IMPACT OF METRO BUS SYSTEM ON FEMALE MOBILITY IN ISLAMABAD-RAWALPINDI

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CERTIFICATE

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Abstract

This study explores the role of public transport system in female mobility in Pakistan. Based on a micro-study, using a mix method approach, this research assesses the impact of the Metro Bus System (MBS) on female mobility in the twin cities of Islamabad-Rawalpindi. Primary data is collected from three groups of female passengers – working women, students, and casual travelers – to evaluate whether the MBS has brought an improvement in the service quality of public transportation for them.

The findings of this study suggest that the metro bus service in Islamabad-Rawalpindi has improved the service quality of public transportation for female passengers leading to their ease in mobility. The analysis of service quality dimensions, such as reliability, tangibility and affordability, safety and assurance shows that the MBS has effectively addressed the concerns of female population regarding public transportation environment. It has significantly improved female mobility in the twin cities by providing a respectful and hassle-free transportation. Despite some limitations such as difficulty in accessibility of metro bus stations, limited inter-connectivity, and congestion problems and unavailability of seats during peak hours, it can be concluded that the MBS has effectively addressed issues such as uncertainty and insecurity for female passengers to a greater extent. This research suggests extension of metro bus network and feeder buses to improve accessibility and inter-connectivity, and running female exclusive buses during peak hours considering congestion and safety issues.

Key Words: *Public transport, Metro Bus System, female mobility, social mobility, Pakistan*

Dedication

I dedicate this study to my family. A special feeling of gratitude to my loving mother and my three elder sisters for the patience and support they showed during the study period. They have always loved me unconditionally and whose good examples have taught me to work hard for the things that I aspire to achieve.

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Acronyms

ABS	Automated Bus Scheduling
AFC	Automated Fare Collection
ADB	Asian Development Bank
MVA	Martin and Voorhees Associates
MRT	Mass Rapid Transit
MMBS	Multan Metro Bus System
OLMRT	Orange Line Mass Rapid Transit
GLMRT	Green Line Mass Rapid Transit
BLMRT	Blue Line Mass Rapid Transit
PLMRT	Purple Line Mass Rapid Transit
PMA	Punjab Mass Transit Authority
PMBS	Pakistan Metro Bus System
PRTC	Punjab Road Transport Corporation
PUTC	Punjab Urban Transport Corporation
RIMA	Rawalpindi Islamabad Metropolitan Area
PMBS	Pakistan Metro Bus System
RMT	Rapid Mass Transit
SMEDA	Small & Medium Enterprise Development Authority
WB	The World Bank

1 INTRODUCTION

Public transport or mass transit system provides mobility services to the public using shared vehicles. Besides providing daily commuting facilities to the citizens, it also plays an important role in providing several externalities of transportation including traffic congestions on roads, accidents and reducing environment pollution. Globally, the Metro Bus Systems (MBS) are used to provide public transport facilities to citizens in order to fulfill their daily commuting needs. The MBS is considered as a preferred way of mass transit in terms of safety, comfort and reliability (International Association of Public Transport, 2014). It has been established in major cities of 148 countries around the world, including Pakistan (International Association of Public Transport, 2014).

Metro service was first introduced in London, England in 1890 as a rapid mean of mass transit. China has established the world's largest metro system in Shanghai with a length of more than 500 km and around 3.3 million people use metro service every day (International Association of Public Transport, 2014). The MBS in Tokyo is considered as the world's busiest system. In Asia, more than 70 million people travel through metro system per day. It is considered to be half of the world's total travelling population per day (International Association of Public Transport, 2014). A safe, reliable and affordable public transport system offers services to general public including those who cannot afford private transportation. This may also encourage female mobility leading to their increased participation in education and labor force (Imran, 2009).

In order to overcome growing congestion problems in major urban cities, the government of Punjab initiated the MBS projects to revamp the public transport sector. The need for

MBS was felt to provide an affordable and reliable public transport facility to ensure safety and security the commuters. To provide safe, efficient and comfortable public transportation system, the government of Punjab established the Punjab Mass Transit Authority (PMA). An efficient public transport provides an essential service to citizens, especially to the poor. A safe public transport system can play a role in increasing the size of the labor market by providing greater access to employment opportunities for those who cannot afford or prefer private transportation.

Like males, female population in Pakistan also need to use public transport facility to travel to work, market and/or to visit relatives or to access public services such as education and hospitals. Females are more dependent on public transport as compared to males because of the use of other transport like motor-bikes and personal vehicles is restricted by norms of society. Yet females in Pakistan face challenges while using public transport due to lack of safe and secure transport system. The MBS was established to provide a safe, reliable, affordable and easily accessible modern public transport system to a larger population of the twin cities. According to the available literature on public transport and female mobility, the security and safety needs of female commuters are somewhat different from those of male commuters. The social and cultural context and some specific physical characteristics of public transit environment put constraints on the mobility of female population. This research will study these patterns in the case of Pakistan Metro Bus.

To provide safe, efficient and comfortable urban transportation system and reduce the growing congestion problems in Punjab, the PMA has initiated projects, including Lahore Metro Bus System (LMBS), Pakistan Metro Bus System (PMBS), and Multan Metro Bus

System (MMBS). Apart from these, Rapid Mass Transit Systems (RMTS) are under construction in Karachi and Peshawar. The RMTS are also planned and approved for Faisalabad and Quetta by the Punjab and Baluchistan governments respectively.

The Pakistan Metro Bus System (PMBS) operates between Islamabad and Rawalpindi. Based on the experience of the Punjab government and the feasibility study conducted by the Capital Development Authority (CDA), the federal and provincial governments joined hands to launch a Metro Bus project to connect the twin cities and alleviate the traffic congestion problem on this corridor. The line was inaugurated on June 04, 2015 and has achieved highest ridership of 151,000 per day. The PMBS serves the metropolitan areas of Islamabad and Rawalpindi, spans over approximately 22.5 kilometers running from Saddar, Rawalpindi to Pakistan Secretariat, Islamabad. The PMBS is equipped with e-ticketing, intelligent transportation system wand – automated fare collection and electronic video and audio bus scheduling system (AFC-BSS) system – CCTV security on service stations and inside metro buses, and automated escalators and elevators for passengers' convenience. It consists of 24 stations; 10 in Rawalpindi and 14 in Islamabad. Table 1.1 presents the average ridership at every station of the Islamabad-Rawalpindi MBS on daily basis.

The PMA is in the process to starting operation of integrated public transport system (feeder routes) in Rawalpindi. In phase-I of the project, the PMA has planned six feeder routes to the existing Pakistan Metro Bus System. The total number of buses that will be operated on these routes are 78 mini buses (8 meter long). The feeder routes are planned such that to have fare, operation and physical integration with Metro Bus Line. In integrated public transportation system, the passengers will not need to pay two times

while transferring from one bus or route to other but will pay discounted fare (Punjab Mass Transit Authority).

Table 1.1 Average Ridership at Every Station of PMBS on Daily Basis

STATION	SADDAR TO SECRETARIAT	SECRETARIAT TO SADDAR	TOTAL
SADDAR	1379	0	1379
MARRIR CHOWK	9658	4	9662
LIAQAT BAGH	13151	1276	14427
COMMITEE CHOWK	5367	1323	6690
WARIS KHAN	4360	884	5206
CHANDANI CHOWK	4007	711	4718
REHMANABAD	4316	740	5056
SIXTH ROAD	4142	3033	7175
SHAMSABAD	2601	933	3534
FAIZABAD	933	11489	12422
IJP ROAD	346	16	362
POTOHAR ROAD	1027	97	1124
KHYABANA I JOHAR	10712	2434	13146
FAIZ AHMED FAIZ	736	233	969
KASHMIR HIGHWAY	5600	4535	10135
CHAMAN ROAD	578	796	1374
IBNE SINA ROAD	200	43	243
KATCHERY STATION	398	1358	1756
PIMS	187	37	224
STOCK EXCHANGE	1034	7622	8656
7TH AVENUE	326	50	376
SHAHEED-I-MILLAT	557	10225	10782
PARADE GROUND	39	11335	11374
SECRETARIATE	0	4431	4431
TOTAL			**1,35,221**

Source: Govt. of Punjab, "Security and Safety for Metro Bus System in Rawalpindi and Islamabad (Saddar to PM Secretariat)," Punjab Metro Bus Authority (2014): P31

As one of the purposes of PMBS is to provide a safer and reliable transport system to the female commuters, in accordance with the modern transport needs, this study offers a comprehensive analysis of the public transportation experience that influences female mobility in Pakistan. Further, it is about time to evaluate the quality, effectiveness and maintenance of metro bus projects, and to explore whether the PMBS has made an impact in the context of women mobility.

1.1 Background of the Study

In Pakistan half of its total population lives in urban areas which makes Pakistan the most urbanized country in Asia and the Pacific (Zhang *et al.*, 2014b). Nearly two third of this urban population lives in 10 major cities of Pakistan. With the passage of time the already highly dense but walkable urban centers are getting overcrowded due to population growth. In Pakistan, a low-income family may not afford a private vehicle. Therefore, most of urban population travels through public transport for their daily commuting (Adeel *et al.*, 2014b). During 2010 and 2016, the transport volume by road and rail has increased substantially; growing up from 438,131 to 622,967 million passenger-km/year (JICA, 2006). A study conducted by Japan International Cooperation Agency (JICA) indicates that the demand for public transport in Pakistan is rapidly increasing (see table 1.2). Following the economic growth scenario of 7-8 percent for Pakistan, indicated in the Medium Term Development Framework (MTDF, 2005-10), the future transport demand was estimated to grow to three folds the present demand as shown in the table below.

Table 1.2 Number of Passenger Transport Demand in Pakistan

Year	Passenger	
	Number of passengers (million/year)	Passenger-Km (billion-km/year)
2005	780	154
2015	1455	293
2025	2497	517

Source: JICA, NTRC & MOC, Pakistan Transport Plan Study in the Islamic Republic of Pakistan, Final Report, 2006.

In Pakistan, mobility has been largely a gender phenomenon. In a sociocultural context of Pakistan, mobility of female population through public transport is often associated with safety and respect. As a result, the mobility of female population becomes restricted (Adeel *et al*, 2014a). In such a scenario, female commuters would prefer a transport facility which is accessible, comfortable and above all which can provide safety and privacy. Due to the lack of affordability of private vehicles, vast population relies on the public transport system for their routine mobility. However, the present condition of public transport system in Pakistan does not fulfil the needs of female population. It does not provide easy accessibility, safety, privacy and hassle-free environment during travel. Table 1.3 shows a comparison of percentage use of different types of transportation in major cities of Pakistan and India before MBS.

Numerous factors have contributed to the upward trend of private vehicle use and the declining or static role of public transport in most cities. The most important factor is continuous investment in roads, which left few or no funds for public transport provision in most cities of the developing world. Badami (2005) mentioned that urban transport policy in India has been biased in favor of private transport modes. Imran and Low (2007) reported how scarce resources in Pakistani cities are deployed in road development at the expense of public transport and non-motorized transport. They found that road investment policies are not the result of any industrial development in Pakistan, and that private vehicles did not come to Pakistani cities until after World War II happened in developed world countries. These policies developed primarily due to involvement of international development institutions and their consultants, which favored roads instead of the

inherited railway that passed through most of the cities. They concluded that heavy investment in roads left no money for public transport in Pakistani cities.

Table 1.3 Types of Transportation in Major Cities of Pakistan and India

CITIES	TRIPS		
	Private Transport % (Motorized)	Public Transport % (Motorized)	Non-Motorized Transport %
Lahore	24	16	60
Karachi	27	23	50
Delhi	18	40	42
Mumbai	18	60	22
Kolkata	5	78	17

Source: Imran (2009)

A large number of people travel between the two cities, Islamabad and Rawalpindi, every day for job and education. Before the introduction of the Pakistan Metro Bus System in Islamabad-Rawalpindi, the public transport system – mainly consisted of buses, vans and Suzuki pickups – owned by the private business community were the only mean of transportation in the twin cities.

Due to lack of an organized public transport system and lack of standards provided by mini bus transportation, people had to rely on one or the other form of private transport facilities. Before the launch of PMBS, around 210,000 different types of vehicles piled at three corridors which connect the twin-cities (Punjab Mass Transit Authority, 2014). This volume of traffic can carry around 525,000 commuters daily. According to an estimate, around 158,000 passengers travel between the two cities, while around 135,000 daily

passengers concentrated on the corridors from where the existing PMBS route passes (Punjab Mass Transit Authority, 2014).

Considering these huge numbers of commuters, the Punjab government felt the need of a mass transit system to combat traffic congestion and noise and air pollution caused by the heavy traffic due to increased use of vehicles. The aim of the rapid mass transit system was to provide a safe, affordable and easily accessible urban public transport system. The PMA was established for the construction, operationalization and maintenance of MBS. It aims to ensure an efficient public transport system especially for low income population, and safe and reliable transportation for female population which would increase their participation in the labor force.

The public transport policies, so far, in Pakistan shows deep structural problems about female passengers. Pakistan needs a range of transport policies to meet the transport needs and travel patterns of female passengers. The policymakers and transport professionals are aware of this social dimension of public transport but the needs to address the needs of female passengers and travel patterns have not been the priority of policy makers. It is important for policymakers to acknowledge the social dimensions of public transport and cultural constrains on female mobility while formulating transport policies. The study provides basis for the new public policy initiatives in public transport sector by providing an in-depth understanding of public transport as a gender phenomenon which was completely neglected previously while formulating public transport policies. The study explains that without taking public transport as a gender phenomenon, every new public transport policy will ignore half of the public (female population) and their needs and

concerns. The study inform the policy debate on public transport about the concerns, needs and problems of female population which were previously neglected. The findings of the study would help policies makers in making new policies as well as make changes in existing transport policies. The study presents its findings to Punjab government and Punjab Mass Transit Authority. PMA would take the findings of this study to improve the existing service quality of MBS and also use the findings of study in future projects of Mass Transit system.

Table 1.4 presents the chronology of public transport planning and policy in Pakistan. It separates the historical overview of public transport planning and policies in Pakistan into two periods: (a) 1947-1990, and (b) 1991 forward. The period represents public transport policies and development after independence from British India in 1947 to 1990 and symbolizes the aspirations of the newly-independent country. The 1991 forward period was particularly concerned with exploring how public transport policy accommodated within a sustainable development context. Overall, the table gives a historical view of public transport planning viewed with the help of government transport planning and policy documents and published scholarly papers.

