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Impact on Dhaka Metro Rail

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Abstract: In light of an essential study of customer of Dhaka metro rail and other transport proprietor in Dhaka, Bangladesh, this paper assesses the effect of the opening of Dhaka Metro rail in Dhaka city. Nowadays, aggressive situation consumer fulfillment is the main demand of any consuming things. The association should point out not just as fulfilling the customer yet additionally center on the delighting them. It's a great challenge for the Bangladesh government to take the decision of making metro rail and reducing the traffic congestion problem. We need to find out that the demand of the consumer and what they expect from this project, what problem are facing right now, how much improve we can see by doing this project. This research is using primary data collection with a questionnaire form, there are 40 respondents' samples, and tried to find the impact of Dhaka metro railway and the customer service satisfaction.

IMPACT ON DHAKA METRO RAIL

Metro Rail

Construction work begins



Introduction: Nowadays, traffic congestion is a major problem in Dhaka city. It is the 9th largest city in the world by population, which covers 360 km² and bearing more than 15 million people. To solve the traffic congestion problem, to reduce traffic jam, people's unavoidable wasting time Bangladesh Government takes the metro rail project in Dhaka city. "Metro Rail" project, once completed, would change the commuting experience of Dhaka people.

Administrations quality and consumer loyalty have been for over 10 years two imperative themes both for the scholarly world and for the inquiries about in the field of marketing. The consideration coordinated to these two ideas, administrations quality and consumer satisfaction is chiefly because of the challenge in the market, just as to the weight of political elements and of the populace, over associations in the field of open organization. Dhaka Metro Railways is a very popular sector of advanced transportation practice in Bangladesh started because of low costing and high capacity. Dhaka Metro is going to be a world-class metro and very first-time metro in Bangladesh. A dream of all Dhaka city residences specially for those people who face the vehicle congestion every day. To guarantee unwavering quality and security in train tasks, it is furnished with the most present-day correspondence and train control framework. It has a condition of workmanship air conditioned coaches. Ticketing and passenger control were through the Automatic Fewer Collection System, which is introduced in the country for the first time. Travelling in Dhaka Metro will be pleased with trains ultimately available at three minute frequency. Passages and ways out to Metro stations will be constrained by folding entryways worked by 'smart cards' and contact less tokens. For accommodation of workers, sufficient number of lifts will be introduced at Metro stations. An extraordinary part of Dhaka Metro is its mix with different methods of open transport, empowering the suburbanite to helpfully exchange starting with one mode then into the next. In short, Dhaka Metro is an innovator for such frameworks in different urban areas of the nation and in the South Asian locale.

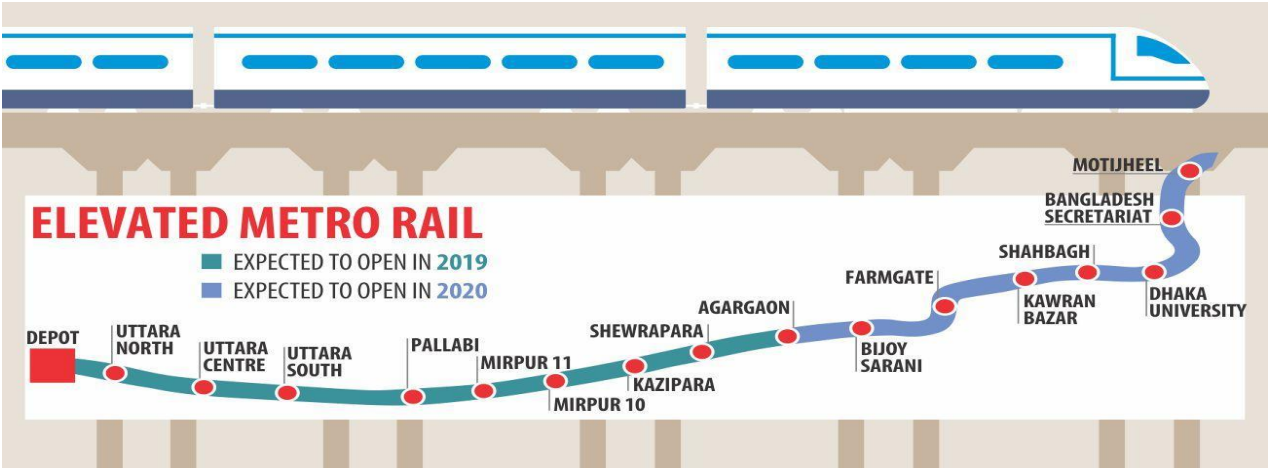
PROJECT HIGHLIGHTS:

Feature	Detail
Project name	MRT (line 6) - Mass Rapid Transit
Aim	Their aim to introduce effective and smart transportation, to arrange mass transit facilities for common people, and to introduce safe and environment-friendly transportation.
Implementing Office	Dhaka Mass Transit Company Ltd. (DMTCL)
Viaduct	20.1 km-long viaduct from Uttara 3 rd phase to Bangladesh Bank, Motijheel
Land Acquisition	23.4 hectares (58.91 acre) land had been purchased from Rajuk for MRT line-6 depot area in January 2016
Project Duration	July 2012 to June 2024
Expectation of Completes	December, 2019
Approval Status cost and Expenditure	A total cost of Tk 21,958 crores , government finding of Tk 5,390 crore , and JICA funds worth Tk 16,595 crore . Already spent: 14.87%

8 Contract Packages	Cost and Construction Firm	Progress
CP- 1 (Depot Land Development)	Tokyo Construction Ltd Cost: Tk 5,670,674 Deal signed: March 27, 2016	100% of work completed-including earth filling. Financial progress at 77.63%
CP- 2 (Civil ad Building work in Depot)	ITD- Sinohydro JV Cost: Tk 15,955,699,230 Deal signed: May 3, 2017	Financial progress is 10% and all-out progress is 7%
CP- 3 & 4 (Civil works: 9 stations and 11.73 km viaduct from Uttara to Agargaon)	Italian-Thai Development Cost: TK 42,305,519,653 Deal signed: May 3, 2017	All-out progress is 8% while financial progress is 17.4%
CP – 5 (Construction of 3.20 km viaducts and 3 elevated stations between Agargaon and Karwan Bazar)	Tekken Corporation (Japan) Abdul Monem Ltd. (BD) – AB Nikko Koygu Co. Ltd. (Japan) JV Cost: Tk18,546,970,430 Deal signed: April 30, 2018	Construction work has started
CP- 6 (Civil Construction of 4.92 km viaducts and 4 elevated station between Karwan Bazar and Motijheel)	SMCC-ITD JV (Sumitomo Mitsui Construction Co. Ltd Japan and Italian-Thai Development Public company ltd Thailand JV) Cost: Tk23,320,311,015 Deal signed: April 30, 2018	Construction work has started
CP- 7 (Electric and Mechanical system)	JICA conferred its concurrence on the financial evaluation report	Price negotiation on going

	and gave consent to commence price negotiation on April 16, 2018	
CP- 8 (Rolling stock and Depot equipment)	Kawasaki-Mitsubishi consortium Deal signed: August 6, 2017	Financial progress is 16.30% and all out progress is 10%
All-out progress		24.9% completed till December

Route of the metro rail – 06:



In this picture, we can see that the route of metro line-06 will depot from Uttara Diabari, then Uttara North, Uttara center, Uttara south, Pallabi, Mirpur 11, Mirpur 10, Kazipara, Shewrapara, Agargaon, Bijoy Sharani, Farmgate, Karwan Bazar, Shahbag, Dhaka University, Bangladesh Bank, and the last station is at Motijheel.

Literature Review:

Dr. Som Sankar (2012), in his article he has identified the customer satisfaction is first priority in this competitive scenario. And he has identified that it's a great challenge to satisfy customer and delighting them. He tried to find the factor, which has an impact on Kolkata Metro Rail customer satisfaction.

Conducted by Md. Saniul Alam (2010), he found out that in developing countries the urban transport problem is a big issue for city or country. For higher popular density, public transport user wants to use the metro rail for a better future.

