of the trams also sometimes come off, and that this results in delays that leave people uninclined to use them despite their lower fares. He laments the fact that conditions have gotten so desperate that trams will stop for people flagging them from the streets in order to sell more tickets.

He is far more skeptical than any of the other workers regarding the future of trams, as he believes that they are not a viable means of transport as things stand, and that the only way for them to be effective again is by major infrastructural overhaul of both the trams and city, and that since this would be very costly and time consuming, it is unlikely to ever be achieved, and that efforts such as advertising to tourists or emphasising the eco-friendliness of trams are useless if trams do not provide an efficient means of transport. He compares the state of trams in India to Holland, where trams use top of the line technology, tram lines are well integrated into the roads, and tickets can be bought in supermarkets, and says that India has no chance of competing with the conditions over there.

He also talks some more about the technicalities of the job, such as the fact that licenses are provided with the job, that there are only a few contract workers, and even they eventually get absorbed into the union, and that accommodation is provided with a deduction of Rs. 1.30 from monthly wages.

### 5.5.3 Workers' Union

The Kolkata tram workers union was the earlier union formed in Kolkata, in the year 1920. The left had a huge influence on this union up until the 1960s, given that the union was also created by Congress leaders. While more unions cropped up after 1947, this union - Calcutta Tramways Workers and Employees Union - remained the largest, with up to of 70% of workers making up this union (Ray 2017).

In 1958, the Calcutta Tramways Workers' Union submitted a charter demanding an increase in basic wages, and other financial allowances. Following a strike in the same year, these demands were agreed to and implemented.

The union clearly wielded a lot of power when they made these demands, and they realised it. This was only a few years after the Bengal famine in 1943, and the riots following it in 1946. It was during the Great Calcutta Killing that the Kolkata tram workers - both Hindu and Muslim workers - joined forces to organise protests and demonstrations to demand that the government bring an end to the communal riots (Ray 2017). Their political influence was very strong, and they enjoyed a great level of freedom and power.

An important part of their influence was their ability to stand up to the European owners and higher authorities in the CTC. Once the company changed hands and came to the Indian government in 1967, the Workers' Union's reasons to protest reduced (Ray 2017). It would have been highly likely that the union would have eventually become simply another organisation that existed with the potential for great power, but no malicious intent.

Mamta Banerjee, however, did not like the idea of an unionized work force, and tram depots began being auctioned off under the guise of recovering money lost by the tramways (Banopadhyay, Personal Interview 2017). The importance of the tramways in the city was visibly reduced, and so was the importance of the workers' union alongside it.

This move away from the tram systems could not be argued against since the rationale was that trams were losing money, and so selling the tram depots would help earn that money back. This move was jarringly sudden, and we can see how it would upset the social order of the city. Such a sudden change would definitely have huge consequences. The most obvious shift was the perception of tram workers afterwards. They were no longer a force to be reckoned with, but simply some white collared workers.

One of our aims was to look at the possibility of the eventual demise of the tram systems in Kolkata, and attempt to consider what the state of the Kolkata would be once that happened. One way of looking at this would be to look at the disintegration of the tram system so far, and to see how that has affected the society of Kolkata. This shift from the powerful unions to the sale of tram depots, if nothing else, took away the authority of a lot of people and reduced their position in their society completely.

The position of the tram workers today is nothing special, and their jobs don't hold too much value. It is simply a job that gets helps them provide for their family. Which brings us to one major point - if the tram systems are shut down entirely, then a large number of people lose their jobs and their livelihoods. It is funny to think that the same people who helped bring an end to the race riots which left scores of people homeless and hungry are the ones (or their familial relations) who may land in that situation.

### 5.6 Inferences

Before going on field, we had hypothesised that the workers would be unhappy with their working conditions, given that we had learnt that due to the losses faced by the CTC, workers are not being paid on time. This was proven by the fact that the questionnaires showed us that most of the workers were people who had been with the CTC for over 10 years, i.e. the CTC had stopped hiring new recruits.

We had also assumed that, given the losses faced, the CTC would have to shut down soon. However, most of the workers we talked to were hopeful for the continuing survival of the trams in the future.