After independence railway was the sole mean of public transportation in Pakistan. In 1951 for the first time the Motor Vehicle Act 1939 was amended and the *Road Transport Board* was created in Pakistan (Imran, 2009). This was the first step toward the road transport system in Pakistan.

In 1957 under first five year plan the *West Pakistan Road Transport Board* (WPRTB) was created to complement the railway with road transport in public transportation. After two

years, in 1959, *Karachi Road Transport Corporation* (KRTC) was established to promote bus based public transport system in Karachi Metropolitan area (National Planning Board Islamabad, 1957).

Under second five-year plan government for the first time gave priority to the road transport system in Pakistan. The government started to initiate construction of roads. The second plan encourage private transport companies to participate in public transportation (Planning Commission, 1960). The *Master Plan for Greater Lahore* (MPGL) was introduced under which a mass transit system was introduce in the form of circular railways to improve public transport system in Lahore city (Punjab Housing and Physical Planning Department, 1971).

After the second five-year plan, the transport system was deregulated in 1970s. This provide an opportunity for private sector to compete with government owned companies but government gave priority to public own vehicles in route permits. In 1977 *Punjab Road Transport Corporation* (PRTC) and the *Punjab Urban Transport Corporation* (PUTC) were created in Punjab to provide efficient public transport services (Punjab Housing and Physical Planning Department, 1977). The PRTC and PUTC were closed after operational for a couple of years in 1979.

Under the *National Transport Policy* (1991) government decided to provide limited subsidized transport facility to low income population. On the other hand the policy decided to promote private sector to provide middle class with quality transport facilities (National Transport Research Centre, 1991). Under the *Prime Minister Transport Scheme* in 1991 the incentive package which includes duty free on import of taxis and buses, loans on

low interest rates and special registration numbers for public transport vehicles were given by government (Ministry of Communication - Pakistan, 1991). In 1996 under *Awami Train and Bus Project*, a bus and train mixed transport system was introduced in Rawalpindi and Islamabad to reduce the traffic congestion (NTRC, 1996). The *National Integrated Transport Policy 1998* focused on land use and integrated transport system to reduce the accessibility (Transport Policy of Pakistan, 1998). In 1999, the *Transport Sector Development Policy* was made by the federal government with the help of the World Bank. The policy emphasized on deregulation and privation of public transport system in Pakistan (Transport Sector Development Initiatives, 2001). In 1999, the *National Transport Strategy* was formulated by the *Small and Medium Enterprise Development Authority* (SMEDA) under the Ministry of Industries and Production which was approved by the federal government (National Transport Strategy, 1999). This was the first policy approved by the government, whereas all others were drafts which were never approved by the government.

In 2000, the Planning Commission of Pakistan prepared a transport policy which emphasized on road transport system and encouraged private sector in public transport. The *Ten Year Perspective Development Plan* (2001-2011) and the *Medium Term Development Frame Work* (MTDF 2005-2010) of the Planning Commission focused on bus based transport system for all the metropolitan areas of Pakistan. In 2003, an effort was made by the federal government with the help of the Asian Development Bank (ADB) on the project assessment of critical current transport sector needs.

In 2000, *Integrated Development Plan* (2001-2021) was prepared by the Punjab government. This plan focuses more on road development rather than on public transport development (Lahore Development Authority, 1997). In 2005, the Punjab government gave task to *Martin and Voorhees Associates* to prepare a *Mass Transit Framework* (MTF) for major urban areas in Pakistan. The commission proposed a rail based rapid mass transit system for Lahore city (Govt. of Punjab, 2006). In 2005, the Punjab government prepared a Medium Term Development Framework (2006-09) under which a commission was made to prepare transport policy for province (Punjab MTDF, 2006).

In 2012, the Planning Commission of Pakistan prepared a transport policy draft. The policy draft was not approved due to changing priorities of the new government (Pakistan Tourism Policy, 2012). Today, the transport sector is the 7th pillar in Vision 2025, but it mainly focuses on development of road infrastructure rather than improving public transport facilities. Moreover, after the 18th Constitutional amendment the subject of transportation has devolved to provinces.

The review of public transport planning and policy in Pakistan provides a fascinating example of the ways in which policy paradigms have developed historically and have been gradually changed and then maintained over time. Despite the unquestionable benefits that public transport planning and policy can bring to Pakistan, there have been many shortcomings in the development and implementation of public transport policy.

From the beginning, there was an issue with investing, managing, and operating public transport in Pakistani cities. Historically, the provincial governments in Pakistan have owned and operated intercity and urban public transport services.

However, over the years, the government, according to the guidelines of the World Bank, advocated to encourage the private sector in operating public transport.

Table 1.4 Chronology of Public Transport Planning and Policy in Pakistan

YEAR	POLICY/PLANNING	PROJECTS
1951	Amendment of Motor Vehicle Act 1937	Creation of road transport board
1955-60	First Five Year Plan	The West Pakistan road transport board and Karachi road transport corporation was established.
1960-65	Second Five Year Plan	Master plan for greater Lahore & private sector was encouraged in transport.
1970s	Deregulation of Public Transport system	PITC and PUTC were established in Punjab.
1991	National Transport Policy	Different transport facilities for low and middle-income population.
1991	Prime Minister Transport Scheme	Duty-free on import of taxis and buses, loans on low interest rates and special registration numbers for public transport vehicles.
1996	Awami Train and Bus Project	Bus and train mix transport system was introduced.
1998	National Integrated Transport Policy	Emphasized land use and transport integration to reduce need to travel and maximize public transport accessibility.
1999	Transport Sector Development Policy	Deregulation and privatization of public transport.
2001-11	Ten Year Perspective Development Plan & Medium Term Development Frame Work	Focus on transport system for metropolitan areas. Development of an efficient public transport system based on buses linked to mass transit system with light train.
2001-21	Integrated Development Plan by Punjab Govt.	Focuses on infrastructure/road development. 94.8% funding for infrastructure development and remaining 5.2 for transportation.
2005	Mass Transit Framework by Punjab Govt.	Rail based rapid mass transit system for Lahore city
2015	Vision 2025 (Transport sector is 7th Pillar)	More Focuses on infrastructure/road development

The decline of state-owned public transport services created a vacuum that was filled by private operators in accordance with these guidelines. Initially, the market was open to private operators in parallel with public-owned public transport. However, the

availability of public transport has not grown at the same rate as the urbanization in Pakistani (Sohail *et al*. 2006).

In the early 1990s, a change occurred in relations between the private sector and the government. The *Transport Sector Development Initiative* (TSDI) and the *Small and Medium Enterprise Development Authority* (SMEDA) transport policies were developed to promote these stronger public-private relations. The government wanted more involvement by the private sector in the development and operation of public transport. The introduction of franchised public transport in different cities of the Punjab province is an example of these relationships. All policies to provide adequate and reliable public transport in Pakistani cities have failed badly in the presence of continuous demand, high-density mixed land use patterns, and a long history of private sector involvement in the provision of public transport.

A voluminous literature is available on public transport systems and its utility for female passengers, but there has been limited work done in the context of Pakistan. The literature on public transport examines the concerns of (both male and female) passengers in public transportation about safety, accessibility, reliability and affordability significantly influence their travelling decisions. The relationship between female safety and public environment has received much attention in the literature. However, the experience of female passengers about the utility and safety in transit environment has received less attention. Even less is known about the experiences of female population in Pakistan. This study aims to fill this gap by identifying the needs and perspectives of female passengers about their safety, accessibility, reliability and affordability in public transport system in Pakistan.

Keeping this in view, this research will examine the female utility of Pakistan Metro Bus System (PMBS), Islamabad-Rawalpindi and its impact on female mobility.

1.2 Objectives of the Study

The aim of this study is to investigate the role of public transport system in female mobility in Pakistan. In this context, the objective of this research is to examine the utility and impact of Metro Bus System in female mobility in Islamabad-Rawalpindi. This research seeks to explore female experience (before and after the provision) of MBS. Following research questions will guide this study:

- Has Metro Bus System brought an improvement in the service quality of public transportation for female passengers?
- How the female travelers perceive Metro Bus System in term of accessibility, safety, affordability, and reliability?
- Has Metro Bus System responded to the concerns of female population regarding public transportation environment?

1.3 Significance and Scope of the Study

In a sociocultural context of Pakistan, mobility of female population through public transport is often associated with safety and respect. As a result, the mobility of the females population becomes restricted (Adeel *et al*, 2014a). In such a scenario, female commuters would prefer a transport facility which is accessible, comfortable and above all which can provide safety and privacy. Due to the lack of affordability of private vehicles, vast population relies on the public transport system for their routine mobility. However, the present condition of public transport system in Pakistan does not fulfil the needs of female

population. It does not provide easy accessibility, safety, privacy and hassle-free environment during travel.

The MBS claims to address these gender-related mobility issues. In this context, this study offers an in-depth understanding of the impact of PMBS on female mobility in Islamabad-Rawalpindi. The scope of this study is to document the needs, reservations and safety concerns of female passengers regarding public transport system from empirical evidences as well as interviews with representatives of women commuters and to examine the extent to which these needs and reservations can be addressed by the concerned organizations and policymakers through the Metro Bus System.

No known study has so far examined the impact of metro bus in Islamabad-Rawalpindi on female mobility. This research seeks to inform future policy decisions by identifying issues and possible ways forward related to the provision of public transportation in urban centers and its role in female mobility.

1.4 Structure of the Study

This study is structured in five chapters. After an introductory first chapter, chapter 2 gives an overview of the existing literature underlining public transportation and female mobility. Chapter 3 presents the research methodology. The chapter sets out the research approach: the selection of research method, sampling technique used, the primary data collection process, and the analysis process. Chapter 4 presents the findings and discussion, followed by the conclusions in chapter 5 in which this research outlines policy recommendations, and suggestions for future research.

2 LITERATURE REVIEW

2.1 Public Transport System and Female Mobility

Public transport system in developing countries has been the focus of several studies for the last many decades. The accessibility and affordability have been focus of various researches in the context of developing countries (Silva *et al.*, 1998). Apart from this, provision of effective transport system for female population has also grab the attention of some studies recently to improve female population welfare (Turner & Fouracre, 1995). Most of the research on public transport and female population gives little attention towards female population needs about their safety and transit environment. Most of the literature on public transport focuses on affordability and accessibility of overall population. The needs of female and male regarding urban transport system are different (Smith, 2008).

An effective and reliable transport system plays a significant role in provision of transport services to its citizens. It provides transport facilities to employs, students and casual traveler who cannot afford private vehicles. Its importance increases more when it comes to provides safe and reliable journey to female population. A safe, affordable and reliable mode of public transport helps female population to participate them in education and employment activities (Imran, 2008). Like many other developing countries mobility is highly a gender phenomenon in Pakistan. The safety and privacy of female makes mobility a sensitive activity. Therefore people prefers a mood of transportation which ensures their safety and privacy (Adeel, Yeh & Zhang, 2014a). Studies shows that easy accessibility, comfortably, affordability and safety are important aspect of urban public transport system for female in developing countries (Adeel *et al*, 2014a). Lack of availability of suitable

transport with safe transit environment decreases female access to education, employment and even health facilities (Reed *et al*, 1999). Easy access to transport facility is considered as the most important aspect of any transport system. Lack of easy access and lack of desire environment during travel significantly decreases the mobility of female and ultimately their access to basic facilities of health, education and job (NIPS, 2003).

Surveys of the perceptions of transit passengers have revealed a number of issues related to their anxiety about personal security. For one, fear of transit is more pronounced in certain social groups than others. Indeed, gender emerges as the most significant factor related to anxiety and fear about victimization in transit environments (Stephen T., 1989). Researchers have also identified more pronounced levels of fear of public settings among the elderly, certain ethnic groups, and low-income people who typically tend to live in high-crime neighborhoods (Marianne, 1987). Important differentiations seem to exist among members of specific social groups in their fear of public settings and transit environments because of age, race, class, cultural and educational background, sexual orientation, prior victimization experiences, and disability status (Stephen T., 1989). But researchers also warn us not to fall into the trap of considering social groups as uniform or stereotypical, urging for a more nuanced analysis of the causes of fear of victimization and crime (Austin et al, 1984).

Women's fear of crime in public spaces has been adequately documented (Austin et al, 1984). Research of transit passengers' perceptions of transit safety has also intensified in response to the recognition that anxieties about crime are impeding travel choices and affect transit ridership and revenue (Wallace, 1999), and researchers have written guidelines for safer cities and transit environments (Smith, 2008).However, the focus of

these studies have not been specifically on women and safety. In contrast, a small subset of studies has focused on women's concerns and fears about personal safety in transit environments (Gilchrist et al, 1998). Criminologists complain, however, that our increased knowledge about the causes of fear has not necessarily translated into nuanced policy responses tailored to the particularities of different groups and physical settings. Additionally, there remains a general lack of knowledge regarding specific female requirements for transit environments. Researchers have argued that "this is partly due to the imperceptibility ofwomen, for which female researchers criticize most of the existing research. It applies a universal human concept based on the assumption that women and men are in the same situation, and therefore, have the same needs and attitudes" (Silva et al, 1998).

Empirical research has clearly established that the transportation needs and travel behavior of women are different from men (Lang, 1988). Women often work closer to home, make more trip chains between home and child care or school and on to work, and are often accompanied by their children in their trips (Reed et al, 1999). Because they frequently have to do non-work related chores, they need more travel flexibility than men (Gill, 1990).

Women, however, are not a homogeneous group. As Lang (1988) explains: "There are vast differences between the needs of elderly women, women in the paid labor force, and women whose work is home-based. There are also differences between the needs of women at different stages in their life cycle. Similarly, there will be vast differences in needs depending on the income of the household and whether women have access to a car."

2.2 Female Mobility and Transit Environment

Fear play important role in detracting female from using public transport. People avoid using specific routes and transporting systems when they believe that they are not safe during journey or at station (Wallace *et al*, 1999). Fear of victimization and crime is quite widespread among women while travelling in public transport. Almost every fear of crime survey reports that women are much more fearful of crime than men (Miranda, 2005). While the fear of rape and serious violence from men may lie in the back of many women's minds, feminist scholars also argue about an existing continuity of violence against women, which includes intimidation, groping, sexual comments and harassment, threats, and other nuisance crimes with sexual undertones (Miranda, 2005).