Conducted by Nuzhat Azra (2016), she found in her research in urban design and over a polluted city like Dhaka and this uncontrolled urbanized is the main reason of congestion. She found out that if people use public transport more than the demand of private transportation will decrease such as using metro rail in Dhaka city.

A research conducted by Ms. Disha Thanai and Nishant (2017), customers and their satisfaction are the main focus for a firm. Their study focused on identifying the customer satisfaction of Delhi metro rail and they found that most people want cleanliness station and coach and they are satisfied with Delhi metro rail, such as air condition, automatic door, smart card system, security system etc.

OBJECTIVE OF THE STUDY

This investigation principally means to evaluate the impacts of customer view of the different parts of administrations given by public and private transportation benefits on their dimension of fulfillment or satisfaction with reference to Dhaka Metro Railways. This study actually proposes a structure of the major measurement which have an impact on the perceived quality of the services provided by the Dhaka Metro Railways and the satisfaction of the customer. In this way, the objectives of this study could be reckoned as follows-

- To detect the importance attached to the different part of Dhaka Metro by the customers.
- To find out the factors affecting customer satisfaction with Dhaka Metro Railways based on the customer's perception of the quality of performance of these factors.
- To find out how much problem customers are facing.

Framework of Analysis:

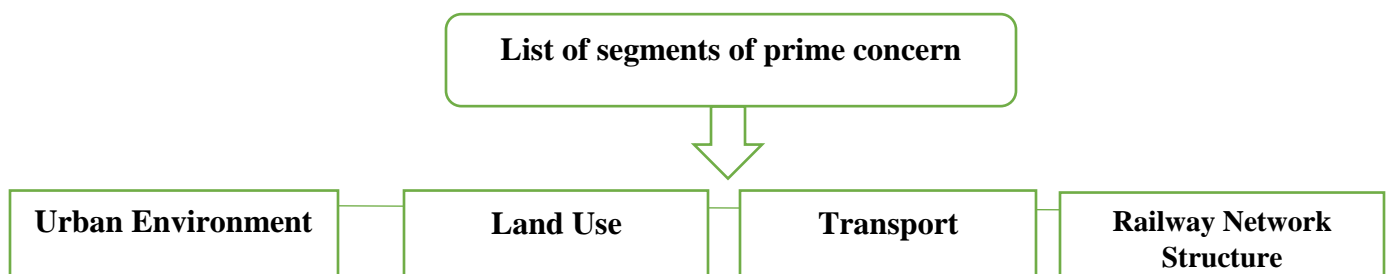
This analysis incorporates the basic appraisal of the serious issues which have a clear effect on Metro rail fundamentally. The assessment was done in one way: by qualitative analysis of some issues indicated by key interviewees who are knowledgeable about the current research problem. Details about the methods of study, e.g. data collection, sample size, data analysis is discussed in the relevant sections.

Sample size and data collection process:

There are total of 40 respondents and this research is using primary data collection with a questionnaire form. There are 18 females and 22 males. 25 people are student and 15 people are involved with a government job, business, private job and housewife. All of them were asked by randomly, mainly who uses a bus or other transportation in those areas where the metro rail route exists.

Study Area Characteristics:

There are four factors we should have concern. Those are:



- **Urban Environment:** There is something serious issue that we should have concern about because of Dhaka city and the people of Dhaka city. And urban environment is one of them. In urban environment factors, there could be 4-5 variables what are representing the urban environment. Those are Security, Extreme climate, Touristy area, Accidents, Transit Oriented Development. Security services can make repulsion/attraction of passengers. If the security is good enough, then people will attract to consume this, the

