QUALITY OF PUBLIC TRANSPORT SERVICES IN DELHI:
AN ANALYSIS OF COMMUTERS

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I. INTRODUCTION

High levels of economic growth in developing countries concomitant with rapid urbanization and high incomes have led to huge motorisation in these countries. Propelled by rising per capita incomes, aspirations for speedy and comfortable travel have resulted in a phenomenal increase in personalized vehicles. A study by The Energy and Resources Institute (TERI) has shown that when per capita income grows by 1 per cent, the level of car ownership grows by 1.7 per cent (TERI, 2006)\(^1\). In China, doubling of per capita incomes has led to trebling of car usage (Kutzbach, 2010). The tremendous growth of personalized vehicles, primarily consisting of cars and two-wheelers in India may be judged from the fact that while personalized modes accounted for a little over three-fifths of the total motor vehicle population in 1951, by the year 2008-09, these accounted for more than four-fifths of the motor vehicle population in the country. In contrast to personalized modes, the share of buses in total registered vehicles declined from 11.1 per cent in 1951 to a mere 1.3 per cent in 2009. Also, the share of goods vehicles at 5.3 per cent has shrunk since 1951 (Ministry of Road Transport and Highways (MORTH), 2011)\(^2\)

Growth of personalized vehicles has primarily been city-centric. While in India, the average level of car ownership is still low at 13 per 1000 population but in cities like Delhi, Mumbai, Chennai and Coimbatore, the average level of car ownership is well beyond 100 per 1000 population (Sundar and Ghate, 2013). The way modern urban sprawls have developed with business clusters spread over wide areas, also explains the proclivity of these urban agglomerations on multimodal nodes and huge reliance on personalized automobile networks.

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\(^1\) “Energy Efficiency and Climate Change Consideration for On-road Transportation in India”, TERI Report No 2005UG27, The Energy and Resources Institute, New Delhi.

As a general rule, the increase of personalized vehicles and the varied mix of traffic modes in cities from large buses to cars to para-transit modes like autos as well as non-motorized vehicles have increased traffic congestion to threatening levels in cities across the developing world. Proliferation of personalized vehicles also has serious implications on energy efficiency, pollution and health. Individual means of transport have high energy consumption per person as compared to public transport and their proliferation is responsible to a fair degree for the alarming rise of air pollution levels and subsequent rise of cardio vascular diseases throughout the world.

Energy efficiency in transport can be increased tremendously by shifting passengers from individual to public and non-motorized means of transport. The cheapest and the most promising means to do that is through improvement of energy efficiency, either by technical improvements or by modern urban planning approaches (Abmann and Seiber, 2005). Planners and Governments in many developing countries have begun responding to urban transport planning measures to achieve this objective. Recent measures of introducing bus rapid transit in various cities³ of Asia and Africa or popularization of the mass rapid transit systems like the metro rail in Delhi or the environment friendly highly successful non motorized modes to carry freight in rural areas in Bangladesh may be seen as positive interventions.

But attracting present and potential car users to using public transport or retaining present users to public transport is a complex task. As is well known, in most of the developing countries, middle to low income commuters rely on public transport, or more appropriately on bus systems (Kutzbach, 2010). But the speed of motorization and increase of cars or other personalized vehicles like two wheelers on the roads are leading to more traffic congestion, more travel time for bus commuters, as big buses are difficult to manoeuvre through busy roads often adding to more commuting woes. As incomes rise and cities grow, commuters in developing countries switch from walking or bicycling to public transportation to personalized vehicles; particularly the middle class tends to use personalized vehicles in order to save valuable time and have a relatively comfortable daily travel. So commuters who switch to cars

³ The BRT pioneered in Curitiba, Brazil in the 1970’s is a highly successful one where by restricting some lanes to bus travel and investing heavily on bus supportive infrastructure a bulk of the middle class still prefer commuting by bus even though per capita incomes have risen and value of time has increased (Mark Kutzbach, 2010)
or two-wheelers again contribute to reducing efficiency of public transport systems. The whole system eventually hits a logjam - the bus system becomes more time and cost inefficient, results in further degradation of service, more waiting time, less frequency, more crowding and eventually more discomfort. This further leads to even fewer people being encouraged to use public transport - more personalized vehicles and even more inefficient transport systems creating a negative spiralling effect of a vicious cycle.

On the other hand, attracting existing users of personalized vehicles to using public transport systems is ever more arduous, though bus systems are more energy efficient, cars are far more comfortable. It is in this context that the question of service quality and commuter’s perception of satisfaction from public transport use becomes critically important.