### 5.7 Limitations

The language barrier was something we had to deal with during both our tour through the tram workshop, and while holding the FGD, since none of us knew how to speak or understand Bengali. Luckily, while we struggled with the language barrier at the tram workshop, there was an effort from both sides to be as clear as possible, with small sentence in English getting us through the encounter. During the FGD, our mentor, Professor Oindrila Dey, knew Bengali and could help us host the FGD.

It was also quite a challenge to get to speak to a lot of the workers. It was clear from the beginning that we were not wanted at the CTC tram depots, and by the end of our week there, there were careful instructions given to all tram workers that they were not to interact with us.

# CHAPTER 6

## Successes and changes in aims

**First**: *we have observed the presence and demise of tram systems in different parts of India, including cities like Delhi, Mumbai, Cochin, and Chennai. These tram systems were introduced shortly after the tram system in Kolkata, but they were all phased out while the trams in Kolkata survived. We want to try and understand the reason behind the survival of the trams in Kolkata, when they couldn't survive anywhere else*.

Through pre-field research, we delved into the histories of the tram systems in these cities, and discovered that the causes of their demise were largely similar to each other. Mainly, it had to do with the fact that trams were not advancing fast enough to keep up with newer modes of transport, and were unable to compete with them either economically or in terms of convenience. The governments of these cities then ultimately decided to cut their losses and discontinue tram services. However, this is not the case in Calcutta, although many of the same problems persist. The reason behind this could most aptly be attributed to the fact that trams occupy an important place in the culture and history of the city, since Calcutta was the first city in Asia to operate trams, they are inextricably linked to its heritage. In addition, Calcutta's tourism industry continues to feature trams as a charming facility unique to the city, and even though there is little practical use being made of them, the majority of the public feel that there is cultural and sentimental value associated with trams, and have a particular affinity towards them despite rarely using them.

**Second:** *All the data we have found so far has been quantitative data; there are no qualitative records that we have been able to find just yet. Our aim is to gain a better understanding of the tram system in the eyes of the people of Kolkata, including both the people who travel by trams, and also those who don't. We will also look at the employees who work for the Calcutta Tramways Corporation, and the workers directly in charge of the running of the trams through the city.*

Through our employment of techniques such as questionnaires, face-to-face interviews, and focus group discussions, we were able to obtain a clearer picture of the sentiments and perceptions of various demographics of people in regard to trams. We managed to get the opinions of a large number of a diverse range of people, including the public, low-level workers

in the company, such as drivers and conductors, and high-ranking officials. In this manner, we were able to acquire a sorely needed qualitative aspect to complement the pre-existing quantitative data already available. This qualitative analysis provides another dimension in determining the reason for the trams' continued survival in Calcutta, seeing as the public's view of them being culturally important is a driving force behind their perseverance.

**Third:** *there may be a possible future in which the tram system may have to come to an end. We want to understand what the implications of this end may be, i.e. how the city and its people may be affected by this change.*

We went on field with the assumption that the potential demise of the tram system would be a major upheaval not only in the transport sector, but also in the public sphere in general. However, upon actually conducting our research, we discovered that trams were already more or less in the final stages of being phased out, with little concern from the public or workers themselves. Since trams were so rarely in use in the first place, there was little difference in the day to day lives of people. Coupled with the fact that many alternative and effective modes of public transport exist, such as buses and the metro, people already had sufficient and frankly superior means of travel. The only attachment most people felt to trams was a vague sentimentality, and although some claimed that they would feel sad about the phasing out of trams, it is clear that it would have no real impact on their day to day lives. As for the workers, most of the tram conductors double as bus conductors, and would have no trouble in transferring to being full-time bus conductors. Moreover, all of the recent recruits of the CTC have exclusively been bus drivers or conductors. The only members that are solely devoted to operating trams have been employed since very early on and will be well past retirement age when phasing out policies come into effect.

# CHAPTER 7

## Conclusion

It is quite clear through all the chapters mentioned before that there is, despite all the limitations, a large amount of acceptance for the tram systems to remain. Through the questionnaires for both the workers and the public, we can see that the opinion of the trams is a very positive one, and that most of these people want the trams to survive. There was no correlation between the two sets of people who filled out the questionnaires, but the opinion remained the same. As our documentary on the matter aims to show, people have a lot of memories connected to the trams, and it is not just these memories that become a part of their lives, but also the trams themselves. It becomes a matter of nostalgia, and the inability to let go of things from the past.