In explaining the gendered nature of fear of crime, criminologists highlight these often "invisible" and under-reported crimes against women. Research shows that lack of safety decreases public transport commuting. A survey conducted by department of Transport UK found that 10% of public transport commuting increases by ensuring safety during travelling, particularly at waiting places (Govt. UK, 2002). From the surveys on perception of riders revealed that gender is the most important factor related to safety during travelling. It also shows that people with low income background living in low income areas feel more fear due to the environment of those areas (Gilchrist et al, 1998). Long walking distance from station is not only time consuming for passengers but it also lead to creating fear in female passengers. People fear more during their waiting for vehicle at station or their journey from and to home than during travelling. Shen at el in his study found that 42% of incidents either take place near vicinities or 36% at transit stations during waiting (Smith, 2008). The delays in bus schedules not only create inconvenience

but also create fear for female population by creating more chances of incidents. A study by Tylor et al shows that in UK females use their private vehicles or taxis rather than public transport when they feel unsafety. Females either confine their use of public transport or use when they are accompanied by some male member of family (Tharasher & Schnell, 1974).

The behavior of staff members at station and during travel also creates concerns for passengers. Female passengers prefer technological solutions at mass transits and replace staff with automated machines at stations and in buses (Tharasher & Schnell, 1974). Female passengers have a mix reaction for having segregated transport services. Some female passengers appreciate segregated transport services whereas others shows concerns that segregated services draw attention to females as targets (Turner & Fouracre, 1995). The policies that get more appreciation from female passengers are request stop programs, bus stops closer to destinations and awareness campaigns for disemboguing groping (Reed *et al*, 1999).

The literature also indicates that the presence of certain environmental factors in a public setting is in general associated with greater fear. These include darkness, desolation, lack of opportunities for informal surveillance by the general public or the residents of surrounding establishments, lack of maintenance, and poor environmental quality (Jessica, 2007). Therefore, the physical characteristics of the immediate neighborhood where a bus stop or station is located can affect people's perception of risk and fear. Criminologists have long talked about the relationship between physical incivilities (such as run-down vacant buildings, litter, or graffiti) and fear (Gill, 1990). The specific design characteristics of a transportation setting can induce fear among

passengers. People are mostly fearful in places where they do not have a clear line of sight of their surroundings; where there are many nooks, corners, or other objects behind which someone can hide; and where they may feel trapped with no possibilities of escape. Underpasses, tunnels, and dark underground stations are typically more feared than open, ground-level transit facilities (Jessica, 2007).

2.3 Female Mobility and Public Transport in Pakistan

While the country's booming urban population has created a mark on political and cultural stage of the country (Kugelman, 2013) their mobility issues are also becoming increasingly persistent and chronic in nature (Imran, 2009; Badami, 2005). Major cities are unable provide an acceptable public transport network for their residence. Available means of public transport are generally categorized as 'inadequate' due to major issues with service quality, coverage, fleet shortage and poor enforcement (Imran, 2009).

However, female travelers are more severely affected than male due to their special mobility needs in the conservative sociocultural settings of the state. Women are considered 'family honor' and often require permission of travel from head of household (Sathar and Kazi, 1997). While travelling without male, women are sometimes charged with extra fare or sometimes taken to wrong bus stops. They often face harassment, stalking and poor travel environment in public transport and walking on urban roads (Sohail et al, 2006). Knowing this hostile travel conditions, families do not allow women to travel without male especially the young adults. Urban female might be the most affected intersection of gender and geography as urban areas are considered more conservative in their social settings. In this way, women travel horizons are spatially and temporally

restricted and demand attention from the policymakers (Hoodbhoy, 2013). In the ongoing attempt to realize a road based transportation system for economic growth and connectivity in the country, study of gender differences in travel behavior and mobility requirements have got little attention.

Unsafe and unreliable public transport causes stress and discomfort for all kinds of females when they have to travel: female students, working women, and casual travelers. Many females avoid using public transport, particularly on crowded modes such as wagons. Some switch to higher cost modes such as *rickshaws* and *Qingchis*. Others adjust their travel timings and routes – but female students and working women often have no choice but to travel during peak hours. Casual travelers may simply do not travel without a male family member (Kamran, 2012).

Difficulties with transport can restrict female ability to carry out even the most basic tasks, such as going to the market, visiting the doctor or their children's schools. Girls in some areas drop out of studies earlier because when they get to the level of Middle, Matric or Intermediate, there is no safe and reliable transport to the nearest school at that level, or because safe pick-and-drop services to school are expensive (Sajjad *et al*, 2017).

Females who want or need to work often restrict their search only to employers that are very close to home, provide transport services, or in locations which are convenient for a male family member to accompany them to and from work. This means they have to give up better job opportunities that do not provide transport – or they may not find a job at all (Sajjad *et al*, 2017).

2.4 Summary of Literature Review

Public transport system has been focused of many studies since last two decades. These studies mostly focused on accessibility and affordability of public transport system. Despite differences in needs and concerns of male and female commutes regarding public transport system, most of the studies did not give importance to the gender phenomenon in public transport system. A safe and reliable public transport is necessary for the mobility of female population. It gets more importance in developing countries like Pakistan where female and their mobility is associated with honor and safety. Absence of a safe and reliable public transport restrict the access of female population to their basic needs such as education, health and participation in workforce. Important differences seem to exist among female commutes based on age and commuting purpose.

The physical characteristic of transit setting, distance from station and waiting for bus at station increase the fear and make female commutes more vulnerable towards harassment and crime. These factors lead to decrease in mobility of female population and they prefer to avail education, health and job opportunities at walking distances while compromising the quality factor.

In Pakistan due to lack of safe and secure public transport environment and the sociocultural context of Pakistan where female are usually associated with honor and respect, restrict the mobility of female population. Due to lack of safe public transport environment, families do not allow females to travel on public transport. Either female have to setback at home or need male companion to travel on public transport. It becomes more difficult for young working, casual and students who are more vulnerable and prone to victimization and harassment.

3 METHODOLOGY

The aim of this research is to investigate the role of public transport system in female mobility. Taking a mixed method approach, this study explores the impact of Metro Bus System on female mobility in the twin cities of Islamabad- Rawalpindi. The research seeks to explore experiences of female passengers (before and after the provision) of MBS related to the service quality of public transportation, and concerns related to accessibility, safety and reliability. This study is novel and makes an original contribution to the literature and public policy debate as no other study has so far examined the impact of MBS on female mobility in the context of Pakistan.

3.1 Research Method

This micro study takes a mixed method research approach to assess the impact of MBS on female mobility. This research approach was deemed important where a contemporary phenomenon is being researched and ask questions beginning with 'what', and leading to 'how' and 'why' (Yin, 2009). The quantitative approach will help to rate the service quality indicators, while the qualitative questions will help to explore a deeper understanding of social phenomena that would not always be obtained from purely quantitative data. The qualitative research offers rich descriptions of the social world, whereas quantitative research is less concerned with such detail (Denzin and Lincoln, 2005). Given the nature of this research and its focus on in-depth analysis of the MBS, a mixed method approach was deemed most appropriate. This approach helped to examine in detail whether the provision of MBS improved the travel experiences of female students, workers and casual travelers in the twin cities.

3.2 Sampling

This technique involves selecting certain units or cases based on a specific purpose rather than random selection (Tashakkori & Teddlie, 2003a). This technique is used when the researcher wants to select a purposive sample that represents a broader group of cases as closely as possible or to set up comparisons among different types of cases (Bryman, 2014). The purposive sample helps to target individuals/cases with specific characteristics (Silverman, 2008). When developing a sample using a purposive technique, researcher uses special knowledge and/or expertise about its target group to select cases.

In this research, the target population was the female passengers of the Pakistan Metro Bus System (PMBS), Islamabad-Rawalpindi. A sample size of 150 female passengers was extracted to study change in mobility before and after the provision of MBS in the twin cities (see table 3.1). Three major groups of female passengers were identified: (a) working women (b) students, and (c) casual travelers. The 'working women' group was further divided into two categories based on age bracket, below and above 30 years. The purpose behind the categorization of female passengers was to get clear patterns of different perceptions and experiences based on their differences in commuting purposes. The commuting purpose and age factor may affect the travelling experience and perception of female passengers. The three categories of female passengers have different commuting purposes and it may lead to differences in their perceptions and experiences. Apart from this, the age factor may also affect respondents' views and experiences such as the elder female may feel less concerned about the safety at stations and buses as compared to younger female passengers.

Using a semi-structured interview questionnaire, 150 participants were interviewed at the MBS stations and/or inside the bus during travel from five MBS stations, including (a) Saddar station, Rawalpindi, (b) Chandni chowk, Rawalpindi, (c) Faizabad station, Rawalpindi, (d) Agha Shahi 9th Avenue, Islamabad, and (e) Jinnah Avenue, Islamabad. These stations were selected based on the highest numbers of ridership on average. According to PMA these stations were the busiest stations of passenger's daily ridership in the twin cities. The five stations were selected to cover the maximum variations among the perceptions of female commuters. The study manly focuses on the qualitative approach and use quantitative approach to support the qualitative part. Therefore it took 150 handful sample of female commuters and categories it into parts based on age and commuting purpose to cover all the different patterns of perceptions.

Table 3.1 Sample Size

Target Population	Passengers of Pakistan Metro Bus System (Islamabad-Rawalpindi)					
Sample Frame	Female Passengers of PMBS					
Sample Size			Saddar, Rwp	Chandani Chowk, Rwp	Faizabad, Rwp	Agha Shahi Avenue	Jinnah Avenue
	Working women	Below 30 Yrs	5	5	5	5	5
		Above 30 Yrs	5	5	5	5	5
	Students		10	10	10	10	10
	Casual Travelers		10	10	10	10	10
	Sub total		30	30	30	30	30
	Total		150				

3.3 Data Collection

This study conducted in-depth interviews from 30 respondents at each selected station. Interviews were conducted at morning, afternoon and evening time to cover the respondents of all the three categories. The respondents were approached at PMBS

stations and accompanied them to conduct interviews during travel after seeking consent. The interviews were recorded with written and audio recording depend on the consent of the respondent. Most participants were comfortable with audio recordings, while some were hesitant to allow audio recordings. The recording was used to improve accuracy and detail in transcripts and for the use of verbatim quotes.

Piloting was carried out before starting the fieldwork so that any limitations could be addressed or desirable changes could be made in advance. The aim of piloting was to test the interview questionnaire, to measure the time required to complete a single interview, and to see if it allows the researcher to collect the required data.

The six weeks of data collection, the fieldwork, was successfully concluded in May 2017 with 150 interviewees in total. It was sometimes quite difficult to convince female passengers for interviews at stations because most of them were either going to work or education. In order to overcome this challenge, the researcher started to conduct interviews while travelling with them inside the buses. All the interviews were conducted by the researcher herself. Each interview took around 15-20 minutes to complete with a few exceptions where it took longer than 30 minutes.

The interview questionnaire (*see Annex 2*) was formulated based on the indicators in such a way to answer the research questions raised in this study. The selected indicators were to measure the overall utility of MBS for women passengers. The accessibility, reliability, tangibility, assurance and responsiveness were the main indicators which covered the overall utility of public transport system. These indicators or themes were further breakdown into sub-themes to measure the responses of participants (see table 3.2).

Table 3.2 Indicators to Measure the Overall Utility of MBS for Women Passengers.

INDICATORS	WHAT TO MEASURE (Before and After MBS)
Accessibility	▪ Accessibility of bus station ▪ Connectivity to destination ▪ Timings to passenger convenience ▪ Affordability
Reliability	▪ Waiting time at bus station ▪ Journey time (reach destinations) ▪ Arrival of bus at schedule time
Tangibility	▪ Seating space at stop ▪ Seating space during peak hours ▪ Elevators are working properly
Assurance	▪ Safety at bus station ▪ Safety inside buses ▪ Behavior of staff
Responsiveness	▪ Information of buses at bus stops ▪ Information about change in schedule ▪ Complaints
Economic Opportunity	▪ Increase in female participation in economic activates
Ease in Using Automated Systems	▪ Use of Automated token system ▪ Use of Automated exit and entry points ▪ Use of Elevators

'Accessibility' refers to the easy access of public transport to all categories of commuters. A public transport system scores high in accessibility when its route covers large residential neighborhoods. The influential zone in term of accessibility is defined as 1 km or the walking distance from home to station. To measure the ease in accessibility of MBS and to compare it with other public transport in term of ease in accessibility, the study broke the indicator accessibility into distance of home or desired destination from nearest station, route connectivity, the way to reach station and desired destination, timings to passengers' convenience and affordability. The study asked question on every subtheme and in the light of respondents' answers, it analyzed and discussed the ease in accessibility of MBS and compare it with other public transport facility available.

The indicator of 'reliability' covers the subthemes of arrival of buses at stations at schedule timings, the time taken to get to desire destination and information about buses timings. The reliability of transport systems especially the arrival of buses at station on schedule time and time taken to get to desired destination affects the travelling purpose of commuters. The respondents were asked question related to their experience of waiting for bus at stations and the time taken by buses to get to their desired destination and analyzed their satisfaction level of services provided by MBS and also compared it with their past experiences.

'Tangibility' describes the physical facilities. To measure the tangibility of PMBS, questions related to the elevators, escalators, air conditioning, Wi-Fi facility, cleanliness and maintenance of bus stations and buses, seating space at the PMBS stations and inside buses and availability of comfortable seating system were asked from the respondents. During the interviews, the respondents were probed to compare the PMBS with other transport facilities.

To measure the 'assurance', questions on safety and security at PMBS stations and inside buses, and behavior of staff with female commuters were asked. The questions under this theme were mostly related to their past or current experiences related to safety and security of female commuters. Participants were probed to compare their views and experiences before and after PMBS.

The 'responsiveness' indicator refers to the information and response of PMBS staff towards passengers' complaints. To measure the responsiveness, respondents were asked

to share their views about the information provided about the schedule of buses at PMBS, information about change in schedule, and response of staff solving registered complaints.

The 'economic opportunity' indicator measures whether the provision of PMBS has brought any change in improving the economic opportunity for female population. The question was asked to explore whether the provision of the Metro Bus service in the twin cities offers income generating opportunities for female populations.

In order to examine the 'ease in using automated system' installed at the PMBS stations, the respondents were asked questions related to the use of automated token system, use of automated exit and entry points, and ease in using of escalators and elevators. This indicator basically measures whether the female commuters can easily use the automated facilities or face any kind of difficulty in using these facilities.

All these indicators were set to explore the perceptions and experiences of female commuters before and after the provision of PMBS. Since this study aims to measure the 'impact' on female mobility, respondents were asked to share their past experiences (or current experiences) of other transport facility and compare it with the service provision under PMBS. The analysis based on these responses will help to gauge the extent of impact of Metro Bus on female mobility in the twin cities.