Evidences show that as public transport systems grow older and matured, the quality of service dwindles down with public being left with no option but to accept what is offered (Andreassen, 1994). In this situation, the element of improving quality of services to commuters may be induced to provide a new lease of life to the system. If the perceived service falls below the expected service, customers are dissatisfied and if the perceived service quality is above the expected level, it creates satisfied customers (Andreassen, 1995). Perceived quality of services not only depends on technical quality aspects but to a great extent on cost and time, perceived functional and symbolic aspects like punctuality, route coverage, frequency and comfort level, safety and so on.

Introducing accountability in managing public transportation with primary focus on service quality may act as a powerful way for driving service providers to perform better and eventually may be instrumental in attracting commuters to using public transport.

This paper attempts to investigate the factors that influence commuters’ perception of service quality of public transport in Delhi - comprising of buses and metro rail. Service quality perception have been analysed for different segments distributed by age, ‘occupation and activity’ and gender, to bring out differences if any, that may exist between these segments. Addressing the perceived service quality concerns of people can go a long way towards furthering much desired goal of increasing public transport usage among commuters in Delhi.
Rest of the paper is organized in the following manner

- Background of the city of Delhi
- Transport system in Delhi
- Commuters’ perception - Approach and Methodology
- Results and Analysis
- Concluding Remarks

2. BACKGROUND OF THE CITY

Delhi, the capital city of India has a huge population of 17 million (Census 2011) and the decadal growth rate of population has been around 21 per cent since the last Census in 2001. It comprises around 1.4 per cent of the total share of all India population. Delhi has an area of around 1483 sq. kms of which around 75 per cent of the total area is urban. The urban area in Delhi has increased by 12 per cent since 2001. The national capital is a hub of economic activity and a major share of the economy is driven by the service sector, which contributes more than 80 per cent of the State’s GSDP. Delhi’s per capita income has been more than double of the national average since the last 6 to 8 years both at constant and current prices.

The rapid trend of urbanization coupled with a rise in economic activities and personal income have set in motion a massive upsurge in transport demand and number of vehicles in Delhi. Vehicular population of Delhi has been growing at the annual rate of around 7 per cent between 1999-00 and 2011-12. Registered vehicles number more than 7 million in Delhi which is higher than the combined vehicular population of the other three metropolitan cities of Chennai, Kolkata and Mumbai. A bulk of the transport demand in Delhi has translated into rising use of personalized vehicles comprising more than 90 per cent of the total vehicular fleet.

3. TRANSPORT SYSTEM IN DELHI

The transport network in Delhi is still predominantly road based and railways (excluding the metro) cater to only around 1 per cent of the total traffic demand. As on 31st March 2012, there were about 7.4 million registered vehicles in Delhi as compared to around 6 million in

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4 Economic Survey of Delhi 2012-13
5 Delhi Statistical Handbook 2012. Some experts feel that this number is on the higher side since it may include vehicles registered some time ago but no longer being used on the roads, according to Mr D. Mohan, speaker at the Stakeholders’ Consultation organized by IHD on 8th July, 2013 at New Delhi.
6 12th Five Year Plan (2012-17) & Annual Plan (2012-13): Delhi
2008-09. Within a span of 3 years, 1.4 million vehicles have been added to Delhi’s vehicular fleet.

The public transport system in Delhi consists of buses and Delhi Metro. Bus services in Delhi mainly comprises Delhi Transport Corporation (DTC) run buses. DTC is the largest public transport entity in the NCR transporting about 45 lakh passengers and covering 10 lakh kms per day. Of late, the issue of inadequate number of DTC buses in relation to demand and prolonged waiting time for buses in several less frequent routes is turning out to be worrisome for the citizens. A smaller part of the bus system comprises Delhi Metro Rail Corporation (DMRC) run feeder buses and buses run by Private Stage Carriage operators (PSCs). PSCs in Delhi are operated by individual operators which run on a few routes. The PSC scheme includes chartered buses mainly availed by office goers and the much maligned blue line buses whose operation has been recently stopped owing to various incidents of unsafe driving and crime. In the rural areas of Delhi, the public transport demand is partially met by the recently introduced Grameen Sewa vehicles.