The employees of the CTC do not become a part of this nostalgic experience. The highest-level employees are usually from different cities, and don't feel the same connection to the city as the others may. We cannot tell for certain whether or not there is any sort of potential investment from their end, given that we cannot tell for certain whether they even filled out the questionnaires or not.

They may be responsible for the maintenance and the running of the trams, but the trams seem to be getting phased out, with most of the tracks being shut down by the CTC. This affects the workers as well, with a lot of their jobs coming on the line because of the reduction of the tram services. There are clear relationships to be seen between the three factions that we observed, and all of them come together in a variety of different ways.

Our research, of course, had a few limitations we could not get around. For starters, the language barrier hindered our progress in quite a few places. On top of that, we were also dealing a branch of government, and so had to deal with governmental hierarchies and the roadblocks associated with it in a language we were not familiar with. We also had a limitation that we faced in our literature review that returned while we were writing this report - the RTI that we had filed to gain access to the financial records of the CTC, which we never got a concrete response on.

We would also like to mention a few ways in which this research could be taken forward, if anyone decides to do so - we could have attempted to contact more journalists, or tried to talk to more employees than we were able to.

All in all, this was a fascinating topic to cover and a very valuable experience for us. We hope that it seems that way to anyone else who reads this, and that this could be taken further in the future. The trams of Kolkata really are a landmark, and should be preserved.

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# APPENDIX

## Questionnaire 1

**Discover India Program 2018**
**FLAME University, Pune**

**The Discover India Program is an experiential research activity that entails conducting a field-based group project focusing on the exploration of varied aspects of India's culture and heritage. This team of students has undertaken a research project on the Tramway systems of Kolkata.**

**Disclaimer- The following is a questionnaire designed for academic research on the tramway systems of Kolkata for the Discover India Program. Any and all information procured from the questionnaire will only be used for academic purposes. No personal data will be shared with any third party without prior consent, and anonymity will be preserved.**

**Date:** **Time:** **Venue:**

**Name of investigator:**

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1, Which of the following age groups do you fall in?

- ❑ Below 18
- ❑ 18 years- 25 years
- ❑ 26 years- 40 years
- ❑ 40 years- 60 years
- ❑ Above 60 years

2. What is your gender?

- ❑ Male
- ❑ Female
- ❑ Other

3. What is your educational qualification?

- ❑ Below Matric
- ❑ Matric
- ❑ Higher secondary
- ❑ Undergraduate College
- ❑ Post graduate College

4. What is your Occupation?

5. What is your monthly income?

- ❑ Upto 50,000
- ❑ 50,001- 1,00,000
- ❑ 1,00,001- 2,50,000
- ❑ 2,50,001- 5,00,000

- ❑ 5,00,001- 10,00,000
- ❑ 10,00,001- 1,00,00,000
- ❑ 1,00,00,001 and above

6. What are the number of members in your family?

Less than 2 3- 5 6-8 8 or More

7. How many of your family members are earning (apart from yourself)?

8. What is your family income?

- ❑ Upto 50,000
- ❑ 50,001- 1,00,000
- ❑ 1,00,001- 2,50,000
- ❑ 2,50,001- 5,00,000
- ❑ 5,00,001- 10,00,000
- ❑ 10,00,001- 1,00,00,000
- ❑ 1,00,00,001 and above

9. How often do you travel by trams?

Daily Weekly Monthly Yearly Rarely Never

9.1. If yes, why do you use it?

- ❑ Easier to travel than other modes of transport
- ❑ Affordability
- ❑ Safe
- ❑ Daily commute
- ❑ I enjoy it
- ❑ Others (please specify)

9.2. If no, why don't you use it?

- ❑ Not accessible
- ❑ Slow
- ❑ Inconvenient (please specify how)
- ❑ Others (please specify)

10. What alternate modes of transport do you use on a daily basis? (can select more than one)

- ❑ Hand-pulled rickshaws
- ❑ Auto rickshaws
- ❑ Taxi
- ❑ Private cabs
- ❑ Metro
- ❑ Bus
- ❑ Personal Vehicle
- ❑ Others (please specify)

11. On a scale of 1 to 7 (one being least frequently and seven being most frequently), are you satisfied with the tram services? Why?

