Factors for overcrowded metro stations

Submitted by- Ritik Malik 2018406, Abinash Pegu 2018123, Naorem Edison 2018161, Yash Raj 2018422

[reference](#)

Introduction

We picked the topic "Factors for overcrowded metro stations" as our IED research activity. For this activity, we went out and explored various metro stations like Rajiv Chowk,GovindPuri, Kalkaji,Nehru Place and Okhla metro stations to witness the scenarios of overcrowding.

During our Field Observation, we were caught by the police as we were unaware of the fact that it's illegal to take pictures inside metro stations.The policemen took us to their station office and enquired us about the same. The officials exempted us from taking any fine as we mentioned them that it was a college research activity.

But we had to write an apology letter and they checked our gallery and let us delete all the field observation photos we took for the activity.

But nonetheless, we do still have some interview videos and the group photo we took in front of the Nehru Place metro station.

Interviews:

During the interviews, we asked people about problems faced by them as per their experience. Most of them blamed the poor ticket counter system for the long lines in the stations. They told that only 1 or 2 counters were functional. Some of them blamed that in some metro stations, the frequency of the metro was also very low. They also argued that some illiterate people cause unnecessary trouble in the line as they are unaware of the rules and regulations about how to use the tokens and other general rules. They also stated that people should prefer card over tokens and move some time ahead of their schedule to reach on time. Also they told that despite the increased rates, peoples' 1st preference is metro when it comes to public transport since its fast, reliable, on time and no traffic issues. They also mentioned that due to illiteracy, people think that the money will get detected from their card and will get scammed.

The videos and photos for the field observations & the interview are included in the zip file.

Observations:

Metros are the main preference in Delhi due to its cheap and freely accessible nature.It also takes lesser time to reach the destination than to get stuck in traffic.Due to these reasons,the general people prefer metro over any other means of transportation.

As a result, overcrowding occurs in the stations.But there were some other factors as well that affect overcrowding.We did find some specific reasons. Those are mentioned below.

1) First, we saw that there a lot of rush going on for the purchase of token. Main reason being that out of 6-7, only 2 of the token vending counters were working.
2) We also saw that a lot of people were unable to put the token on the machine during the entry. They were putting it vertically rather than horizontally.
3) The token vending machines were not working properly. It doesn't recognizes bank notes some of the time and again it was not understandable to illiterate people.
4) There was also huge a line for scanning by the security since out of 2-3 security gates,only 1 was operational.

Brainstorming:

1) Installing a brand new Security Entry system to reduce overcrowding.Most of the devices(The Walk-Through Metal Detectors) which are used in the Security system to detect metals or sharp metal are made from the concept PI i.e. Pulse Induction System. In a nutshell, it creates a magnetic field and changes polarity inside and that's how it detects.

So Instead of making a huge line in a security Entry, DMRC can install the PI (we can observe in Airports) which might need some modification like increasing the frequency of the PI model and range. And hence we don't need security since it will already be installed in the gate entry for the passengers.

2) Cards should be prefered over tokens :

Because for taking tokens, the rush (queue) will generate eventually and it will congest near the machine.But if we use the card instead of tokens ,the fact that it has been recharged for some value, people won't have to go through the rush and start making lines. So using cards will reduce the crowd, and it is indeed a smart way.

3) The DMRC can appoint some people to help the illiterate people to know the procedure and some rules and regulations, because they are largely responsible for creating the mess and huge lines which also affect the other people.

Reflection:

1) As for the *interview*, there were people who were not willing to take the interview even though they were sitting idle outside the stations.Many thought of it as a prank and so refused to speak anything. People were also in a hurry most of the time and it was a bit difficult for us to find the right people to interview.

2) During the *observations*,as already mentioned, we had to delete all the evidence we had of the field and so are unable to present them in the activity.Moreover, we had to change multiple stations to find the right people as some of them were really crowded and there was no enough space and time for proper observation of the place.

3) We found the *brainstorming* part quite interesting. We had some discussions with some security staff also like,we came to know about the equipments that are being used during security check. All the members of the team came up with different ideas and solutions from different perspectives.

Through this activity, we came to know a lot about the cause and effects of overcrowding in Delhi Metro. The field observations helped us immensely in understanding about it.