The Delhi Metro, a part of the Mass Rapid Transport System (MRTS), was introduced in Delhi in 2002 as an alternative means of providing safe, non-polluting and expeditious travel within the city. The metro has expanded its network over the years and spans a length of more than 210 kms presently. The metro has expanded in phases through dedicated routes viz., Yellow, Blue, Green, Violet and Airport lines and has made commuting easier not only within Delhi but to other adjoining areas in the NCR as well. The Delhi metro aims to meet the travel needs of the entire NCR region eventually. Average number of daily passengers in the metro has reportedly increased from 45,000 in 2003 to 2 million in 2013 and on festive occasions and special days, metro ridership shoots up even higher than usual days.

3.1 Transport Composition and Growth

Two wheelers (2W) dominate the vehicular population of Delhi comprising more than 60 per cent of the total vehicular population followed by cars and jeeps which comprise more than 30 per cent of the total share. Together the share of cars and 2W today stands at more than 90 per cent of the total vehicular fleet, bulk of which are personalized vehicles. The annual growth rate was highest for taxis (20 per cent), followed by goods vehicles (9.3 per cent), cars and jeeps (8
per cent) and two-wheelers 5 per cent). The growth rate of buses, on the other hand, is among the lowest at 5 per cent annually (See Table 1).

**Table 1: Registered Motor Vehicles in Delhi**

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>CAGR (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars and Jeeps</td>
<td>1859370</td>
<td>2173323</td>
<td>2173323</td>
<td>2343113</td>
<td>8.0</td>
</tr>
<tr>
<td>Proportion of total share (per cent)</td>
<td>30.93</td>
<td>32.87</td>
<td>31.35</td>
<td>31.50</td>
<td></td>
</tr>
<tr>
<td>2 W (Motorcycles &amp; Scooters)</td>
<td>3797943</td>
<td>4055229</td>
<td>4342403</td>
<td>4644146</td>
<td>6.9</td>
</tr>
<tr>
<td>Proportion of total share (per cent)</td>
<td>63.18</td>
<td>61.34</td>
<td>62.64</td>
<td>62.44</td>
<td></td>
</tr>
<tr>
<td>Auto Rickshaws</td>
<td>83948</td>
<td>86482</td>
<td>88181</td>
<td>88197</td>
<td>1.7</td>
</tr>
<tr>
<td>Proportion of total share (per cent)</td>
<td>1.40</td>
<td>1.31</td>
<td>1.27</td>
<td>1.19</td>
<td></td>
</tr>
<tr>
<td>Taxis</td>
<td>40072</td>
<td>45240</td>
<td>57958</td>
<td>69780</td>
<td>20.3</td>
</tr>
<tr>
<td>Proportion of total share (per cent)</td>
<td>0.67</td>
<td>0.68</td>
<td>0.84</td>
<td>0.94</td>
<td></td>
</tr>
<tr>
<td>Buses</td>
<td>55148</td>
<td>58047</td>
<td>61471</td>
<td>64033</td>
<td>5.1</td>
</tr>
<tr>
<td>Proportion of total share (per cent)</td>
<td>0.92</td>
<td>0.88</td>
<td>0.89</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>Goods Vehicles etc</td>
<td>175250</td>
<td>193205</td>
<td>209370</td>
<td>228886</td>
<td>9.3</td>
</tr>
<tr>
<td>Proportion of total share (per cent)</td>
<td>2.92</td>
<td>2.92</td>
<td>3.02</td>
<td>3.08</td>
<td></td>
</tr>
<tr>
<td>Total number of vehicles</td>
<td>6011731</td>
<td>6611526</td>
<td>6932706</td>
<td>7438155</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Source: Delhi Statistical Handbook 2012

This speaks of the over-reliance on personalized vehicles and as common behaviour of cities across the world, in Delhi too, we see an indication of a shift from two-wheelers to cars. Rising per capita incomes, easy financing options and availability of small, low priced cars adds fuel to this. In fact, according to RITES Delhi Traffic and Forecast Study 2008, personalized vehicles (consisting of cars and 2W) catered to over 40 per cent of passenger trips and are likely to increase in future. The City Development Plan (CDP) of Delhi put the share of public transport to 60 per cent of the total trips in 2006 of which 15 per cent comprised the metro.

The assorted mix of traffic in Delhi’s roads consisting of buses, two wheelers, cars, autos and non-motorized transport makes a pretty muddled picture especially in the peak hours of morning and evening. The sea of vehicles plonked at traffic intersections are a commuter’s nightmare. In most of the major roads, the travel speed is just around 30 kmph. The result of this high traffic congestion is delay, accidents, air pollution and related health risks and adds to overall discomfort of commuters. Of course, the Delhi metro provides some respite to commuters who would have otherwise commuted by road, but it is hardly adequate to meet the
ever increasing travel demand of the growing population. Moreover, the dangers of over dependence on the metro could spawn a whole new array of complexities.

