

Analysis of Urban Transport in Peshawar for User-Friendliness



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Abstract: This survey-based study was aimed to examine and evaluate the level of accessibility and security at the BRT stations in Peshawar. The study focused on female passengers of all ages. Only three stations were selected for the study, and the number of respondents at each station was kept up to 50. A questionnaire comprised of only eight questions was designed for this purpose. Respondents had three choices in their responses. Data obtained through the questionnaire revealed that a majority of the respondents were satisfied with the arrangements made at all three stations, although there was a clear difference between the figures obtained at different stations. The study suggests additional provisions at elevated and underground stations for disabled women.

Key Words: Urban Transport, Peshawar, BRT

Introduction

According to a recent study (Maggi & Vallino), more than 60% of the population in the European Union lives in urban areas where 75% mileage of a car is in and around cities. The movement of people and goods is one of the primary concerns in contemporary metropolitan cities. In fact, an efficient, reliable and environment-friendly urban transportation system makes a city livable for people. Developed countries spend 3-5% of their GDP on public transport systems, whereas countries like China has spent 1% of their GDP on urban transportation in 2006 (Li, Liu, Liu, & Gao, 2015).

Excessive use of automobiles and its adverse impact on social, economic and environmental aspects of urban life has been one of the major concerns of contemporary urban planners and policymakers (Haghshenas, Vaziri, & Gholamialam, 2015). Different techniques have been introduced by various states throughout the world to reduce dependency on private cars. These techniques include mass transit systems (including bus rapid and rail rapid transits), elevated expressways, carpooling techniques and shared mobility (Murr & Phillips, 2016).

In Pakistan, rapid transit systems have recently been introduced in some of the major cities, including Rawalpindi-Islamabad, Lahore, Multan and Peshawar (Haider et al., 2021). The focus is to provide respectable, affordable and secure mobility to the residents of these cities. Peshawar being the capital city of Khyber Pakhtunkhwa has its own cultural values associated with the traditional lifestyles of Pakhtoons. A safe and secure urban transport system, especially for women, has remained a major concern of the people as well as the provincial governments for decades.

Objective of the Study

The major objective of the study was to examine and evaluate the Bus Rapid Transit system of Peshawar for user-friendliness with a special focus on women.

Research Methodology

This was primarily a survey-based study in which a questionnaire was served on the participants to know their response on the workability aspects of the Bus

Rapid Transit system of Peshawar. There were two major focuses of the questionnaire:

- i. Accessibility
- ii. Security

Terminals selected for inclusion in the research consisted of:

- i. Gulbahar Square
- ii. KTH University of Peshawar
- iii. Hayatabad Phase III

Fifty female respondents at each terminal were served with the questionnaire, and brief interviews were also conducted with them to validate their responses. A team of six Masters students from the National Institute of Urban Infrastructure Planning (NIUIP) was appointed to assist the researchers in the survey.

Conceptual and Theoretical Background

This section presents a brief description of the Bus Rapid Transit system of Peshawar after giving a theoretical insight into a few aspects of mass transit systems.

Efficacy and Practicality of Urban Transport System

Many cities of the world are growing faster than the increase in their population, so people have to travel farther within a city for the performance of their routine jobs (DeWeerd, 2016). The form of a city and technological advancements have always affected the mode, scale and design of urban transportation systems. Scholars (Mäkinen, Kivimaa, & Helminen, 2015) have presented a few key factors which govern the overall pattern of the transportation system in a city. The worth-mentioning among these are:

- a. Path dependence, path creation and path destabilization as transition concepts
- b. Development of and path dependence in urban form and transport

Almost all the theorists hold that policies governing urban transport and movement patterns actually reshape the entire form of the city. In this regard, a very strong example may be Helsinki city in Finland, where state policies on road pricing, parking, public transport and encouraging bicycling have played a tremendous role in controlling the overall form of the city (Mäkinen et al., 2015).

Efficient transportation systems like BRT in

Bogota encourage a certain level of physical activity in its users, reducing the risks of deaths associated with physical inactivity exacting a toll of 5.3 million human lives per year (Lemoine et al., 2016).