3.4 Data Analysis

The primary data collected, from the fieldwork in Islamabad and Rawalpindi, were consisted of questionnaires, audio recordings and field notes. The raw data were then transcribed and coded manually according to the themes and sub-themes. To analyze the

data, Ritchie and Lewis's (2003) 'thematic framework' method was used which requires three forms of activities: (a) *data management*, in which the raw data were reviewed, coded and sorted; (b) *descriptive accounts*, in which the researcher identified key dimensions, calculated the range and diversity of phenomena; and *exploratory accounts*, in which explanations were built to describe and articulate the collective perceptions and experiences of the respondents in a meaningful way.

To collect the required primary data through interviews, a semi-structure questionnaire was developed. The questionnaire was developed in line with the themes and subthemes of this research. The whole questionnaire was categorized into six key themes. Under each theme, questions were developed on sub-themes. Semi-structured questionnaire proved to be a beneficial tool in conducting interviews as it helps to collect detailed information about interviewees' profile, perceptions, values and opinions. It also helps the interviewer to be flexible in asking questions and conduct interview discussion in a flow. Further, interviewer was able to probe and challenge interviewee in such a manner to be able to obtain and record rich and in-depth details.

The questionnaire was then piloted and finalized after pre-fieldwork visits and in consultation with the research supervisor. Every questionnaire was codified with seven digits coding system. The first two digits indicates the 'group category' of respondent, the third and fourth digit indicates the 'station' of respondent and the last three digits indicates the 'serial number' of respondents. This coding system on every questionnaire helped to differentiate the respondents based on their group, station and serial number. During the interviews, based on this coding system, it became easy to complete 150 sample according

to groups (i.e., working women, student and casual traveler) and metro bus stations (i.e., Saddar, Chandani Chowk, Faizabad, Agha Shahi Avenue and Jinnah Avenue). It also helped in transcription and coding of complete data.

During the data collection process, every respondent was given a consent form which was duly signed. The consent form and the data from every respondent was kept confidential according to the agreement made between the researcher and the respondent. This research offers anonymity and confidentiality to its research participants. Respondents' contact details and identity was not revealed at any stage of this research. It was deemed essential to maintain individual privacy throughout this research. Hence, names, contact details and other personal information of subjects are kept anonymous. Consent was taken from every respondent prior the interview and briefed about the main themes of the research at the start of each interview.

In this process, permission to record the interview using an audio device was also part of the consent. Recording was used to promote accuracy. However, a few respondents did not feel comfortable hence field notes were taken to record their responses. Each audio recording file was then transferred to a safe location, and a status file was maintained to track the fieldwork progress. All the interviews were conducted in Urdu language for the easy communication, understanding and explanation of responses. The raw data were then translated into English before transcribing and coding of data. During the translation process, complete care was taken that the exact meaning of the responses should remain the same.

Table 3.3 Thematic Codes

THEMES	SUB THEMES	CODES
Accessibility	Time Taken to Reach Nearest Station	2.11
	How to Reach Nearest Station?	2.12
	Route Connectivity to Desired Destination	2.13
	Maximum Route Coverage	2.14
	Use of Other Transport Facility	2.15
	Ease in Accessibility	2.16
Automated System and Tangibility	Difficulty in Using Automated System	3.17
	Working of Escalators /Elevators	3.18.A
	Difficulty in using Escalators / Elevators	3.18.B
	Working of Air Conditions	3.19
	Working of Wi-Fi	3.20
	Cleanliness and Maintenance of Stations	3.21
	Cleanliness and Maintenance Inside Buses	3.22
	Seat Availability at Stations	3.23
	Seat Availability Inside Buses	3.24
	Comfortable Seating System	3.25
Affordability, Reliability and Responsiveness	Affordability	4.26
	Waiting time for Arrival of Buses	4.27
	Time Taken to Desire Destination	4.28
	Information System Regarding Bus Schedule and Road Map	4.29
	Information Regarding Change in Fare and Schedule	4.30
	Registration of Complaint	4.31
Safety and Assurance	Safety at Stations	5.32
	Safety Inside Buses	5.33
	Satisfaction with the Safety Measures Taken	5.34
	Behavior of Staff	5.35
	Comparison of MBS with Other Public Transport in term of Safety	5.36
Ease in Mobility	Improve Economic Activity	6.37
	Improve Mobility for Social Activity	6.38
	Ease in Mobility	6.39.A
	Freedom from Dependence on Male Member of Family	6.39.B
	Travel without Male Companion	6.39.C
	Ease in Market Access for Grocery	6.39.D

After the translation process of the interviews, the interviews were then transcribed for coding process. After transcription, the data were coded according to themes and subthemes (see table 3.4).

The evaluation criteria of 'trustworthiness' of qualitative research was also ensured in this research. Trustworthiness is made up of four criteria: credibility, dependability, conformability, and transferability. To make this research 'credible', it was ensured that the

findings were derived from the primary data collected from the fieldwork. Technique of data 'triangulation' was employed, which involves using more than one source of data to validate findings. Data triangulation helped to enrich the quality of information collected and increased confidence in the research findings.

In addition to the qualitative thematic analysis of data thematically, the study analyzed the quantitative data collected about the ratings of services. In addition to the thematic framework, 'content analysis' approach was used to interpret the textual material. The data is presented in percentages, averages and in ranges. The application of content analysis comprised of three distinct approaches: conventional, directed, or summative. In conventional content analysis, coding categories are derived directly from the text data. The directed approach starts with a theory or relevant research findings as guidance for initial codes. While, a summative content analysis involves counting and comparisons, usually of keywords or content, followed by the interpretation of the underlying context (Hsieh & Shannon, 2005). This research expedites the 'summative content analysis' to evaluate the impact by examining the change in female perceptions and experiences about public transport facilities before and after the provision of Metro Bus service in Islamabad and Rawalpindi. Since, content analysis mainly describes textual material in quantitative terms (i.e., what), use of thematic analysis of interview discussions will help to provide rich description of patterns (i.e., why and how). A combination of such a qualitative and quantitative approach is known as one of the ways of using triangulation, which according to Flick (2010, p. 405), is "used as a strategy of improving the quality of qualitative research."

Table 3.4 Activities and Timeline

ACTIVITIES	TIMELINE						
	Oct 16 to Dec 17	Jan 17 to Feb 17	Feb 17 to Mar 17	Apr 17 to May 17	May 17 to June 17	June 17 to Aug 17	30 Aug 2017
Identification of Research Area							
Literature Review							
Developing Research Proposal							
Submission of Research Proposal							
Research Proposal Defense							
Piloting							
Fieldwork/ Data Collection							
Data Transcription							
Preliminary Data Analysis							
Thesis Write-up							
Thesis Submission							

To ensure the 'dependability' of this study, auditing approach was adopted where all records related to the research process which includes problem formulation, selecting research participants, data collection, notes related to fieldwork and transcription of interviews were held in an organized manner. Trustworthiness of study cannot be assessed if research does not maintain audit trail. Further, the criterion of 'objectivity' was also ensured during the research process. Utmost attention was given to this aspect in such a way that personal values, biasness and interests of the researcher would not influence the findings of this study. Finally, the preliminary findings were analysed further under relevant themes and sub-themes, and thesis write up was completed under the guidance of the research supervisor at PIDE. The research timeline is presented in table 3.5.

4 FINDINGS AND DISCUSSION

This chapter presents the Profile of respondents, research findings and discussion relating to the impact of MBS on female mobility in Islamabad-Rawalpindi. At the end, the chapter presents key findings of this study.

Most of the participants belonged to the lower and/or middle-income class. A large number of passengers own a vehicle at home. Many of them were using that before the service provision of the Metro Bus System in the twin cities. Around 76% of working women (age above 30 years), 64% working women (age below 30 years), 42% students and 54% casual travelers have vehicles at home, but they prefer to use PMBS. When asked why, the majority in all groups indicated satisfaction about safe and comfortable travel. A vast majority also indicated that they have started to use public transport more frequently after PMBS despite having private vehicles. However, to reach the nearest PMBS station, many female passengers need a drop using a private vehicle or other public transport facility. A clear majority of unmarried females also indicated that they now use Metro Bus regularly without any male companion. Table 4.1 presents the profile of the research participants.

The findings and discussion, based on the analysis of the primary data, are arranged under the following themes:

1. Accessibility
2. Automated System and Tangibility
3. Affordability, Reliability and Responsiveness
4. Safety and Assurance
5. Ease in Mobility

Table 4.1 Profile of Research Participants

PROFILE	WORKING WOMEN		STUDENTS	CASUAL TRAVELERS
	ABOVE 30 YY	BELOW 30 YY		
AGE GROUP	31-58 Years	22-30 Years	15-28 Years	18-52 Years
MARITAL STATUS	Married: 96% Unmarried: 4%	Married: 32% Unmarried: 68%	Married: 4% Unmarried: 96%	Married: 36% Unmarried: 64%
EDUCATION	Post Grad 20% Graduates 28% FA/FSc 12% Illiterate 40%	Post Grad 64% Graduates 36% FA/FSc 0% Illiterate 0%	Post Grad 24% Graduates 42%. FA/FSc 20% SSC/Matric 14%	Post Grad 34% Graduates 24% FA/FSc 26% SSC/Matric 6% Illiterate 10%
FAMILY SIZE AND STRUCTURE (*on average*)	7.0 members' family. 86% living in a nuclear family system	5.0 members' family. 92% living in a nuclear family system	5.0 members' family. 84% living in a nuclear family system	6.0 members' family. 70% living in a nuclear family system
SOURCE OF FAMILY INCOME	Employed 84% Business 14% Other 2%	Employed 90% Business 8% Other 2%	Employed 66% Business 14% Other 20%	Employed 72% Business 18% Other 10%
FAMILY MONTHLY INCOME (*on average*)	Min 20k Max 200k Mean: 55k	Min 19k Max 200k Mean: 45k	Min 13k Max 150k Mean: 65k	Min 14k Max 200k Mean: 65k
VEHICLE OWNERSHIP	Yes: 76% No: 24%	Yes: 64% No: 36%	Yes: 42% No: 58%	Yes: 54% No: 46%

Since this research focuses on the impact of Metro Bus System on female mobility in the twin cities of Islamabad- Rawalpindi, the discussion presents the perceptions and experiences of female passengers about the MBS in comparison with other public transport facilities used.

4.1 Accessibility

Accessibility refers to the easy access of public transport to all categories of commuters. A public transport system scores high in accessibility when its route covers large residential neighborhoods. The influential zone in term of accessibility is defined as 1 km or the walking distance from home to station. To assess the ease in accessibility of the Pakistan Metro Bus System in Islamabad-Rawalpindi, this research measures (a) the accessibility or distance to nearest PMBS station, (b) connectivity to desired destination, (c) transport timings to passengers' convenience, (d) and affordability in terms of financial expense. To measure the impact, accessibility of the PMBS was compared with other public transport facilities currently or previously utilized by the female passengers (*see Annex 1a*).

4.1.1 Accessibility to Metro Station

To measure the accessibility to the nearest PMBS station, respondents were asked (question 7, 8, 9 and 13 of the interview) to name the nearest PMBS station, indicate the estimated distance from their residence or place of work, and specify mode adopted to reach the nearest station. The findings suggest that slight majority of students (54%) enjoy easy access – within 5-10 minutes distance – to PMBS station, while it takes 15-20 minutes to most of the working women (58%) and casual travelers (74%) to reach the nearest station. Due to lack of easy accessibility, most of the PMBS female passengers have to take other means of transport – including other public facility or private vehicles – to reach the nearest PMBS station, whereas some reach MBS station by walk.

> "I have to walk for about 15-20 minutes from my home to the Metro Bus station and then again 10-15 minutes from the Metro Bus station to my office." (*A working woman*)

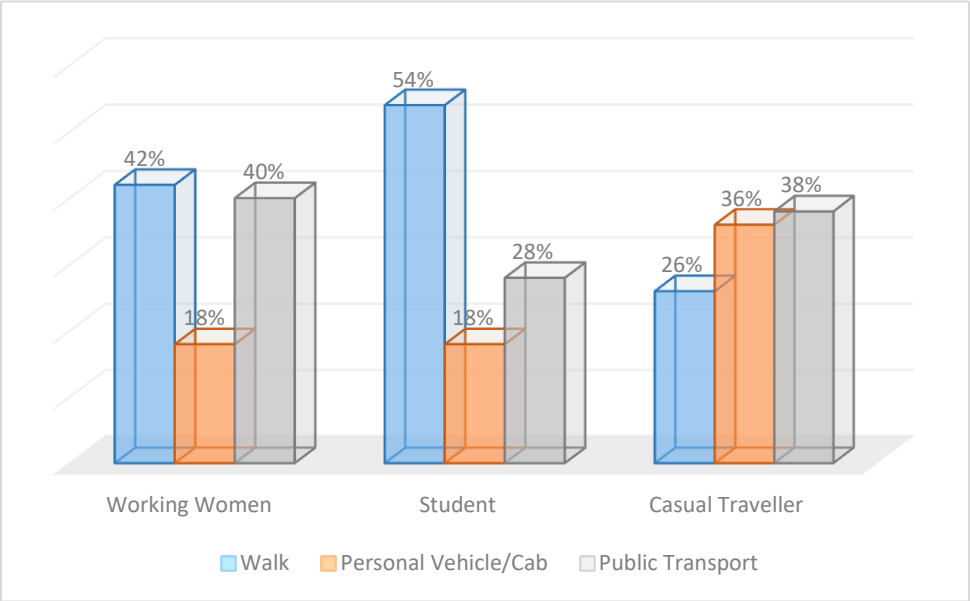
> "Varan transport system [private company] was much better if I compare it with the metro bus. I live in Sector G-11… (For Varan) I had to walk for a minute from my house to catch the Varan bus. Whereas now, I have to travel via van or sometime use taxi and spend around Rs. 100 to reach the Metro Bus station... Then I have to walk for 10-15 minutes from metro station to my office." (*A working woman*).

Figure 4.1 presents the different ways or means used by female commuters to reach to PMBS station from their homes. It shows that majority of commuters get to the stations by walk which means PMBS is easily accessible or at walking distance for majority of the commuters. Some commuters use personal vehicles to reach the metro stations, whereas a number of female commuters still use other public transport means to get to the nearest metro bus stations or from stations to their desired destinations.