Efficient transport management requires optimum use of public transport. Among other things, one of the easiest means of attracting people to using public transport is to improve its service quality. The next section tries to unearth the perception of various segments of commuters regarding bus and metro commuting experiences in Delhi.

4. COMMUTERS’ PERCEPTION – APPROACH AND METHODOLOGY

Data on commuters’ travel pattern and perception about public transport services in Delhi were collected through a primary survey conducted across 8029 households across Delhi. This was a part of a larger survey conducted to collect information on various aspects of human development in Delhi including access to basic services, civic amenities, health, education and other demographic particulars for the Delhi Human Development Report 2013. The age of respondents was 15 years and above and responses were collected by administering a structured questionnaire.

The geographical coverage of the survey included the entire state of Delhi covering all nine districts. Sampling was done independently in all districts. A three stage stratified sample design was adopted in the survey to generate representative samples. Census urban wards, Census Enumeration Blocks (CEBs) and individuals aged 15 years and above formed the first, second and third stage of stratification respectively. In the third stage, all eligible individuals (aged 15 years and above) covering about 100 households were listed in each CEBs and all listed individuals were then stratified by sex, age and education parameters. Two individuals from each effective stratum were selected randomly.

For the present analysis, responses of individuals regarding their most commonly used mode of travel and perception of service quality of public transport with regard to buses and metro have been analysed. To understand the dynamics of commuting pattern, the responses have been analysed primarily by age groups and ‘occupation & activity’; wherever important differences in perception are visible based on gender, have been highlighted.

The age groups are categorized as 15-29 years, 30-45 years, 46-60 years and above 60.
As studies show that choice of commuting modes to a large extent depends on economic/income status, one of the variables for the analysis is occupation which may be seen as a proxy of income or economic status. The occupational groups here are based on the Indian National Classification of Occupations (NCO) 2004 which include:

Legislators, senior officials, managers and professionals - henceforth categorized as ‘Professionals’

Technicians and Associate Professionals and clerks henceforth categorized as ‘Semi professionals’

Service workers, shops and market sales workers henceforth categorized as ‘Service Workers’

Craft and Related Trades workers, plant and machine operators and Assemblers categorized as ‘Skilled low paid workers’

Elementary Occupations and Workers not classified by occupations categorized as ‘Unskilled low paid workers’

Apart from the listed occupational categories, two other categories based on activity status ‘Students’ and ‘Other’ (Unpaid housework, Unemployed, retired, pensioner) were added to the list of commuters. Those who did not commute were left out from the analysis.

5. RESULTS AND ANALYSIS

In a city like Delhi, multi-modal travel is fairly common where people are constantly switching from one commuting mode to another for their daily activities- work and education purposes.

Figure 1: Overall Share of Commuting Modes in Delhi
For Delhites, public transport services comprising of buses (37 per cent) and metro (22 per cent) constitute the largest share of their daily commuting routine followed by autos (10 per cent). About 13 per cent comprised of travel by personalized vehicles (own car and two-wheelers). Among non-motorized modes, walking constitutes a fairly common practice of daily travel habits and comprised about 12 per cent of the daily commuting share (See Fig. 1).

**Figure 2: Share of Commuting Modes by Age-groups**

![Graph showing share of commuting modes by age-groups](image)

It may be observed that for the younger age groups ‘15-29’ and ‘30-45’, the share of bus travel is the same as the average of 37 per cent. But for the older age groups: ‘45-60’ and ‘60 and above’, the commuting share by buses is marginally lower than 37 per cent. Metro use is also maximum among the youngest age-group of 15-29 at 23 per cent while for all others, the commuting share is marginally less than the average value of 22 per cent. That the share of public transport use is relatively less among older age groups can be partly explained by the fact that their use of personalized vehicles is higher than that of the age group 15-29. While only 11 per cent among 15-29 age group use their own vehicles, among all the other age groups, the share is higher than the average of 13 per cent. This young age-group of 15-29 years comprises a large chunk of students and people who are newly inducted to the work force. With increase in income, as a general rule, many people in this group would tend towards using personalized vehicles in the near future.

Travel in intermediate modes like autos form a reasonable percentage of the commuting routine of Delhites. The daily average share of travel by auto is 10 per cent indicating that intermediate
modes like autos tap the travel demand gap to a large extent, which is not covered by public transport. When analysed by age groups, the share of auto use is found to be marginally short of 10 per cent for all the three age groups 15-29, 30-45 and 46-60 and it is reportedly 12 per cent among the eldest age group 46-60. Autos provide relatively faster and comfortable mode of travel which can be used at one’s own discretion.