Security in Urban Transit System

According to Newton and Ceccato (2015), the urban transportation system can be compared with the crime pattern theory, which presents three key concepts, nodes, paths and edges. Bus stops, terminals and interchanges fall in the category of nodes, pathways connecting these nodes can be termed as paths, and the boundaries of a transport system where a different environment meets with the transport system formulate the edges. Users may be possible offenders and targets of crimes.

Routine activity theory, when combined with the crime pattern theory, may help the patrons of the urban transport system to foresee, prevent and mitigate crimes by installing devices like CCTVs etc., making mass transit more secure and reliable for users (Newton & Ceccato, 2015).

Subsidizing the Public Transport

As a matter of fact, mass transit systems worldwide operate on subsidies from the governments. 25% of metro-operating expenditures are even not funded by the farebox income. However, recent experiences reveal that dependency on subsidies can be reduced by generating income by utilizing the potential of urban transportation systems. Techniques include using buses and stations for advertising which proved to be successful in Mexico City and Madrid. Similarly, leasing commercial spaces by the Sao Paulo metros at as lower the market rates as 65% helped in reducing the state's share in operating costs. Selling out naming rights was a successful experience in the case of Dubai and Mumbai. Dubai's transit authority covered 65% of the operating cost from revenues generated through naming rights. Merchandising, as well as consulting services and technology sales, are other similar techniques to generate huge revenues for the smooth functioning of urban mass transit systems (Pulido & Portabales, 2015).

Planners' concerns have recently shifted towards shared goods and passengers on-demand rapid transit systems in the cities. Both the systems, though, have different objectives and constraints; however, the technique may reduce loads on urban economies by efficient utilization of the existing systems as both

travel on the same network (Fatnassi, Chaouachi, & Klibi, 2015).

Bus Rapid Transit (BRT) Peshawar

Initiated to facilitate the customers by providing high-quality, fast, safe and economic intra-city mobility (Dastagir, Khan, Shahid, Mir, & Faheem), the Bus Rapid Transit (BRT) project of Peshawar is situated in

the Zone-2B of the Building Code of Pakistan Seismic Provisions (2007) (MEHDI, 2018). The project was intended to replace the existing private mini-bus oriented transport system on the main transit route of Peshawar city. The major route of the BRT starts from Chamkani and terminates at Hayatabad. The total length of this route is 25.8 kilometres, and the number of stations is 31 (figure 1).