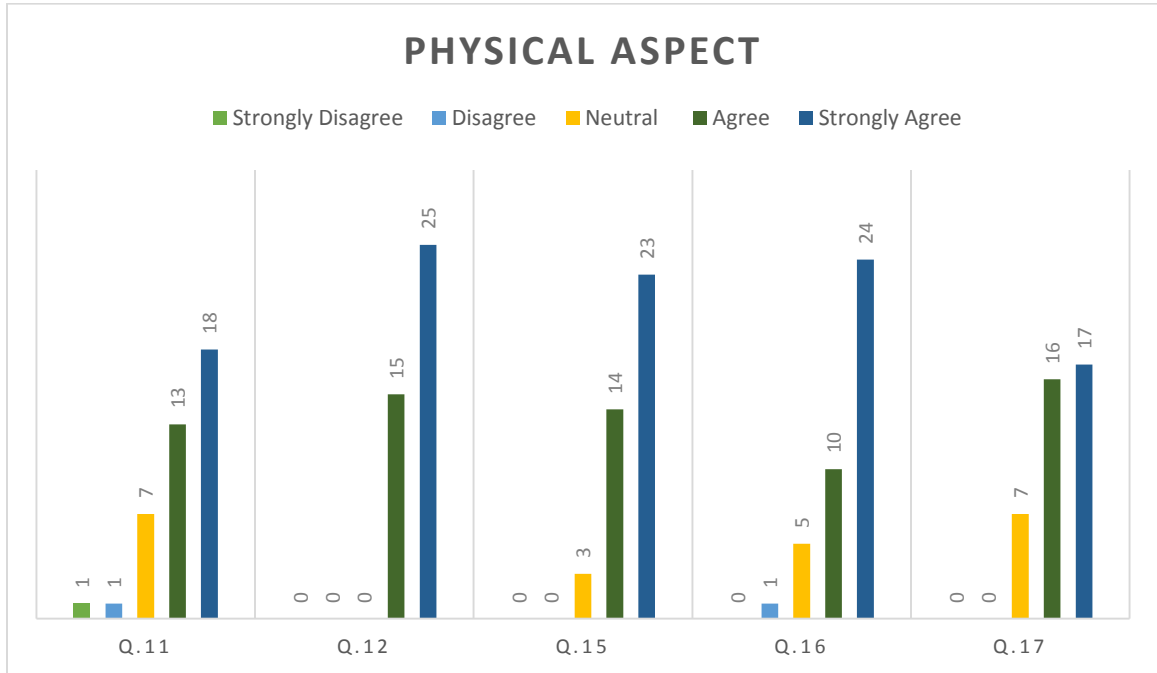
organization should take care about the security. Sometimes some area became too much dangerous for the natural disasters; the organization should avoid those routes. People could be dying from trampling, so people need more space to avoid this accident.

- **Land Use:** By taking an informal interview, people suggest that the organizations should use the land where jobs in the catchment area are low. That means they should use those areas where the pressure on the road and passengers are quite low. But the organization is using those areas what is the busiest route in Dhaka but obviously for making a better Dhaka. People are facing some problem for the construction, roadside tong and shopper says that their shop becomes filled with sand. And also, sound pollution makes them mad. The most problematic thing is using 11 meters road for the construction. For those using the road, side roads become much too narrow and the buses, private transportation gets stuck for hour and hour. Some people say that they can sacrifice those things if they get the best feedback as soon as possible. They want the best metro rail and ready to sacrifice for that.
- **Transport:** In the transport sector, the variable could be Intermodal Integration (such as feeder bus, parking space, bicycle tracks, etc.), Price quality, Service quality, Walkability- station should be in walking distance so that people don't need to catch buses to go to the station, gasoline value- as metro rail is going to run by electricity, so organization should encourage people to consume this public transportation so that people will reduce the usage of private transport and buses that use gasoline. Then the demand of gasoline will reduce and it's value.
- **Railway Network Structure:** The organization should concern about the railway structure. Terminal station should be where comprehensiveness of catchment area. This thing should be concerned about.