> "I work in Melody (civic center, G-6, Islamabad), so I have to either walk for 15 minutes from Shaheed-e-Milat station or take a cab which costs me additional Rs. 50… I still prefer using metro bus because it is more safe and respectable transport than public transport van." (*A working woman*)

> "It would have been more helpful had metro bus route covered more areas. The metro authority should extend the service to more areas to facilitate female who still face the humiliation at other public transport every day." (*A casual traveler*).

Figure 4.1 How to Reach the PMBS Station



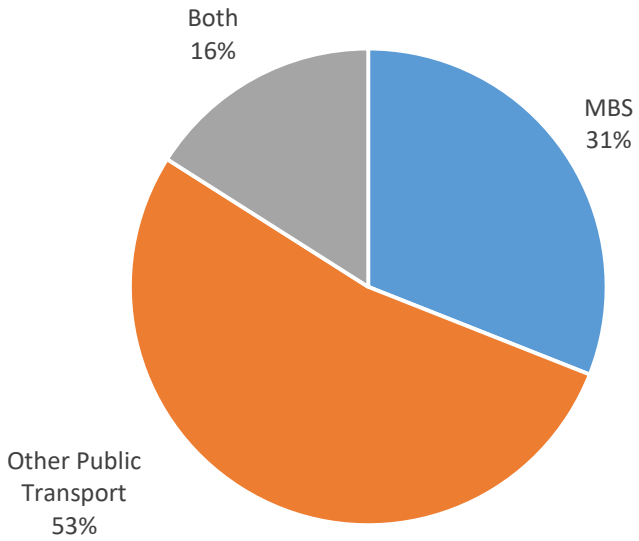
The findings indicate that despite difficulty in accessibility of PMBS, female commuters mostly prefer to travel on it as compared to other public transport facility because it provides a safe, reliable, affordable and comfortable transportation. Whereas other transport facilities are easily accessible but either they are not safe and comfortable or not always affordable. Respondents, especially students, indicated that their parents also encourage them to use metro bus and avoid other public transportation. "My parents believe that metro is much safer and reliable… hence I don't need accompany. My father drops me to the Saddar metro station and later pick me upon my return from college… Many of my college fellows also use metro", said a college student.

While comparing the accessibility of PMBS station to other public transport facilities available, a vast majority of participants indicated that other public transport facilities were more easily available round the clock. Majority of the respondents confirmed that they walk for 5-10 minutes to access a public transport van, Suzuki pickup or taxi. Das *et al.*

(2013) suggest that the influential zone for an easily accessible transport mean is 1-kilometer or walking distance from home to station. Applying this standard to access PMBS in Islamabad-Rawalpindi, the findings suggest that people living in 1-kilometer influential zone or at walking distance are comparatively low than those who have to cover long distance to reach the PMBS station.

Figure 4.2 presents the comparison of ease of accessibility between PMBS and other public transport facilities. Overall, it indicates that 53% of female commuters perceived that other public transport (van or Suzuki pickup) are more easily accessible, whereas 31% believed that PMMB is more accessible as compare to other public transport. Only 16% of female commuters confirmed that both PMBS and other public transport are equal in term of ease in accessibility. Respondents indicated that people living closer the metro bus route can access the facility easily but majority of respondents are living in areas far away or their desired destination are at distance from PMBS station.

Figure 4.2 Ease in Accessibility



Box 1: More Metro Bus Routes and Feeder Buses

I work in a call center in Islamabad. I travel between *BharaKahu* – which is a suburban area of the city – and my office in Blue Area, Islamabad. Metro bus offers travelling only on specific route from Saddar to Secretariat, while many others like me still have to travel on vans, pay more for low standard service and face social difficulties too.

It is unfair that I, along with many other female travelers, still facing the same problems while government has turned a blind eye to our situation. Government should start new metro bus routes or start feeder buses like in Lahore. (*A working woman*)

When probed what can be done to improve the accessibility of passengers, a number of participants demanded feeder buses – like in Lahore and Multan MBS – to facilitate the commuters. "Shahbaz Sharif promised feeder buses for the people of Islamabad and Rawalpindi, but he gave that facility to Lahore and Multan first… Feeder buses are essential to help people [PMBS passengers] of Rawalpindi to access the metro station, especially for those who live or work far from the metro bus route", said a casual traveler. Similarly, a young student expressed her experience, "I have to beg my brother or father every morning to give me a drop at the Chandni Chowk metro bus station so that I can reach my university (in Islamabad) on time… it would be more convenient if I have access to a feeder bus on walking distance."

4.1.2 Connectivity

To measure the connectivity, participants were asked (question 10 and 11 of the interview) to compare the route connectivity and route convenience to get around different destinations of PMBS and other public transport. The findings of the study suggest that majority of travelers get to their desired destinations – mostly home,

education or work place – via Metro Bus, however the interconnectivity of other public transport facilities were considered more reliable if travel is required for other parts of the city. Research participants confirmed that PMBS route covers limited areas of the twin cities due to which people have to take next journey on other public transport facility to get to their desired destinations. Again, a number of respondents demanded feeder buses and opening of more routes of the metro bus so that the public can reach other than limited destinations.

As compared to PMBS, a vast majority of respondents from all three groups of participants suggested that other public transport facilities are more interconnected. In term of coverage of areas or destinations, the findings suggest that a large percentage of respondents say that PMBS route covers limited area and destinations since other public transport covers almost all areas of the twin cities. "I mostly use metro bus to visit the Centaurus Mall. My daughter uses metro bus every day for her university… but we have to use our own car or Careem (cab service) if we have to go to other parts of the city… The coverage (of metro bus) is obviously limited and we hope the Chief Minister will expand the metro bus service to other parts of the city soon", said a casual traveler.

4.2 Automated System and Tangibility

Operations and maintenance is one of the biggest challenges for any project to sustain its services. This section presents findings and discussion related to respondents' perceptions and experiences about tangibility and use to automated systems installed at the metro bus stations and inside the metro buses.

4.2.1 Tangibility

Tangibility refers to the facilities such as the elevators, escalators, air conditions, free Wi-Fi service, cleanliness and maintenance of stations and buses, and seating space at the metro stations and inside the metro buses, and availability of comfortable seating. The respondents were asked (questions 14 to 22 during interviews) about the working of elevators, escalators, Wi-Fi, air-condition, cleanliness at stations and inside buses, availability of seats at stations and inside buses and about comfortable seating system.

The findings indicate that overall PMBS scores high (above 90%) against tangibility. Most of the respondents from all three groups were satisfied with the available facilities at the bus stations and inside buses, and indicated that the facilities were well maintained and working properly. There were zero complaints about the working of the air conditioning inside the buses, while a few participants highlighted issues related with the working of elevators and escalators.

This high satisfaction of passengers about the air conditioning, elevators and escalators was mainly due to their past or current experiences about other public transport which lack all these facilities. Respondents indicated that it was very difficult for them to wait for van or Suzuki along road sides where there were no seating space and shelter from rain and sun. Inside other public transport they have to bear heat during summers. They can use elevators and escalators to reach station. Passengers can now travel in an air-conditioned public transport system.

> "Unlike other public transport, the metro bus is a respectful transport facility… I used to wait for the van for hours, mostly along road side with males all around and dust… sometimes in direct sunlight and rain… I now

> prefer to take Metro bus despite that I have to walk for 12 minutes to reach this station." (*A working woman*)
>
> "I enjoy the air condition a lot. It is too hot outside… What else you want? I enjoy a comfortable travel in just Rs. 20… I remember travelling in non-AC vans with disgusting seats and smell… Cannot think of using that again." (*A working woman*)

Interestingly, only a small number of participants were actually using the free Wi-Fi available during travel. A large number of commuters were not using it. So when asked whether the Wi-Fi works properly inside the bus during travel or not, most of the respondents did not answer since they never used this facility. More students (around 36%) than working women (14%) and casual travelers (24%) used Wi-Fi, of which a majority confirmed that Wi-Fi works properly.

When asked why passengers don't use free Wi-Fi, many respondents indicated that they already have a 3G connection, some indicated that they don't trust free Wi-Fi service, while others say they cannot use while standing in the bus, and a few were hesitant to use mobile phone in public. A small group of respondents, mostly casual travelers, either did not know about the availability of free Wi-Fi or had no cell phones with Wi-Fi function.

> "I don't need to use it (the free Wi-Fi) in public. I already have a 3G package from my mobile service provider. I mostly use it at home or at my college." (*A college student*)
>
> "Really? I did not know about it (the free Wi-Fi service). Let me get connected." (*A casual traveler*)
>
> "I don't use it usually, especially when I am standing and don't find a seat (inside the metro bus)." (*A working woman*)

4.2.2 Cleanliness and Maintenance

Cleanliness and maintenance of public transport system is another indicator to evaluate the tangibility. After more than three years, since the metro bus started its operation in the twin cities, this research explores whether PMBS stations and buses are clean and well maintained.

The participants were asked (question 18 of interviews) about their views and experiences about the cleanliness at the metro bus stations. The content analysis indicates excellent conditions at the metro bus stations. A clear majority from all the three groups of respondents confirmed this. Around 78% working women, 68% students and 74% casual travelers considered excellent cleanliness at the metro stations. Similarly, 20-30% of respondents from all groups ranked the cleanliness conditions as good. A few interviewees thought it is normal, while there was not a single respondent who had complaint in this aspect.

> "O yes! It is very clean. I never found any litter at the metro bus station or inside the bus. People sometimes throw things on the floor such a juice pack or plastic bag, and sometimes a toffee wrapper, but the (metro bus) staff is very efficient to clear that." (*A casual traveler*)

> "It is good, but not up to the mark… I would blame people (passengers) for this, not the staff. The stations and buses are well maintained. I think they clean it every day, but people throw litter … some young visitors write their names inside the bus or on the walls of the station. Such people must be fined." (*A university student*)

The compression of cleanliness at stations with other public transport was not possible because according to the respondents there were no proper station system exist at other public transport facilities.

Box 2: Nice and Clean Environment, but Lacks Interconnectivity

I work in a travel agency… I feel good while travelling on the metro bus every day. It is a nice and clean environment, both at the station and inside the bus. Even driver and staff are there standing in clean uniforms. It is much better than other public transport services, but the route coverage is very limited. It suits me because my office is in Saddar Rawalpindi, but it may not suit everyone. So, people are bound to take a ride on other public transport services… whether they like it or not. (*A working woman*)

Continuing the interview discussions, the participants were asked (question 19 of questionnaire) about their views and experiences about the cleanliness inside the metro bus. Again, the content analysis indicates excellent to good cleanliness conditions inside the metro buses. Around 94% working women, 90% students and 96% casual travelers rated the cleanliness inside the metro bus as good and excellent. "I am travelling on metro bus since it was started… It is still like new. Seats are clean. Windows are clean. The floor is clean. The poles are clean… I would give the credit to the (metro bus) staff and its management. They are very keen in maintaining everything", said a working woman. Similarly, a young doctor told "I used to travel on taxi for work. It was expensive and in poor condition… Now I travel on metro bus. Although I have to walk a little to reach my hospital (PIMS, Islamabad), but it is a clean ride, air conditioned and cheap."

When participants were asked to compare the cleanliness inside the metro bus with other public transport they used, a clear majority indicated poor to very poor conditions of other public transport facilities. Around 70% working women, 56% students, 72% casual travelers indicated poor to very poor conditions of cleanliness in other public transport facilities. When probed if this (cleanliness) is the main driving factor for passengers' preference for metro bus, only a few said yes, while most of them valued safety and reliability.

> "Who doesn't like clean environment? I do, but this is not the only reason I use metro bus… It is safe. It is reliable." (*A working woman*)

> "Private vans are disgusting. Their seats are grimy and door handles are filthy. There is sweating smell inside the van and you cannot avoid it… Metro buses are so clean. I love travelling on it." (*A university student*)

4.2.3 Seating Space

There is a common sitting area at the metro bus stations and a designated seating area for females inside the metro buses. Inside the bus, there are around 12 seats and a small area where females can stand, while holding the pole or plastic handles. When respondents were asked about their views about the seating space (question 20-22 of interview questionnaire), a clear majority indicated issues with seating space inside the metro bus. Participants indicated that there was limited reserved seats for female passengers as compared to the space allocated for male passengers. Around 58% of working women, 76% students, and 86% casual travelers expressed dissatisfaction and indicated that they face a lot of problem while riding the metro bus, especially during peak hours.

> "The seating space is too small. A lot of female passengers ride these buses every day, but there are only 12 seats available for us, and a small area to stand. Most of us have to travel the whole journey while standing." (*A university student*)

> "This is what bothers us (females) a lot… Sometimes the male compartment is empty, but we cannot use it. Sometimes there is no space for standing, so we have to cross the yellow line and stand just next to the exit door or front glass, which can be extremely dangerous… The driver often yells at us to mind the line, but there is no space for us otherwise." (*A university student*)

A majority of female passengers indicated that they do not find seats during morning, afternoon and evening times if they start their journey from any stop other than Saddar or Pak Secretariat (both ends). In addition to congestion problem, most of the participants also highlighted the lack of proper separation of female-male compartments. During rush hours, the male passengers sometimes get into the female side and even sit on the reserved seats for female passengers, or some young males try to stand just next to females.

> "I am a regular user of metro bus system since it has been launched… I hardly find a seat inside the bus… In most journeys, I have to remain stand throughout my travel from home to college and from college to home." (*A college student*)

> "Space is an issue. Although there are CCTV security inside the buses, but males standing just next to me always bother me a lot. There is no physical (female-male) separation of compartments… There should be!" (*A working woman*)

Probing what can be done to overcome this problem, a number of respondents demanded more seating space with a clear physical separation of compartments and running female

only metro busses after every interval during peak hours. “I would not even mind sitting on the floor in a female only (metro) bus, but cannot do this right now even I am too tired… There are males everywhere, watching and observing us all the way… a female only bus would be a blessing”, said a working woman. Similarly, a young female college student said “The (metro bus) authority should increase the reserved seats for female passengers or run female only buses during peak hours at least.”

When probed if females finding a seat in the metro bus is more problematic than other public transport, respondents believed that it is difficult to find a seat in metro bus than other public transport facility. Exploring the reasons behind this, the findings suggest that the passenger can only ride other public transport when seat is available whereas in the metro bus passengers can ride even if seats are not available. In the latter case, they don’t have to wait for long duration of time such as for a van with empty seats.

In addition to the above, on the question about seating space at the metro bus stations, around 49% of passengers said they find seat at stations while waiting for bus, and 46% said they do not need a seat at the station because the buses arrive quite frequently; after every three minutes. On the question about comfortable seating system, a clear majority (84%) of respondents said that seats inside the metro bus are comfortable.