**Figure 3: Share of Commuting Modes by ‘Occupation and Activity’**

![Figure 3: Share of Commuting Modes by ‘Occupation and Activity’](image)

When analysed by occupation and activity, we find perceptible differences with respect to commuting pattern among some categories - the most remarkable disparity being between the two categories termed as ‘professionals’ and ‘unskilled low paid workers’ which sort of implicates the lifestyle differences between the affluent and vulnerable sections of society. Bus use is the highest among unskilled low paid workers with its share being 43 per cent out of all commuting modes and as compared to all other categories. On the other hand, metro use among this group is relatively small comprising 17 per cent of the total share. Personalized vehicle use is also the lowest among this category with a negligible 0.8 per cent availing own car and 4.5 per cent availing two wheelers. Habit of walking at 12 per cent is highest among this group. If we compare this with the commuting pattern of the highest socio-economic category of professionals, we find that bus use is much lower at 26 per cent while metro use is relatively higher at 28 per cent. As compared to all other categories, the use of personalized vehicles is the
highest for this category at 32 per cent - car share 15 per cent and two-wheeler share 17 per cent. For the other occupational categories- semi professionals, service works and skilled low paid workers, it may be seen that as one moves up the socio-economic ladder, bus use increases and metro use decreases. The pattern is just the reverse for personalized vehicles.

Among students bus use is same as the average share of 37 per cent while metro use is slightly higher at 25 per cent. For the ‘others’ category, bus use is the same as the average but metro use at 20 per cent is relatively lower than the average.

5.1 Perception of People about Public Transport

Perception about service quality of public transport in Delhi was assessed from users’ response to what they liked and disliked about public transport- buses and metro

5.1.1. Users’ Perception about Bus Service

Affordability, coverage and safety emerge as the three top most attributes that people reported they liked about bus services in Delhi. These three attributes comprised around 70 per cent of the responses. For buses, the choice of the three top attributes remains the same for all age groups and all ‘occupation & activity’ categories except the occupational category of professionals. Among professionals, the choice of first two attributes remain the same but the third choice of attribute was that ‘buses have good frequency’ (13.5 per cent). In fact, the fourth choice was safety (11.3 per cent) for professionals. If we recall, 26 per cent of professionals are bus users (Figure 3) which is the least as compared to bus users of all other occupational categories and survey data also reveals that the largest number of professionals (35 per cent) are concentrated in south district. Perhaps we may infer that buses have relatively better frequency in south district, at least in some parts of the district, although we do not have sufficient evidence to say so conclusively.

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<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
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<tbody>
<tr>
<td>Affordability</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Coverage</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Safety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Users (per cent)</td>
<td>32.3</td>
<td>24.8</td>
<td>14.0</td>
</tr>
<tr>
<td>Male (per cent)</td>
<td>32.4</td>
<td>25.0</td>
<td>13.9</td>
</tr>
<tr>
<td>Female (per cent)</td>
<td>32.2</td>
<td>24.5</td>
<td>14.3</td>
</tr>
</tbody>
</table>
The top three reasons which people disliked about buses are overcrowding (32 per cent), no direct bus (18 per cent) and buses are time consuming (11 per cent). From Table 3 it may be seen that for females, indecent behaviour of bus conductors/drivers and co-passengers was the third most important reason of disliking bus rides while for males, longer travel time was more bothersome. It may be noted that while on the one hand women found buses safe to travel, they did not see any link between the indecent behaviour of drivers/conductors and their safety considerations which is a paradox.

**Table 3: What People Like about Buses**

<table>
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<th>II</th>
<th>III</th>
<th>IV</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Overcrowding</td>
<td>No Direct bus</td>
<td>Time Consuming</td>
<td>Indecent behavior of bus conductors/drivers and co-passengers</td>
</tr>
<tr>
<td>All Users (per cent)</td>
<td>31.8</td>
<td>18.3</td>
<td>11.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Males (per cent)</td>
<td>31.5</td>
<td>18.2</td>
<td>11.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Females (per cent)</td>
<td>32.2</td>
<td>18.4</td>
<td>10.4</td>
<td>10.7</td>
</tr>
</tbody>
</table>

For the third attribute where there is a difference between opinion of males and females, close examination of the data reveal that women between the ages 15-60 reported indecent behaviour of bus conductors/drivers and co-passengers as the third most important reason of dislike about buses but in the age group above 60 years, akin to the general pattern, women reported ‘more time consumption by buses’ as the third most important reason of dislike.