Service characteristics:

We need to see what type of service actually consumers want and the relation between customer satisfaction and the services that organization supposed to provided. The questionnaire divided by three sectors. Those are given below:

- Physical Aspect



Q No.	Dimension	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
11	Women separate coach	2.5%	2.5%	17.5%	32.5%	45%
12	CCTV camera	0	0	0	37.5%	62.5%
15	Escalators	0	0	7.5%	35%	57.5%
16	Senior citizen space	0	2.5%	12.5%	25%	60%
17	Air Conditioning	0	0	17.5%	40%	42.5%

In the above diagram and table, we can see that 2.5% people strongly disagree and disagree about the women separation coach, they don't want any discrimination. But 17.5% people are neutral about this, they don't find any problem about separation or non-detachment and most of the people 32.5% and 45% people are agree and strongly agree respectively about women security and extra respect for their safety issue.

In the question no 12 there was a question about CCTV camera and every person thinks that it should be provided at the station and in the coach also. As the table shows us 37.5% and 62.5% peoples are agreed and disagree respectively.

In the question no 15 people were asked about the demand of Escalators in the station, and almost everyone wants this.

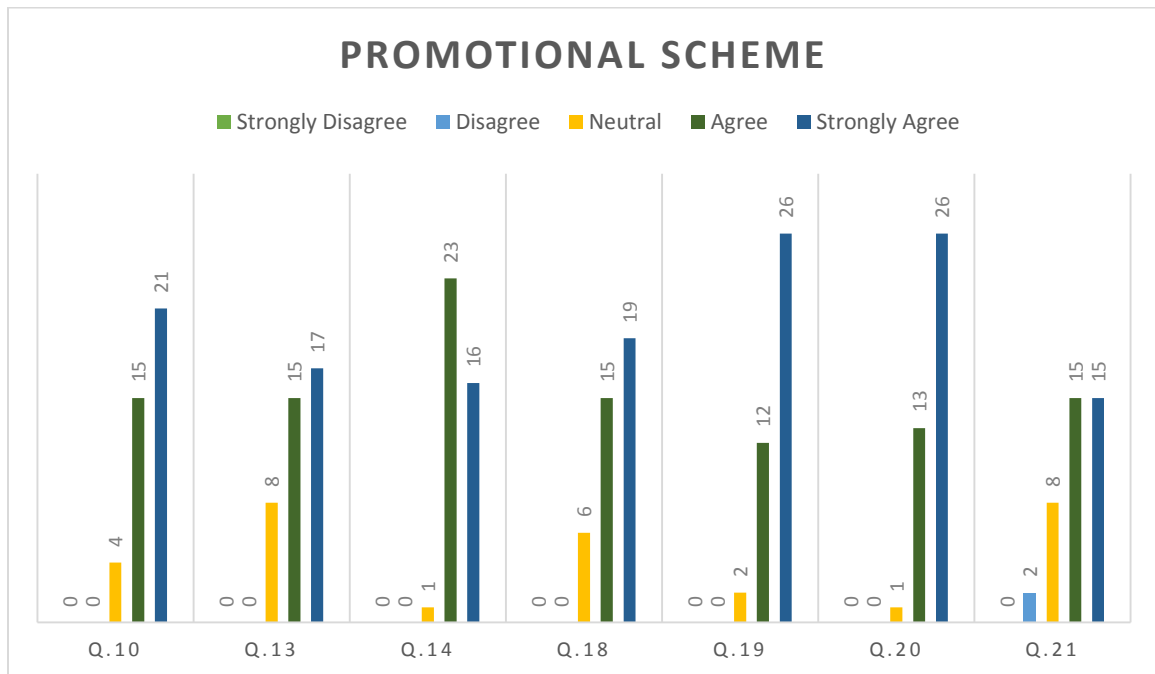
On the next question people were asked about extra space for senior citizen in the metro coach. And 2.5% was not agreed and 85% people want this facility, also, 12.5% people were neutral.

About the air conditioning, no one disagreed about this, 17.5% people were neutral about this facility, and total 82.5% people were agreed with this facility.

The main questions from the physical aspects are given below:

Q.11	Do you think separate coaches for women should available?
Q.12	Do you want CCTV cameras at the stations?
Q.15	Do you think "Escalators" should available at the stations?
Q.16	Do you think, Seats should be reserved for handicapped and senior citizens people in Metro Rail?
Q.17	Do you think, AC in the coaches should effective?