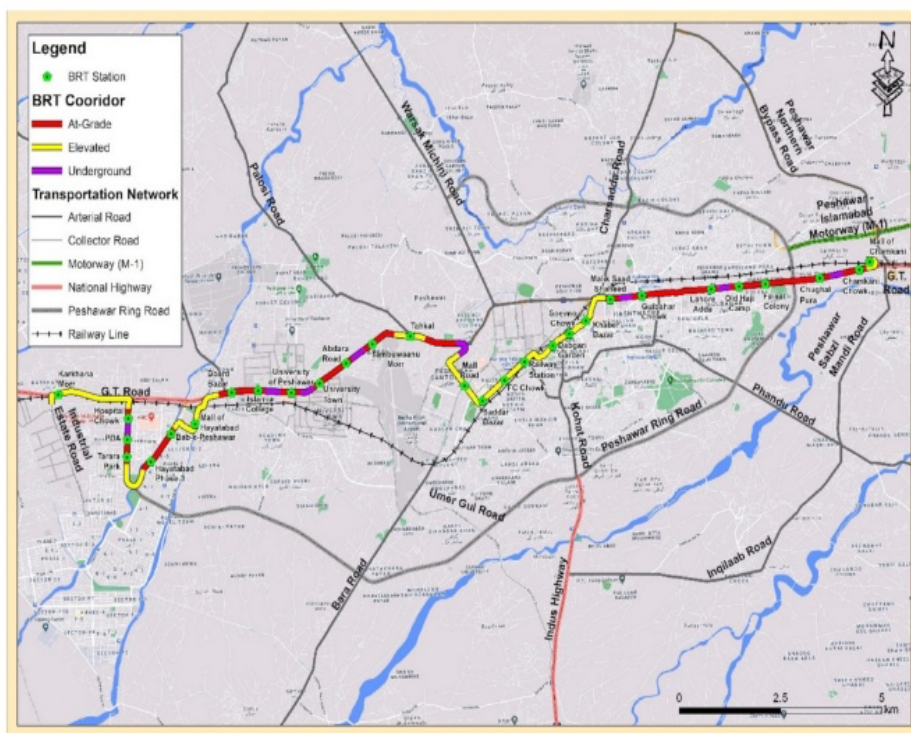


Figure 1: Route and Stations of Bus Rapid Transit (BRT) Peshawar

Source: (Haider, Khan, Ilyas, & Khan, 2021)

Findings

Responses coming from the participants of the survey were tabulated, and percentages were calculated for presentation. Four aspects of each objective, i.e.

accessibility and security, were addressed in the questionnaire. The data obtained from the questionnaires is tabulated hereunder:

Table 1. Is the Station Accessible for Pedestrians from Catchment Areas?

Station	Response	Number	Percent
Gulbahar Square	Yes	41	82.00
	No	7	14.00
	Not Clear	2	4.00
	Yes	39	78.00

Station	Response	Number	Percent
KTH University of Peshawar	No	8	16.00
	Not Clear	3	6.00
	Yes	41	82.00
Hayatabad Phase III	No	9	18.00
	Not Clear	0	0.00
	Yes	121	80.67
Cumulative Response	No	24	16.00
	Not Clear	5	3.33

As it is clear from the table above that a majority of respondents, i.e. 80.67%, were satisfied with the location of the terminal. However, 18% of respondents in Hayatabad were of the opinion that the BRT terminals were not easily accessible for women.

Table 2. Is the Station Accessible for Women Carrying Babies and Children?

Station	Response	Number	Percent
Gulbahar Square	Yes	38	76.00
	No	11	22.00
	Not Clear	1	2.00
KTH University of Peshawar	Yes	33	66.00
	No	13	26.00
	Not Clear	4	8.00
Hayatabad Phase III	Yes	37	74.00
	No	8	16.00
	Not Clear	5	10.00
Cumulative Response	Yes	108	72.00
	No	32	21.33
	Not Clear	10	6.67

Table 2 above shows that 21.33% of the respondents were of the opinion that BRT stations are not easily accessible for women carrying babies and children. 72% expressed their satisfaction, although the percentage of satisfied respondents was only 66% in the case of KTH University of Peshawar BRT station.

Table 3. Is the Station Accessible for Women Carrying Luggage or Groceries?

Station	Response	Number	Percent
Gulbahar Square	Yes	42	84.00
	No	8	16.00
	Not Clear	0	0.00
KTH University of Peshawar	Yes	39	78.00
	No	5	10.00
	Not Clear	6	12.00
Hayatabad Phase III	Yes	38	76.00
	No	8	16.00
	Not Clear	4	8.00
Cumulative Response	Yes	119	79.33
	No	21	14.00
	Not Clear	10	6.67

As per data shown in table 3, 84% of the respondents at Gulbahar Square station were satisfied with the distance from the catchment area when carrying their

luggage or groceries. The lowest of satisfied respondents were in Hayatabad Phase III, which is 76%. The overall satisfaction percentage was 79.33%.

Table 4. Is the Station Accessible for Disabled Women coming from Catchment Areas?

Station	Response	Number	Percent
Gulbahar Square	Yes	43	86.00
	No	3	6.00
	Not Clear	4	8.00
KTH University of Peshawar	Yes	36	72.00
	No	11	22.00
	Not Clear	3	6.00
Hayatabad Phase III	Yes	39	78.00
	No	2	4.00
	Not Clear	9	18.00
Cumulative Response	Yes	118	78.67
	No	16	10.67
	Not Clear	16	10.67

Data in table 4 reveals that 18% of the respondents at Hayatabad Phase III station could not decide whether it was accessible for disabled women, whereas 86% of

the respondents at Gulbahar Square were of the opinion that the station was easily accessible for disabled women.