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

12. On a scale of 1 to 7 (one being the worst and seven being the best), how would you rate the quality of trams and their services?

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

12. Would you want the tram services to survive?

Yes No (please specify)

13. Do you think they will survive?

Yes (please specify) No (please specify)

14. Were you aware that they are eco-friendly?

Yes No

## Questionnaire 2

**Discover India Program 2018**
**FLAME University, Pune**

**The Discover India Program is an experiential research activity that entails conducting a field-based group project focusing on the exploration of varied aspects of India's culture and heritage. This team of students has undertaken a research project on the Tramway systems of Kolkata.**

**Disclaimer- The following is a questionnaire designed for academic research on the tramway systems of Kolkata for the Discover India Program. Any and all information procured from the questionnaire will only be used for academic purposes. No personal data will be shared with any third party without prior consent, and anonymity will be preserved.**

**Date:** **Time:** **Venue:**

**Name of investigator:**

---

1. Which of the following age groups do you fall in?

- ❑ 18 years- 25 years
- ❑ 26 years- 40 years

- ❑ 40 years- 60 years
- ❑ Above 60 years

2. What is your gender?
   - ❑ Male
   - ❑ Female
   - ❑ Other

3. What is your educational qualification?
   - ❑ Below Matric
   - ❑ Matric
   - ❑ Higher secondary
   - ❑ Undergraduate College
   - ❑ Post graduate College

4. What is your role?
   - ❑ Admin
   - ❑ Operation
   - ❑ Service Provide
   - ❑ Other (Please specify)

5. What is your monthly income?
   - ❑ Upto 2,50,000
   - ❑ 2,50,001- 5,00,000
   - ❑ 5,00,001- 10,00,000
   - ❑ 10,00,001- 1,00,00,000
   - ❑ 1,00,00,001 and above

6. What are the number of members in your family?
   - ❑ Less than 2
   - ❑ 3- 5
   - ❑ 6-9
   - ❑ 10 or More

7. How many of family members are earning (apart from you)?
   - ❑ None
   - ❑ 1
   - ❑ 2
   - ❑ 3
   - ❑ 4 and above

8. What is your family income?
   - ❑ Upto 2,50,000
   - ❑ 2,50,001- 5,00,000
   - ❑ 5,00,001- 10,00,000
   - ❑ 10,00,001- 1,00,00,000
   - ❑ 1,00,00,001 and above

9. What is your monthly expenditure?

- ❑ Below 50,000
- ❑ 50,000- 1,00,000
- ❑ 1,00,001- 5,00,000
- ❑ 5,00,001- 10,00,000
- ❑ 10,00,001- 20,00,000
- ❑ 20,00,001 and above

10. Have you been working before joining CTC?

Yes No

11. If yes, What was your occupation before this job?

12. Do you provide training for your employees and workers prior to their official employment?

Yes No

13. Was it sufficient?

Yes No Maybe

14. How many hours do you work per day?

- ❑ Less than 8 hours
- ❑ 8-10 hours
- ❑ More than 10 hours

.

15. Are you allowed to take any paid leaves?

Yes No

16. Do you think buses are more profitable than trams?

Yes No Maybe

17. Are trams running on severe losses?

Yes No Maybe

17. 1. If yes, why haven't they been discontinued?

- ❑ Heritage Value
- ❑ Public Demand
- ❑ Government policy (please specify)
- ❑ Other (Please specify)

18. On a scale of one to seven (1- best; 7- worst), do you think the workers of the tram services are satisfied with their jobs?