- Promotional Scheme



Q No.	Dimension	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
10	Weekend availability	0	0	10	37.5	52.5
13	Smart card	0	0	20	37.5	42.5
14	ATM booths	0	0	2.5	57.5	40
18	Waiting areas	0	0	15	37.5	47.5
19	Route map display	0	0	5	30	65
20	Delay time information	0	0	2.5	32.5	65
21	Wi-Fi	0	5	20	37.5	37.5

People were asked about the weekend availability and all of them are agreed about this. 37.5% and 52.5% people are agreed and strongly agree respectively.

When they were asked about the smart card facilities, 20% people were neutral about this facility; they think it could be more costly. And another 80% people are agreeing with

this facility. Also, people need ATM booths at the station, 2.5% people are neutral and 57.5% and 40% people are agreed and strongly agree respectively.

15% people are neutral about the waiting area space, other total of 85% people agree about this facility.

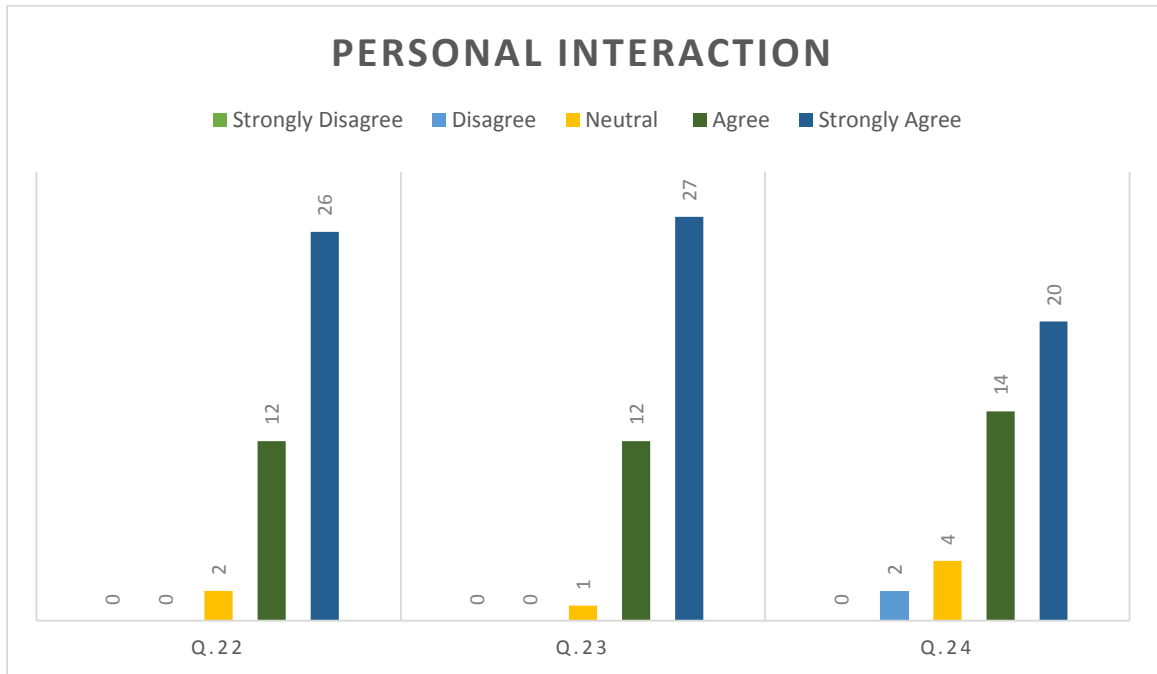
Most of them want the route map display in the metro coach. 5% are neutral, 30% agree and 60% are strongly agreeing about this facility.

People are concerned about the delay time information. Only 2.5% are neutral about this and 97.5% agree about this facility.

5% people don't think it's necessary to have Wi-Fi facility in the coach, 20% people have no problem with this, 75% people want this facility, and mostly they want at the station.