Table 5. Is the Station Secure Enough to Protect/ Prevent any Theft or Robbery?

Station	Response	Number	Percent
Gulbahar Square	Yes	30	60.00
	No	5	10.00
	Not Clear	15	30.00
KTH University of Peshawar	Yes	42	84.00
	No	7	14.00
	Not Clear	1	2.00
Hayatabad Phase III	Yes	43	86.00
	No	7	14.00
	Not Clear	0	0.00
Cumulative Response	Yes	115	76.67
	No	19	12.67
	Not Clear	16	10.67

Table 5 above shows that 76.67% of the respondents held that the BRT station was secure enough to prevent theft and robberies, 12.67% of respondents disagreed with them, whereas 10.67% could not

decide what to say on the issue. The satisfaction rate was highest at the Hayatabad Phase III station, and it was 86%.

Table 6. Have you ever Felt Prone to Harassment by any Person at the Station?

Station	Response	Number	Percent
Gulbahar Square	Yes	3	6.00

Station	Response	Number	Percent
	No	44	88.00
	Not Clear	3	6.00
	Yes	5	10.00
KTH University of Peshawar	No	44	88.00
	Not Clear	1	2.00
	Yes	2	4.00
Hayatabad Phase III	No	45	90.00
	Not Clear	3	6.00
	Yes	10	6.67
Cumulative Response	No	133	88.67
	Not Clear	7	4.67

A very clear majority of the women felt secure against harassment at BRT stations, as revealed in table 6 above. 88.67% of the respondents considered themselves secure at the station, and the percentage was highest at the Hayatabad Phase III station, which was 90%.

Table 7. Have you ever Faced Gender Discrimination at the Station or on the Bus?

Station	Response	Number	Percent
Gulbahar Square	Yes	1	2.00
	No	48	96.00
	Not Clear	1	2.00
KTH University of Peshawar	Yes	0	0.00
	No	47	94.00
	Not Clear	3	6.00
Hayatabad Phase III	Yes	2	4.00
	No	43	86.00
	Not Clear	5	10.00
Cumulative Response	Yes	3	2.00
	No	138	92.00
	Not Clear	9	6.00

As clear from the data presented in table 7, 92% of the respondents did not face any gender discrimination in BRT. Only 2% of the respondents had to face discriminative behaviour at the BRT station. However, the satisfaction rate was lowest at the Hayatabad Phase III station, and it was 86%.

Table 8. Is the Station Protected against Beggars or Vendors?

Station	Response	Number	Percent
Gulbahar Square	Yes	33	66.00
	No	15	30.00
	Not Clear	2	4.00
KTH University of Peshawar	Yes	43	86.00
	No	3	6.00
	Not Clear	4	8.00
Hayatabad Phase III	Yes	36	72.00
	No	5	10.00

Station	Response	Number	Percent
Cumulative Response	Not Clear	9	18.00
	Yes	112	74.67
	No	23	15.33
	Not Clear	15	10.00

Table 8 reveals that 74.67% of the overall respondents were satisfied with the arrangements at the BRT station to keep the beggars and vendors away from the passengers. However, 30% of respondents at Gulbahar Square were not satisfied with such arrangements. At the Hayatabad Phase III station, 18% of the respondents could not clearly decide their opinion on the issue.

Conclusions and Recommendations

Data obtained from the questionnaires clearly reveals that a majority of the respondent women are satisfied with the accessibility and security arrangements at BRT stations. Information obtained from interviews and discussions with the passengers leads to the fact that disabled women, women with babies and children and women carrying luggage or groceries feel uncomfortable at elevated stations. BRT stations are

though protected against beggars and vendors; however, their gatherings at entry and exit points of these stations cause problems to women passengers. Stations have satisfactory security arrangements against thefts and robberies.

Conclusions of the study lead towards the following suggestions:

1. Each station at the BRT route should have a significant number of female security and assistance staff for the appropriate guidance of the female passengers.
2. The provision of wheelchairs at stations especially at elevated and underground stations along with trained helpers may increase the trust of passengers on the system.
3. The entry and exit points at stations need proper care to keep the unwanted vendors and beggars significantly away from the stations.

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