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

19. Do you think trams will survive?

Yes No Maybe
( please specify)

20. Were you aware that trams are eco-friendly?
Yes No Maybe

21. Is CTC taking any measures in advertising for trams?
Yes No Maybe

22. Is there any need for further promotions?
Yes No Maybe

23. Has there been any policy upgradation?
Yes No
(please specify)

24. On a scale of 1 to 7 (1- worst, 7- best), how well do you think the public have responded to this advertising?

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## Questionnaire 3

**Discover India Program 2018**
**FLAME University, Pune**

**The Discover India Program is an experiential research activity that entails conducting a field-based group project focusing on the exploration of varied aspects of India's culture and heritage. This team of students has undertaken a research project on the Tramway systems of Kolkata.**

**Disclaimer- The following is a questionnaire designed for academic research on the tramway systems of Kolkata for the Discover India Program. Any and all information procured from the questionnaire will only be used for academic purposes. No personal data will be shared with any third party without prior consent, and anonymity will be preserved.**

**Date:** **Time:** **Venue:**

**Name of investigator:**

---

1. Name (Optional*)-

2. Which of the following age groups do you fall in?

- ❑ Below 18
- ❑ 18 years- 25 years
- ❑ 26 years- 40 years
- ❑ 40 years- 60 years
- ❑ Above 60 years

3. What is your gender?

- ❑ Male
- ❑ Female
- ❑ Other

4. What is your educational qualification?

- ❑ Below Matric
- ❑ Matric
- ❑ Higher secondary
- ❑ Undergraduate College
- ❑ Post graduate College

5. What is your job role?

- ❑ Administration
- ❑ Operation
- ❑ Service Provider
- ❑ Other (if any, specify)

6. What was your occupation before this job?

7. What is your monthly income?

- ❑ Upto 50,000
- ❑ 50,001- 1,00,000
- ❑ 1,00,001- 2,50,000
- ❑ 2,50,001- 5,00,000
- ❑ 5,00,001- 10,00,000
- ❑ 10,00,001- 1,00,00,000
- ❑ 1,00,00,001 and above

8. What are the number of members in your family?

Less than 2 3- 5 6-8 8 or More

9. How many of your family members are earning (apart from you)?

10. What is your family income?

- ❑ Upto 50,000
- ❑ 50,001- 1,00,000
- ❑ 1,00,001- 2,50,000
- ❑ 2,50,001- 5,00,000

- ❑ 5,00,001- 10,00,000
- ❑ 10,00,001- 1,00,00,000
- ❑ 1,00,00,001 and above

11. How long have you been working for the CTC?
    - ❑ Less than 1 year
    - ❑ 1 – 5 years
    - ❑ 5- 10 years
    - ❑ 10 years and above

12. Were you given any training when you started working for the CTC?

Yes No

12. 1. If yes, what was the duration? Was it sufficient?

Yes No

13. How many hours do you work per day?
    - ❑ Less than 8 hours
    - ❑ 8-10 hours
    - ❑ More than 10 hours

14. Do you get paid holidays? If yes, how many?

15. Do you use trams?

Yes No

15. 1. If not, what other mode of transport do you use?
    - ❑ Hand-pulled rickshaws
    - ❑ Auto rickshaws
    - ❑ Taxi
    - ❑ Private cabs
    - ❑ Metro
    - ❑ Bus
    - ❑ Personal Vehicle
    - ❑ Others (please specify)

16. Do you think trams will survive?

Yes No

(please specify)

17. Were you aware that trams are eco-friendly?

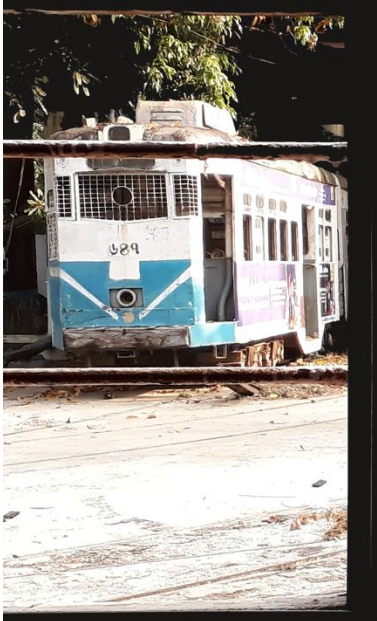
Yes No

18. Do you think the general public likes the trams?

Yes No Maybe

19. Do you think they would care if they got discontinued?

Yes No Maybe



“Agar hum chutti le lenge, toh phir yeh sheher kaun chalayega?”