4.2.4 Use of Automated System

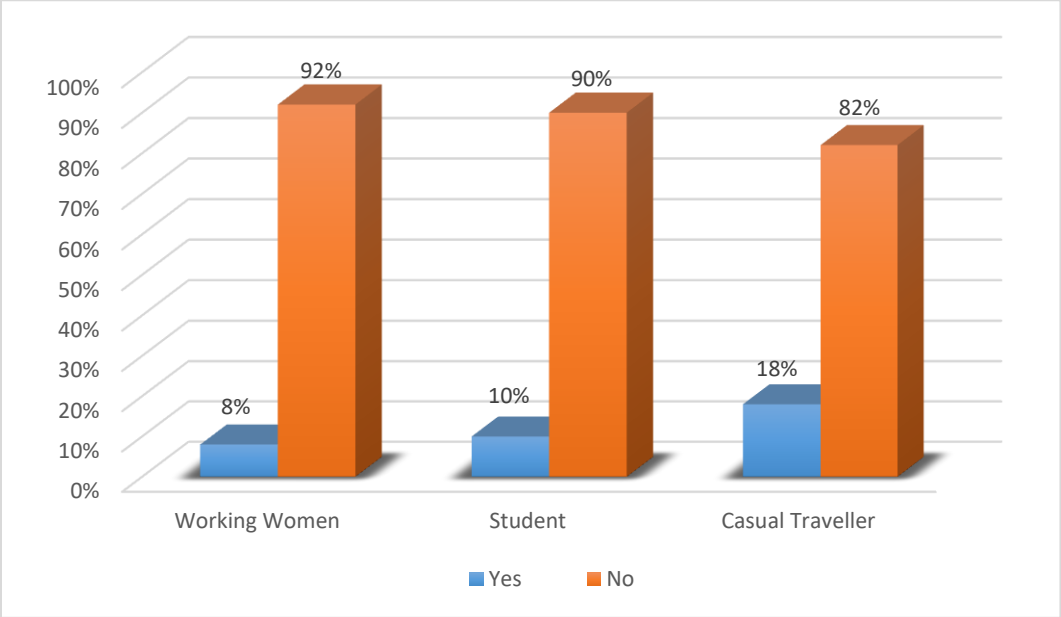
The automated system refers to the use of electronic technology such as the token system, use of token at the automated entrance and exit gates, and use of escalators and elevators at the metro bus stations. The installation of technology at the PMBS stations was meant to improve the services and make the travel experience more effective and efficient. The

research participants were asked (questions 14 and 15 of interview) about the use of automated systems separately. The overall findings in this context suggests that most of the respondents, above 90%, were able to use automated facilities easily and indicated that the electronic technology was working properly at the stations. In contrast, only a few respondents indicated difficulties using an automated ticket system, but added that staff at the metro stations were quite helpful. “I always find it difficult to use my token (ticket) at the entrance and exit gates, but staff is always there to help me pass through”, said a casual traveler.

However, a large number of respondents also highlighted that they never used the elevators and Wi-Fi, and hence cannot be sure if that facility works properly or not. A small number of participants, mostly regular travelers from all groups, indicated that they initially face difficulty in using the automated token and escalators, but now they don’t experience any difficulty. “It was a bit difficult at the beginning, but later I learnt once I went through it (the entry/exit gates) a couple of times… Metro bus staff is always there to help you, so you won’t hear anyone saying they bought the ticket but were not able to ride the bus”, said a university student. The behavior of staff members at station and during travel also creates concerns for passengers. Female passengers prefer technological solutions at mass transits and replace staff with automated machines at stations and in buses (Tharasher & Schnell, 1974). The findings suggest that there was proper deployment of trained staff at the entry and exit gates of the metro bus station to guide and help passengers. A working woman said “Initially I faced difficulty at the entrance and exit gates… (but) there were female staff members who guided me how to use the token… the

fixed token system is very good initiative from metro bus. There is no conductor (ticket collector) inside the bus."

Figure 4.3 Difficulty in Using Automated Token



Overall, findings indicate that the passengers from all three groups were quite satisfied and comfortable with the automated electronic system and considered it a good initiative from PMBS (see annex 1b). Figure 4.3 shows the difficulty in using the automated token system at the PMBS. More than 90% of working women and student were comfortable using the automated system, while around 82% of casual travelers faced no difficulty. Around 18% of casual travelers experienced some difficulty, perhaps because they were not frequent riders of metro bus while working women and students were regular travelers.

4.3 Affordability, Reliability and Responsiveness

Affordability in the context of public transport refers to the ability of passengers to pay out-of-pocket for a journey to work, education, market or to access other destinations for social activities. Affordability of public transport impact the mobility of common man, especially

from a poor and low-income family to a large extent. Absence of an affordable public transport system constrains the choices of the public for job and education to those which are accessible at walking distance. An expensive public transport may limit the mobility, especially of females. Similarly, reliability such as waiting and travel time, and information about the schedule of public transport matters for commuters. A reliable service enables the commuters to plan their journey and reach destination on time. Finally, responsiveness in the context of public transportation signifies how responsible and customer friendly the service is. In this section, findings and discussion is presented on affordability, reliability and responsiveness of PMBS in the twin cities (see Annex 1c).

4.3.1 Affordability

To examine the affordability, the respondents were asked (question 23 of interview questionnaire) about the affordability of public transport system, both PMBS and other public transport options. A consensus finding suggests that the PMBS provides an affordable public transport system which was previously absent in Pakistan.

Table 4.1: Affordability of Metro Bus versus Other Public Transport Facilities

	RESPONDENTS		
	Working Women	Student	Casual Traveler
Affordable Metro Bus	Yes 100%	Yes 100%	Yes 100%
Affordable Past/Other Transport Facility	Yes 70% No 30%	Yes 60% No 40%	Yes 62% No 38%
Metro vs Past/Other Public Transport Facility	100% say MB is more affordable than other Public Transport	100% say MB is more affordable than other public transport	100% say MB is more affordable than other public transport

When asked similar question about the affordability of other public transport facility previously or currently used, a majority believed that it is affordable, while a minority group indicated that other public transport is not affordable. When probed reasons behind

the response of the minority group, the findings suggest that respondents were mostly indicating private cab service as other public transport facility. Nevertheless, when respondents were asked to compare the affordability of metro bus versus other public transport facilities, a consensus response came up in favor of PMBS (see table 4.1). Majority of respondents said that though other public transport is affordable too, but as compared to PMBS, other public transport is bit costly and also do not provide facilities which PMBS provides in just RS. 20.

> "The van conductors and drivers ask for whatever they want and we either have to give it or argue with them every day… This does not happen in metro bus. We know it is a Rs. 20 for one-way travel." (*A casual traveler*)

> "Van or Suzuki (pickup) is affordable, but definitely not cab or riksha. In fact, van is also sometimes expensive if you have to travel for a longer journey within the city… Metro bus is certainly much cheaper and comfortable than any other (public transport) service." (*A working woman*)

> "Metro bus is undoubtedly a great relief for me, both in terms of time and money... I enjoy my rides to college every day. My elder sister used to travel on private cab for her college, which was expensive and lacks security and cleanliness." (*A college student*)

The government provides a subsidized journey to passengers. Majority of respondents considered that although other public transport is not always expensive, but as compared to other public transport PMBS is more affordable. Apart from this a section of respondents said that the other public transport may charge less but they do not pay the worth of that fare. They do not provide a safe, reliable and comfortable transportation like people enjoy in the metro bus which provides all facilities in cheap fare.

Box 3: Experience of PMBS versus Other Public Transport

I am a Personal Assistant in the Ministry… Before the metro bus, I used to spend around Rs. 15,000 every month on taxi fares. Travelling every day with a stranger in the cab, which is mostly dirty and smelly was awful. And it was expensive too… It was not affordable at all, but I had to do it to avoid (other shared) public transportation… If I were a man I would have bought a motorbike or travelled through van to save money... Thanks to Metro service, I now enjoy a decent travel and save a good amount of money." (*A working woman*)

It is important to note that a significant number of female passengers were using cab or riksha for their daily commuting purpose, either to reach the metro station or to their desired destinations from the metro station. A number of respondents, especially working women, were paying thousands of rupees per month in addition to the metro ticket to complete their journeys. Hence, most of them demanded feeder buses and opening of new routes of metro buses in the twin cities.

The analysis also suggests that the affordability factor was linked with the safety, reliability and comfort female passengers enjoy at the PMBS. "It (metro bus) is just not cheap, it is also safe and comfortable", said a working woman. Moreover, some female passengers indicated that they had to quit their jobs or discontinue their training/education because of the lack of a respectable public transportation system in the twin cities, but they now continued after the start of PMBS.

4.3.2 Reliability

The reliability refers to the frequency of arrival of the metro buses, time taken to complete the journey and information mechanism about bus schedule, route map and

information related to bus schedule and fare. The respondents were asked about the frequency of arrival of buses, availability of proper information mechanism, about routes and time taken by buses to get to desired destinations (question 24 to 27 of interview).

Table 4.2: Waiting Time for Metro Bus versus Other Public Transport Facilities Used

	RESPONDENTS		
	Working Women	Student	Casual Traveler
Waiting Time for Metro Bus	3 minutes: 98% 5 minutes: 2%	3 minutes: 99% 5 minutes: 1%	3 minutes: 98% 5 minutes: 2%
Waiting Time for Other Transport Facility – Van/Suzuki/Can/Careem	5 minutes: 30% 10 minutes: 58% +10 minutes: 12%	5 minutes: 40% 10 minutes: 50% +10 minutes: 10%	5 minutes: 25% 10 minutes: 10% +10 minutes: 65%

Exploring the waiting time female passengers experience while using the metro bus, the findings suggest that a vast majority get place in the metro bus within three minutes, while a few sometimes have to wait for a bus with space during peak hours (see table 4.2). "I hardly wait for two minutes… by the time I reach the bus gate from the entry point I find a bus there… and even if I miss one, I am confident to catch the next bus in just three minutes", said a student. The respondents from all three groups indicated that the PMBS is a highly reliable mode of public transport as compared to other public transport options. The consensus response indicated that the metro buses come on their schedule and passenger usually do not have to wait for the metro bus for more than three minutes.

> "My daughter is admitted in PIMS hospital and I have to visit her every day… I leave my car and take the metro bus. It was not possible before metro bus to travel between the twin cities this frequently and hassle free… Thanks to the government, it is now not only convenient, but fast and reliable as well." (*A casual traveler*).

Female passengers who previously or currently using other public transport indicated that they have/had to wait for more than 10-20 minutes to catch a van, and even when the van comes they have to look for a space to fit in. People fear more during their waiting for vehicle at station or their journey from and to home than during travelling. Shen at el in his study found that 42% of incidents either take place near vicinities or 36% at transit stations during waiting (Smith, 2008). Some respondents highlighted that the lack of proper stations and designated seating system and uncertainty in van's arrival create more fear and sense of insecurity.

> "There is no van station system in other public transport. You have to stand at the roadside and wait for the van to come… It used to be very tough moments for me to wait for the van, especially when I was alone… We (females) quite often face eve teasing from male fellows waiting for the van standing nearby or passing through… Thanks to the Chief Minister (Punjab)… I don't face such disturbing experiences anymore." (*A university student*)

A clear majority of the respondents indicated that before metro bus service they had to pay more money to travel on other public transport, and then they had to make a journey of few kilometers in hours. The respondents highlighted that other public transport service is a hassle as compared to metro bus. The commuters have to change more vehicles and pay for every new journey. Apart from affordability, changing of vehicles to reach desired destination create a sense of insecurity and discomfort, and often make females more vulnerable to harassment and victimization. In contrast, PMBS provides a safe, secure and reliable transportation in just RS. 20.

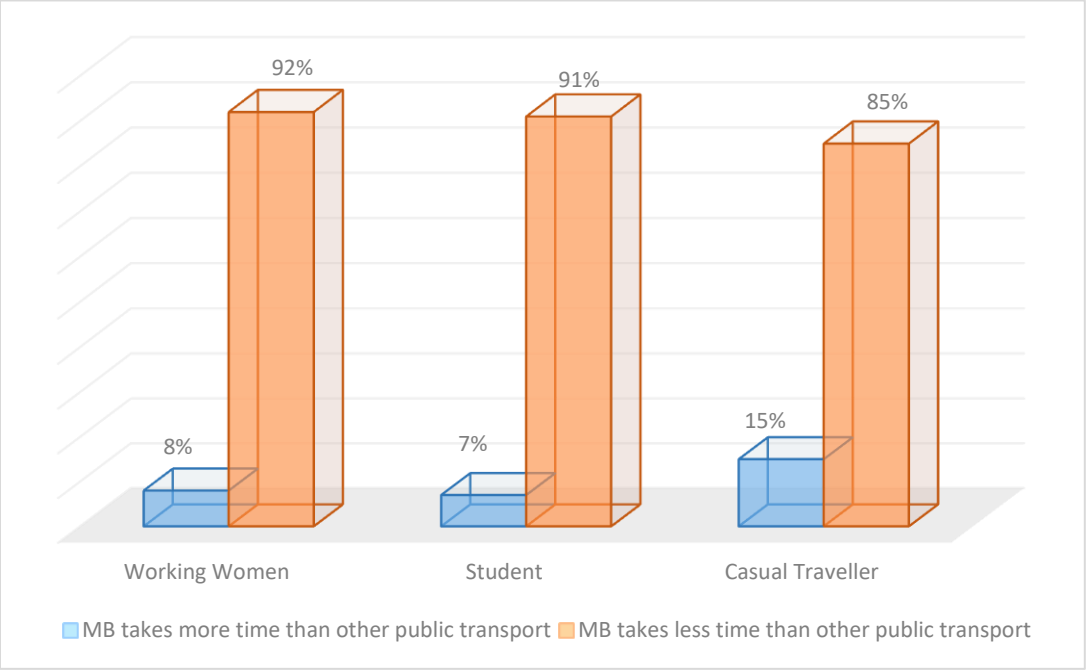
> "I am very glad to get rid of the van journey… Public transporters are 'mafia'… habitually humiliating and intimidating commuters. I had to change two vans to reach my work place every day… It took me over an hour and costing between Rs 80 to Rs 100. After the metro bus, I take a comfortable and safe journey just in Rs 20." (*A working woman*)

Exploring how much time it takes to reach a desired destination using a metro bus versus other public transport facility, findings suggest that metro bus covers distance in shorter duration than other shared public transport facility such as van or Suzuki.