Q.10	Do you think, Metro Rail service should available on weekends?
Q.13	Do you think, Smart card facility should available?
Q.14	Do you think, ATM Booths should available in the stations?
Q.18	Do you think, there should proper sheltered waiting areas?
Q.19	Do you think, Route maps should well displayed at stations?
Q.20	Do you think, Metro Rail Should provide timely information about delays?
Q.21	Do you think, Metro rail should have proper mobile and Wi- Fi network?

- Personal Interaction



Q No.	Dimension	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
22	Both official language announcement	0	0	5%	30%	65%
23	Informative staff	0	0	2.5%	30%	67.5%
24	Lost and found service	0	5%	10%	35%	50%

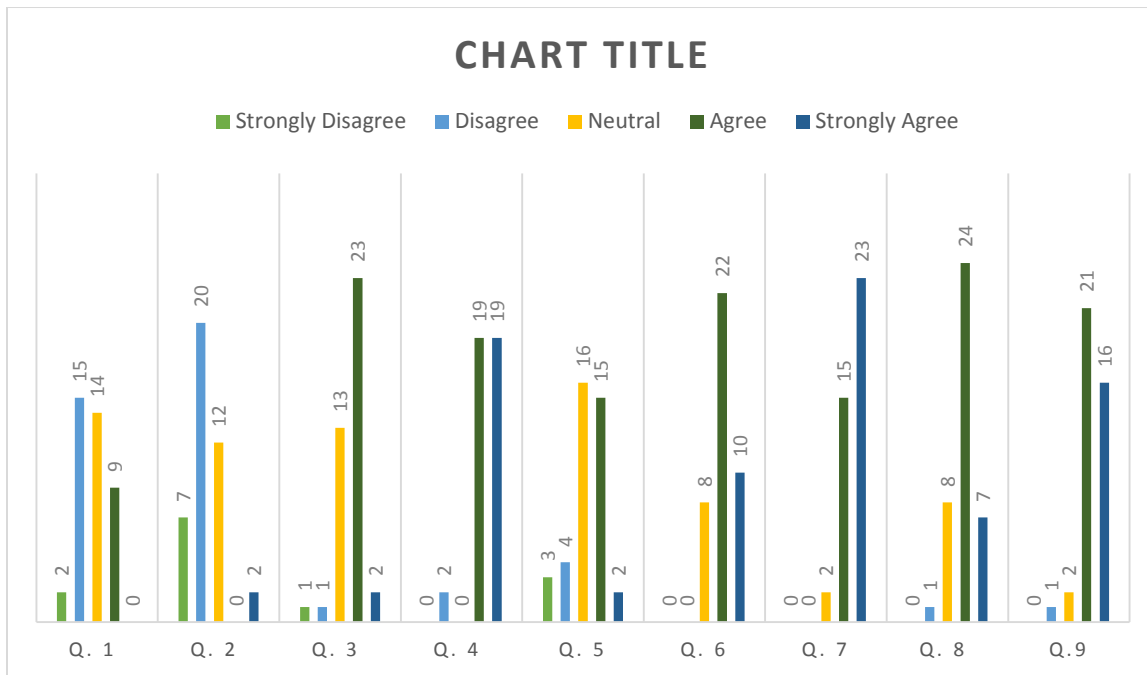
It's a great problem for foreigners to understand our mother language, for that problem people think announcement should be in both official languages. 5% are neutral about this and total of 95% people are agreed.

Informative staff is very important, obviously people want informative staff. As we can see in the chart 67.5% people strongly agree and 30% agree and rest of them is neutral.

5% people don't want the lost and found service, 10% people are neutral, and 35% and 50% people are agreeing and strongly agree respectively.

Q. 22	Do you think, Announcements should be in both official languages?
Q. 23	Do you think, the staff should be informative?
Q. 24	Do you think, Metro Rail should have a good Lost and Found service?