Disaggregating by ‘occupation and activity’ yields further interesting results. Women in the three categories viz., ‘Unskilled low paid workers, Students and ‘Others’ reported indecent behaviour of bus conductors/drivers and co-passengers as the third most important reason of dislike about buses but for all other categories of professionals, semi professionals, service workers and skilled low paid workers, women reported more time consumption by buses as the third reason.

Interestingly, among service workers, males reported indecent behavior of bus conductors/drivers and co-passengers as the third most important reason of dislike about buses although females in that category did not.
5.1.2 Users’ perception About Metro Service

Table 4: What People Like about Metro

<table>
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<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clean</td>
<td>Comfortable</td>
<td>Women’s Compartment</td>
<td>Safe</td>
</tr>
<tr>
<td>All Users (per cent)</td>
<td>19.6</td>
<td>16.4</td>
<td>12.7</td>
<td>11.5</td>
</tr>
<tr>
<td>Males (per cent)</td>
<td>20.0</td>
<td>16.2</td>
<td>10.3</td>
<td>12.2</td>
</tr>
<tr>
<td>Females (per cent)</td>
<td>19.0</td>
<td>16.8</td>
<td>16.4</td>
<td>10.6</td>
</tr>
</tbody>
</table>

The top three attributes that people like about Delhi metro are that metros are clean, comfortable and metros have women’s compartment. While males and females are unanimous in stating their opinion about the first two attributes, they are divided about the third. A high percentage of females (16.4 per cent) ranked ‘Women’s Compartment’ in metros as their third choice while the third choice for males (12.2 per cent) was that metros are safe. For all age groups, as well as for all ‘occupation & activity’ the same disagreement exists between males and females with regard to the third service quality attribute. Of course, it must be considered that connection between safety and women’s compartment runs deep.

Table 5 What People Dislike about Metro

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overcrowding</td>
<td>No direct metro</td>
<td>Toilets not available at all stations</td>
</tr>
<tr>
<td>All Users (per cent)</td>
<td>32.8</td>
<td>26.3</td>
<td>15.9</td>
</tr>
<tr>
<td>Males (per cent)</td>
<td>33.0</td>
<td>26.7</td>
<td>16.0</td>
</tr>
<tr>
<td>Females (per cent)</td>
<td>32.3</td>
<td>25.7</td>
<td>15.8</td>
</tr>
</tbody>
</table>

Like bus users, metro users also pointed out that overcrowding (33 per cent) is the most important factor that they disliked about metro services. The second and third factors unfavourable to metro services are unavailability of direct metro facilities (26 per cent) to various locations and lack of toilets in all metro stations (16 per cent) in that order. A fourth factor that a reasonable percentage complained about metro services is expensive metro fares (12.4 per cent). Survey data reveals that the response under this category ‘metro fares are expensive’ is highest for skilled (14.5 per cent) and unskilled (14.6 per cent) low paid workers. For service workers too, the response per cent for the fourth factor at 13 per cent is higher than the average.
An important observation of the analysis is that bus users appear to be more concerned with cost and time and functional aspects of service quality like affordability, coverage, speed, convenience etc while metro users’ perception has to do more with the symbolic aspects of service quality like cleanliness, comfort, safety issues etc although ‘overcrowding’ a functional aspect of service quality is a major reason for dislike for both bus and metro commuters. Studies have shown that bad image of symbolic attributes tend to reduce the usage potential of car users while public transport users have positive relationship with symbolic as well as functional attributes. While time dimension is a major cause of concern for car users, cost along with time is important for general public transport users (Javid et al, 2013).

6. CONCLUSION

Since the analysis show that buses serve a relatively much higher percentage of the population at the lower socio-economic strata, it is imperative that functional and time and cost dimensions of service quality of public transport be zealously improved to serve the masses better.

The major points of dislike for both buses and metro is overcrowding which clearly indicates that travel demand exceeds the supply of services. Serious efforts should be made to bridge this gap in order to attract more people to using public transport.

Along with time and cost and functional aspects, symbolic aspects like comfort, safety, crew behaviour need also be given serious attention to make public transport experience better.

To sum up, only a holistic approach to improving all the three aspects of service quality can be the first step towards attracting more people to public transport and can help lure away potential and at least a part of existing personalized vehicle users to public transport.
References