A clear majority of respondents from all groups – 92% working women, 90% students, and 82% casual travelers – indicated that metro bus provides a faster journey as compared to other shared public transport (see figure 4.4). "The metro bus departs and completes its journey within its specified time, while van takes times to fill empty seats. It gives a sense of certainty and you can get to your office on time", said a working woman. A university student said "Metro bus is highly recommended for those who go to work or for education… I precisely know how much time the metro bus takes, so I plan my journey accordingly. Once I ride the bus, I know exactly when I will reach my station… not worries related to delays."

> "Metro bus does not only save my money, but save my time too. I am a regular traveler between Islamabad and Rawalpindi… I used to spend hours in vans, but now I can get to the Pak Secretariat from Saddar in just 53 minutes in just Rs 20." (*A working woman*)

Figure 4.4 Time Taken to Reach Desired Destination



The figure 4.4 shows the responses of passengers about time taken by PMBS and other public transport. The bar chart clearly shows that above 90% respondents said that PMBS takes less time as compare to other shared public transport such as van or Suzuki pickup. In contrast, a small number of participants from all groups believed that metro bus takes more time. This small percentage of respondents were those who just travel from one station to other subsequent station. The discussion indicates that a small journey may takes more time on metro bus as compared to van because passengers have to walk into the station using staircase, get into the line to buy a token, pass through the gates to enter the main hall and wait for the bus. In contrast to this, a majority confirmed that van or Suzuki takes more time in longer journey within the city. Van and Suzuki have no proper timings of departure, no binding to complete the journey within specific time, and no fine to observe delays.

> "The vans plying on Murree Road take more than an hours from Centaurus to reach Liaqat Bagh… It costs Rs 60… have to change 2 vans… while the metro bus takes me there within 30 minutes and for just Rs 20." (*A casual traveler*)

> "I have come to Islamabad to visit my sister... Before the metro bus, I used to come on a motorbike with a relative or had to take taxi… I had to bother some male member of the family to drop me there. Now, it's so easy, I can travel alone and with no delay." (*A casual traveler*)

Exploring whether timely information was shared about the schedule of metro buses and other public transport which would enable the commuters to plan their journey and reach destination on time, a consensus positive response came up for the PMBS, whereas almost every participant confirmed that there was no proper system of information sharing available for other public transportation.

Regarding information of bus schedule and route map (in question 26 and 27) a vast majority gave positive response. Participants indicated that metro bus provides a proper information system regarding bus schedule, route map and fare. Metro route maps were displayed everywhere at the PMBS stations and inside the metro buses. There was also an electronic video and audio system for up-t-date information about the bus stations and schedule of the buses. In contrast, above 95% respondents indicated that other public transport lack any information system about bus schedule, route map and fare. Probing if there was some information shared ever about change in travel fares, most of the respondents replied that it did not happened in recent past so they don't know precisely yet whether there is any such mechanism exists or not.

4.3.3 Responsiveness

To assess the responsiveness of the metro bus management towards its customers, participants were asked whether they ever made a complaint with the PMBS staff and what was the outcome. The findings suggest that a majority of the respondents either never felt the need to register a complaint or they did not know if there was any such facility available to register a complaint. In contrast, a few respondents indicated that they did register a complaint with the PMBS management at the metro bus station. The behavior of staff members at station and during travel also creates concerns for passengers. Female passengers prefer technological solutions at mass transits and replace staff with automated machines at stations and in buses (Tharasher & Schnell, 1974). However, most of them (around 13 respondents) confirmed that the metro bus staff were reluctant and did not cooperate to address the issue. "I left my hand bag in the metro bus I was traveling in… I missed the bus so I rushed to the ticket counter and asked them to recover it… They did make a call, but they did not put enough effort", said a casual traveler. In contrast, a few complainants were satisfied with the PMBS management.

> "I use metro bus every day to attend my college… I was harassed by a small group of boys for a couple of days. My female companions encouraged me to make a complaint, so I did… The PMBS security acted immediately… detained those boys, took their pictures and ID cards, took a written confession, and gave them a warning… Later the security officer shared all the details with me and asked me to get back to them if something else happen again… I never saw those guys on my bus since then." (*A university student*)

4.4 Safety and Assurance

Safety and security is one of the main concerning factors for female commuters and their families while using public transport. Literature suggest that female commuters feel

insecure while traveling on public transport due to social and physical characteristics of transit settings. Due to the lack of safe and reliable public transport system females have to adjust their mobility and travel patterns, and sometimes avoid certain means of public transport such as van, Suzuki or taxi. This situation is perhaps more threatening to a particular category of young female commuters, who were more exposed to harassment and victimization. While conducting interviews of 150 female commuter travelling on PMBS, 80% of respondent said that they were using other public transport such as van/Suzuki because there was no other option. While travelling on these shared public transport facilities they were exposed to harassment at stops and while travelling.

To explore what impact PMBS made in this context, respondents were asked (question 29 to 33 of interview questionnaire) about the safety and security at the metro bus stations as well as inside the metro buses. The behavior of the metro bus staff and satisfaction of passengers regarding safety measures were also investigated (see annex 1d).

The findings indicate that a vast majority of the respondents (up to 98%) considered the PMBS a safe and secure public transportation system. Respondents were satisfied with the measures taken for safety and security of commuter, especially females. The findings suggest that the environment of metro bus stations, presence of female staff at the ticket counters and waiting areas, and separate seating space for female commuters offer a sense of safety and security. Only a few interviewees expressed that they still sometimes feel insecure, primarily due to the eve teasing behavior of male travelers.

A number of respondents also highlighted concerns about the safety of their belongings during riding the bus. “I am always worried about the safety of my belongings while

traveling. I know there are CCTV cameras everywhere, but it would be difficult to find the thief… due to congestion inside the bus", said a working woman. Interestingly, almost 50% of the female commuters, mostly casual travelers, were not aware of the CCTV security cameras installed at the metro stations and inside the metro buses, but they were still feeling safe and secure because of the presence of security staff, closed and sheltered stations, and designated seating for female commuters inside the bus.

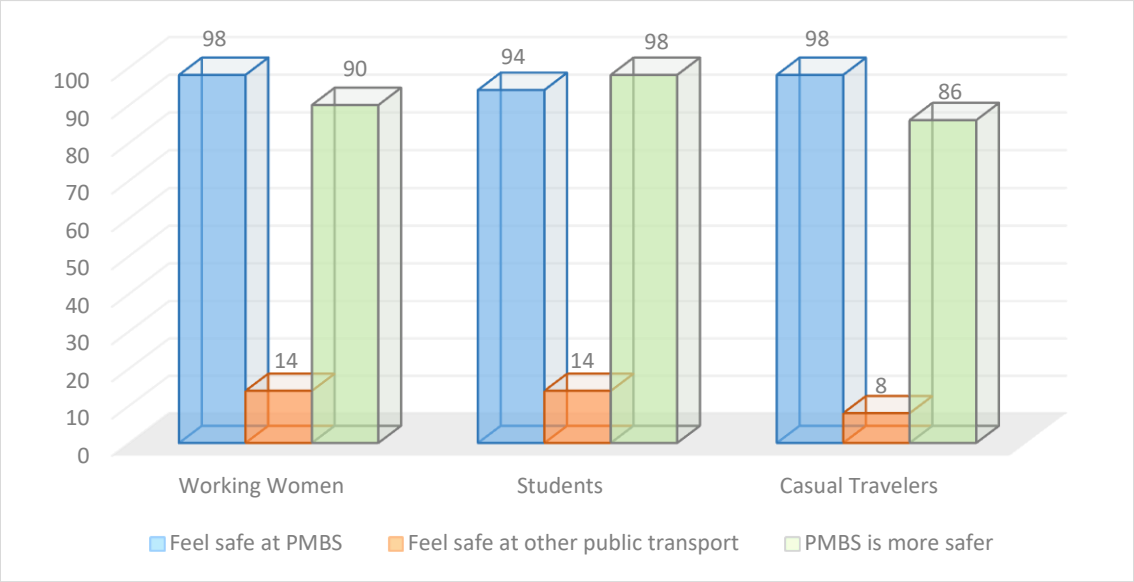
> "It (metro bus) is safe! I feel confident while using metro bus for my daily commute to work. My husband used to drop me to my work place, but now he only picks and drops me at the Faizabad station… There are other females around, female security staff, and security cameras too… Male commuters are aware of the security too… that is why they behave well." (*A working woman*)

> "At metro while travelling I feel safe and secure… Now we can commute with dignity and respect… Metro is a step toward modernization towards development. I feel it is a good improvement… Government should have done this much earlier… Now it is time to expand this service to other parts of Rawalpindi and Islamabad." (*A working woman*)

Above 90% of the respondents who used or still using van/Suzuki confirmed that the PMBS was a relief from daily harassment females faced at other public transport. Exploring whether female commuters feel safe using other transport facilities, a clear majority from all groups expressed their insecurities: only around 14% working women, 14% students and 8% casual travelers were satisfied about the safety using other transport facilities (see figure 4.5). When probed, the respondents indicated that they were referring to Careem and Uber cab service, and not the shared public transportation. The findings suggest that lack of proper waiting areas and security, and absence of schedule were the factors adding

to the vulnerability, harassment and victimization of female commuters travelling at other public transport.

Figure 4.5 Comparison of PMBS with other public transport in term of safety



The findings suggest that harassment was more common among students and young working female or casual travelers as compared to elder women. A majority of the students were victims of eve teasing and comments passing by males while using other public transport, which was very limited at the PMBS. “Metro bus is a relief from that harassment and victimization we used to face”, said a university student. On the other hand, elder working women and casual travelers have same views about PMBS and other public transport in term of safety and security.

> “I have always faced the worst while using public transport… I always faced disrespect and humiliation while travelling on public transport… The Metro Bus has given relief from daily humiliation and harassment… I am fully satisfied with the Metro Bus service. It has given female a sense of confidence and security.” (*A working woman*)

> "I faced eve teasing and foul language in vans many times, but never got courage to raise my voice because I had to travel on same the route on a regular basis. I didn't want to get myself noticed… Metro bus gives a relief from daily humiliation at public transport." (*A university student*)
>
> "Metro bus had given me relief from the daily teasing remarks and eve teasing along roadsides waiting for van… The separate seating space in the buses and female staff at stations made me feel safer." (*A college student*)

Exploring safety and security inside the metro bus, most of the female commuters expressed complete satisfaction about the metro bus station environment and the separate section for female inside the buses: 94% working women, 82% students, and 96% casual travelers. A few respondents however still expressed concerns regarding safety measures. They had concerns regarding the overcrowded stations where females have to pass through male crowds to reach the bus gate. Some had concerns regarding the lack of proper separation of female compartment inside the buses. While some indicated that the male commuters come to the female designated area due to absence of proper separation and sit on female reserved seats during peak hours. This creates sense of insecurity among female commuters, especially students and lone travelers.

> "Due to limited space inside the buses we still face problems… government should take some steps in this regard... Run exclusive buses for female commuters during peak hours would be a great initiative." (*A university student*)
>
> "The metro bus has given a relief for female commuters especially… before metro we have to travel in small over-crowded dilapidated vans… It was quite a struggle every day to catch a van and then be huddled into it like chickens. Metro bus has brought a measure of dignity to the daily commute especially for female commuters" (*A working woman*).

Comparing the PMBS ride with other public transport facilities, respondents indicated that inside the public transport van there was no separate space for female passengers, moreover the eve teasing and glaring by male passengers create insecurity and discomfort. While travelling between the two cities female passengers have to change 2-3 vans and while waiting for every next van they have to face eve teasing and comments from people passing through. "Our men don't have respect for women… They don't understand how insecure and discomfort we face due to their ugly remarks… These men are extra conscious about their mother and sisters, but don't respect women traveling on a public transport", said a working woman.

Box 4: Safety first

I am student of (a private college) in Blue Area, Islamabad. Before metro bus my family did not allow me to go to this college alone on public transport. My father or brother used to come with me to drop me, but it was necessary. My family and I believe in safety first. After PMBS, my family now allows me to go alone. I feel safe and secure while travelling on metro bus. I am usually alone, but there are other female travelers, security cameras and security guards everywhere. The separate seating space in the buses and female staff at the stations are good measures. But due to limited space for female passengers inside the buses we (females) still face some problems. (*A college student*)

Exploring the behavior of staff at the metro bus station and comparing this with other public transport facilities, a clear majority of participants from all groups confirmed that the presence of female staff at station gives a sense of security, safety and confidence. The

female staff at PMBS were mostly respectful and helpful. A majority of the female commuters expressed confidence and satisfaction over the behavior of male staff too.

> "The (metro bus) staff is quite respectful. They don't bother us, but are always there to help us. I am thankful to female staff there… they are always there to help every commuter." (*A working woman*)

> "Yes, they deal us respectfully. I feel safer and securer when I see them at the station… I know they are there to help if I ever need them." (*A college student*)

On the other hand, most of the responses suggest that the staff – conductor and driver – at the other public transport were the main reason for insecurity and unsafety of female commuters. Some respondents, mostly students and young casual travelers, indicated that the drivers and conductors harass female commuters while travelling. Female passengers feel uncomfortable with the disrespect and foul language used by the van drivers and conductors with fellow male commuters. The overloaded vans with closely fitted seats provide opportunity for drivers and other passengers to do unwanted touching.

> "I had no other option since I had to sit on the front seat, next to the driver, because these are the only seats reserved for women in the van… unwanted touching while shifting the gears happens too often and is very uncomfortable… I cannot complaint this to my father due to the fear of fight or he may ask me to discontinue your college." (*A college student*)

> "Instead of spending huge funds on the construction of metro track, government should have used the money to provide the same buses on all routes between Rawalpindi and Islamabad… It is unfair that me, along with many other women, are still facing problems while using other public transport on other routes." (*A casual traveler*)

Most of the female commuters had demands regarding further safety measures. They demanded the authority to either provide female only compartments inside buses with an increase in reserved seats for female passengers or run female only buses during peak hours. The overcrowded buses and lack of proper separation of female compartments create sense of unsafety among many female commuters during peak hours.