Others:



Q No.	Dimension	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
1	Adequate Bus service	5%	37.5%	35%	22.5%	0
2	Bus availability satisfaction	17.5%	50%	30%	0	5%
3	Metro rail routes	2.5%	2.5%	32.5%	57.5%	5%
4	Metro rail construction make suffer	0	5%	0	47.5%	47.5%

5	Satisfaction with route station	7.5%	10%	40%	37.5%	5%
6	Metro rail will reduce time of journey	0	0	20%	55%	25%
7	Service at night (metro rail)	0	0	5%	37.5%	57.5%
8	Metro rail is economical	0	2.5%	20%	60%	17.5%
9	Economic growth	0	2.5%	5%	52.5%	40%

When people are asked about the bus services, most of them are not satisfied with bus service and the number of buses. 5% are strongly disagreeing, 37.5% people are disagreeing and, 35% people are neutral about bus services and 22.5% person are satisfied with the adequate bus service. About the Metro rail routes, those who live in Dhanmondi, Mohammadpur area they are usually not agreeing with this route, they actually not satisfy. We can see in the chart, 2.5% people strongly disagreeing with the route map and 2.5% are disagree and those who live near the metro rail such as Uttara, Mirpur, Agargaon, Farmgate, Motijheel, they are satisfied with this route, 32.5% are neutral about this and 57.5% people are agreeing with this route and 5% are Strongly agreeing. When people were asking about the sufferings of Metro rail in Dhaka city, 5% people disagree with this because they can sacrifice this for a better movement and rest of 95% people are agreeing that they are suffering a lot for metro rail construction. There will be 16 stations from Uttara to Motijheel, 7.5% and 10% people Strongly disagreeing and disagree respectively. On the other hand, 40% people are neutral about the station, 37.5% agreeing with the station map, and the rest of 5% fully satisfy with the station map.

Moreover, everyone agrees with this statement that metro rail will reduce the journey time, 20% people are neutral about this, 55% people agreeing that it will reduce the journey time and rest of 25% people are strongly agreeing with this statement. Service at night - 5% people are neutral about the night service, but 37.5% and 57.5% people are agreeing and strongly agree with this service respectively. When they are asked about the economy and helping economic growth from metro rail 2.5% people are disagreeing, 20% and 5% people are neutral about this respectively. 60% people think metro rail is economical, they agree, and 17.5% people strongly agree.

52.5% people agree and 40% people strongly agree that metro rail will help the economic growth.

Q. 01	Are there adequate bus services available in Dhaka city?
Q. 02	Are you satisfied with the available bus service?
Q. 03	Are you satisfied with the suggested routes of Metro Rail?
Q. 04	Do you think, Metro Rail construction has added up to the daily sufferings of commuting?
Q. 05	Are you satisfied with the station locations?
Q. 06	Do you think, Metro Rail will help in reducing the overall time of journey?
Q. 06	Do you think, Metro Rail should provide services at night?
Q. 07	Do you think Metro Rail is economical?
Q. 08	Do you believe this project can help our economic growth?

Conclusion: Metro Rail becomes an important role in Dhaka city. For a developing country where traffic congestion becomes a daily suffering thing, metro rail is a great solution for this problem. Also, it helps to the economic growth in a developing country. Government can earn from here, can reduce the journey time of the public which is very important for a better life. Economically, Metro Rail is going to be a highly competitive market in Bangladesh. The demand of metro rail in Dhaka city is very high, also the customer of metro rail wants an easy transport what makes their life easier than before. The organization should concern about the customer as we know customers are the king of the market. They should concern about customer satisfaction, customer demand as well. For a better community system people of Dhaka city are eagerly waiting for Dhaka Metro Rail- The dream of Dhaka city people.

Recommendation:

Metro rail usually makes for a better life of the customer. People of Dhaka city can release from the congestion of traffic. So the Bangladesh government and the organization should concern about the customer satisfaction, to save the time of Dhaka city people, people want air condition,

best security, they also want a separate coach of women and senior citizen, for security they want CCTV camera, smart card facility ATM booths will make their daily life easier and many more. Informing staff and lost and found services must be there in the metro station.

For reduce fuel consumption, the organization should encourage people to use metro rail so that the other public and private transport demand can reduce and also reduce the fuel consumption. Lastly, Dhaka metro rail main slogan is – moving people saving time and environment. So, they should concern about the time schedule so that people can't get any suffering from metro rail.

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