4.5 Ease in Mobility

It is evident from the literature on public transportation that a safe, reliable and affordable public transport facility is necessary for ease in female mobility. A safe and reliable transportation not only improve mobility but may also generate economic and social activity by providing easy access of female to work, education, market place and other social activities. A number of claims were made in the media by the PMBS, including that metro bus offers an opportunity to female passengers who could not travel alone for work, education and market due to absence of a reliable and safe public transport. Along with safety, PMBS also claims offering a comfortable and luxury transportation, due to which people who were using personal vehicles have started using metro buses. This research tests these claims in the context of female mobility, and explores ease in mobility for social and economic activities. The research participants were asked (question 34 and 35) if they have experienced any improvement in economic activity, ease in mobility, freedom from dependence on male member of family, and access to market for shopping and grocery as social activity (see annex 1e).

The safety and privacy of female makes mobility a sensitive activity. Therefore people prefers a mood of transportation which ensures their safety and privacy (Adeel, Yeh &

Zhang, 2014a). A significant proportion of respondents indicated that the metro bus service has helped a lot to improve social activities and market access of female population by providing safe and affordable transportation. Interestingly, respondents from all groups gave different reasons for this. For instance, working women were happier to save money they used to spend on cab, students were more comfortable about their safe and comfortable travel experience, while casual travelers were mainly delighted about coming out of male dependence for social activities such as shopping or visiting a family or friend's place.

> "I had to ask my husband a thousand time before he would take me to the market for shopping… Now I take my sister-in-law with me and we do all our shopping without his involvement… He (my husband) is happy too." (A casual traveler)
>
> "God knows how many thousands I have spent on taxi and rickshaw… and above all, that insecurity to travel with an unknown man in taxi… Thank God, I don't have such issues any more… I save a lot now… Nothing is perfect, but traveling on metro bus is a delightful experience." (*A working woman*)
>
> "I feel safe here (on metro bus)! My brother drops me at the station every morning, and I travel alone to my university in Blue Area, Islamabad." (*A university student*)

The findings also indicate that some female passengers now travel more freely and frequently on metro bus as compared to their past experience. The findings suggest that female passengers now have improved access to market places such as Centaurus Mall, Rabi Centre Murree Road, Commercial Market and Saddar Rawalpindi. "Although many main markets are close to the metro bus route, we have to take a cab or van to access market places far from the station", said a casual traveler.

Some respondents also highlighted that six large secondary and tertiary government hospitals – CMH & MH Saddar, Benazir Hospital Murree Road, Cardiac Hospital Rawal Road, PIMS Islamabad, and Poly Clinic Islamabad – are just on walking distance from the metro bus route, which provides easy access to general public. "I live in Rawalpindi but I prefer to visit PIMS hospital (Islamabad) for my pregnancy… The hospital is clean and doctors are good, and metro bus saves both my money and time", said a casual traveler.

Box 5: Mobility, freely and frequently

I am house wife… We (girls in the family) had to plan and seek permission from our elders before any social activity outside house. In most cases, either our request was rejected or a male member of the family used to accompany us to the market… things have changed ever since the metro bus came in. We just let our elders know about our plan and leave. Although I never go out alone, prefer to keep a company with me all the time… Travelling on metro bus is fun. During load-sheadings last summer, we used to take air-conditioned metro bus and enjoy window shopping at the Centaurus Mall. My mother, aunt and cousins also accompany us on our frequent window shopping at Centaurus Mall. (*A casual traveler*)

A safe, affordable and reliable mode of public transport helps female population to participate them in education and employment activities (Imran, 2008). Despite a few reservations from a small group of female commuters, a clear majority of the respondents considered that PMBS has brought an ease in female mobility. It has provided a great opportunity for female to engage and participate in economic and social activities. Furthermore, PMBS has given a relief from female dependency on male members to travel on public transport.

> "I used to spend hours getting to my office in crowded and smelly vans… By the time I reached my office, my mood was as uneven as my dress. Metro has given a relief from all that situations." (*A working women*)
>
> "In our society parents and family members tend to take special care in terms of transport facilities for their children, especially girls… I was allowed to get admission in this university just because of metro bus service… My parents do not worry even if I have evening classes… Government should also plan to launch a women's only transport service. I think it will be a much bigger success than the metro." (*A university student*)

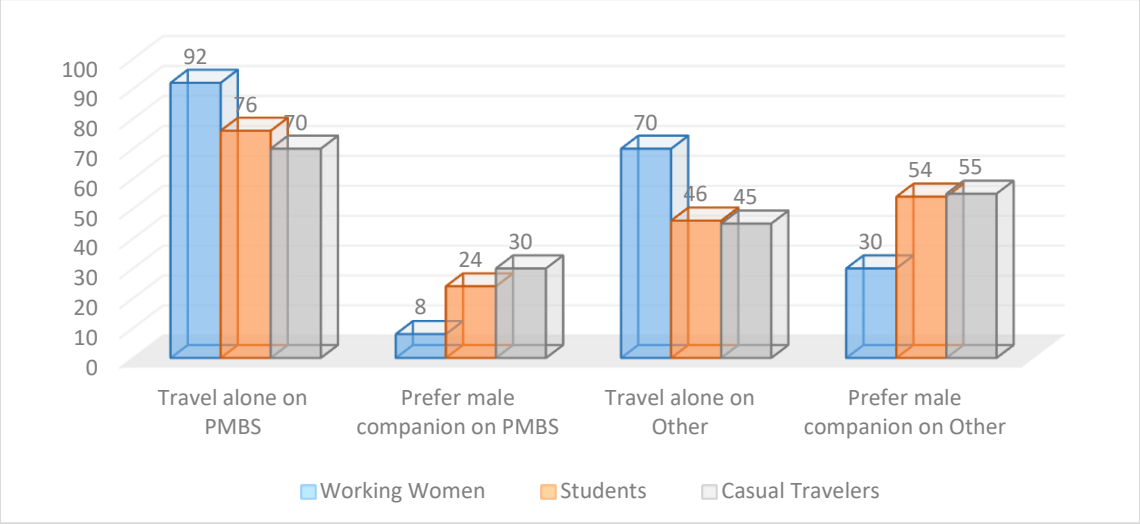
Male dependence for female mobility outside house is common in our society. While travelling without male, women are sometimes charged with extra fare or sometimes taken to wrong bus stops. They often face harassment, stalking and poor travel environment in public transport and walking on urban roads (Sohail et al, 2006). Knowing this hostile travel conditions, families do not allow women to travel without male especially the young adults. This research explores whether metro bus service has helped females to reduce this dependence. The findings of this research indicate a significant drop in male dependence. Content analysis of the responses suggests that 92% working women, 76% students, and 70% casual travelers were either traveling alone or had the courage to travel alone on metro bus. In contrast to this, around 30% working women, 46% students, and 45% casual travelers indicated that they cannot travel alone on other public transport facility.

Figure 4.6 presents respondents experience about their dependence on male members of their families while using the metro bus versus other public transport facility. It is clear from the chart that female passengers were more confident to travel alone on metro bus as compared to ride other public transport service.

However, still there was a sizeable group of respondents who were confident to travel alone on other public transport service. When probed, respondents, mostly working women and students indicated that despite insecurity they have to take other public transport service to reach office or university on time.

> "I travel alone on the metro bus as well as on the van, but I feel comfortable and secure in metro bus… I have to take van from Saddar to my house near Ayub Park… If given an option, I would never ride a (public transport) van again." (*A working woman*)

Figure 4.6 Freedom from dependence on male family member



Respondents confirmed that PMBS has given a relief for most of the female passengers from their dependency on male members of their family. A vast majority of the respondents suggested that they used to need male members while travelling outside house, which was burdensome for them and for their male companions too, especially for students and working women who have to go out on daily basis. Although it was for their own security and comfort, but it was burdensome to have a male member alone with them every day.

> "I don't wait for anyone anymore before going to work. I pick my bag and reach the metro bus station by walk. The station is just on 5 minutes walk, and the neighborhood knows my family well… I don't bother my brothers anymore, and it is a relief for them as well as myself." (*A working woman*)
>
> "My father has a shop in Saddar Rawalpindi… he comes home late every day… He used to wake up early just for us (me and my sister) to give us a drop to college. Although he never mentioned, but I used to feel bad… Thanks to Shahbaz Sharif (CM Punjab). Now I travel alone on metro bus to my training institute in Islamabad, and my father completes his sleep." (*A college student*)

In contrast, some female commuters indicated their preference of a male companion along with them while travelling on the metro bus. When probed why, some said they still feel unsafe and insecure due to overcrowded stations and buses, while others said it was not their choice. "I can travel alone on metro bus during the day time, but not allowed to do so", said a college student. Exploring whether metro bus enables the female population to generate economic activity, a few respondents (mostly maids and nurses) indicated that they have started work after the launch of PMBS. "I left my work in G-10 due to expensive travel and harassment during travel (at other public transport system)… now working again in Islamabad", said a working woman. The findings indicate that despite daily victimization and harassment female face, some of them had to use other public transport to meet household expenses. "I am the sole earners of my family so I have to go out to work every day. Now it is metro bus or van, I need to be at work at any cost", said another working woman. Similarly, praising the metro bus service an old lady (casual traveler) said "I never imagined I would see such a transport facility in my life…

Traveling in old times was difficult, like using a *tanga*. Metro bus is a blessing for female commuters."

4.6 Key Findings

In the light of the findings and discussion presented above, following are the key findings underlining the impact of metro bus service in female mobility in Islamabad-Rawalpindi.

ACCESSIBILITY AND CONNECTIVITY: The PMBS was difficult to access and covers limited areas in Islamabad- Rawalpindi. In contrast, other public transport facilities were easily accessible and more interconnected in terms of coverage of areas than the metro bus service in the twin cities. PMBS stations were accessible to a minority section of female population travelling on this specific metro bus route. Whereas a majority of female population still used other modes of transportation such as such as van, Suzuki, cab and rickshaw to access PMBS. It was primarily due to the absence of an expanded metro bus network and lack of feeder bus service in Islamabad-Rawalpindi.

TANGIBLITY AND AUTOMATED SYSTEM: The PMBS scores excellent against all the tangible dimensions and use of technology. PMBS stations and buses were found clean and well maintained, the free Wi-Fi service, air conditions and escalators were working properly. All these were lacking in other public transport services. Regular commuters were aware of the use of these automated facilities, while some casual commuters were getting help from the metro bus staff whenever needed. Overall, the PMBS technology has improved the quality of services in the provision of public transport system.

One of the largest concerns of the female commuters was the limited designated space inside the metro bus. Although all metro buses have separate female seating area and space

for standing inside the bus, it was considered not sufficient enough especially during peak morning and evening hours. In addition to congestion problem, lack of proper physical separation of female-male compartments was also highlighted which sometimes creates insecurity among female passengers.

AFFORDABILITY, RELIABILITY AND RESPONSIVENESS: The PMBS was not just affordable, but safe, reliable and comfortable public transport service. In contrast, although the other public transport services were also affordable, but considered not safe, and not reliable and comfortable. Female commuters of metro bus gave more weightage to the reliability aspect of the PMBS. This includes almost no waiting time, arrival of the buses on schedule, known estimated travel time to desired destination, and sharing of information about bus timings, routes, and stations. In contrast, the other public transport services have an unreliable operation system. It lacks schedule of arrival and known estimated travel time, and information about changing routes, timings and fares. The uncertainty in schedule and travel time delays create sense of insecurity among female commuters, due to which they feel vulnerable to harassment.

The responsiveness of the metro bus management towards its customers was considered good by the female commuters. The role of PMBS staff at the ticket counters and support/security staff in the waiting corridors were mostly appreciated. However, the complaint mechanism was not fully understood. A majority never felt the need to file a complaint, while some felt that the PMBS staff was not always cooperative in registering their complaints. Perhaps it was due to the lack of proper training of staff in dealing with the commuters or there was a lack of mechanism for solving complaints.

SAFETY AND ASSURENCE: The PMBS has addressed the security and safety needs of female population to a large extent. The security measures at the metro bus stations, presence of female staff at the ticket counters and in the waiting areas, and separate seating space for female commuters offer a sense of safety and security to female passengers, especially to young female commuters. Due to the congestion problem in the designated female area, commuters were also concerned about the safety of their belongings. In contrast, the lack of proper waiting areas and security, and absence of schedule were the factors adding to the vulnerability, harassment and victimization of female commuters using other public transport. Therefore, the metro bus service was considered as a relief from insecurities females faced at other public transport services in the twin cities.

EASE IN MOBILITY: By proving a safe and reliable mean of public transport, the PMBS has boosted up the confidence and sense of security in the female population of Islamabad-Rawalpindi. The metro bus service not only enables females to save money they used to spend on other public transport means, but also reduces male dependence and offers safe and comfortable travel experience. That is why, it has significantly improved ease in mobility and reduced male dependence for social activities such as market access and visiting a family or friends' place. Before the PMBS, despite several reservations, most of the females either had to use personal vehicle or hire a cab, or take other public transport means. Some female workers, who did not work or left their jobs earlier due to unavailability of safe and affordable public transport system, has started to work after the provision of PMBS.

5 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The aim of this study was to investigate the role of public transport system in female mobility in Pakistan. In this context, the objective of this research was to examine the utility of Metro Bus System in female mobility in Islamabad-Rawalpindi. With an overall focus on the impact of the MBS on female mobility in Islamabad-Rawalpindi, this research explored female experience (before and after the provision) of PMBS related to accessibility, tangibility, affordability, safety, reliability, and change in social and economic activity.

This study offers an in-depth understanding of the impact of PMBS on female mobility in Islamabad-Rawalpindi. This study is novel and makes an original contribution to the literature and public policy debate as no other study has so far examined the impact of metro bus specifically on female mobility in the context of Pakistan. This research seeks to inform future policy decisions of the Pakistan government and, more broadly, the private sector in Pakistan by identifying issues and possible ways forward related to the provision of public transportation in urban centers and its role in female mobility.

The overall finding of this research indicates that the metro bus service in Islamabad-Rawalpindi has brought an improvement in the service quality of public transportation for female passengers leading to ease in mobility of the female population which was absent previously. The analysis on all the service quality dimensions, such as reliability, tangibility and affordability, safety and assurance show that the PMBS has effectively addressed the concerns of female population regarding public transportation environment and has

significantly improved female mobility in Islamabad and Rawalpindi by providing respectful and hassle-free transportation.

Despite some limitations such as difficulty in accessibility of metro bus stations, limited inter-connectivity, and unavailability of seats during peak hours, and congestion problems due to small space inside the bus, it can be concluded that the MBS has effectively addressed issues such as uncertainty and insecurity of female passengers to a greater extent. Female commuters of all the three groups – working women, students and casual travelers – were mostly satisfied about their safe, reliable and affordable travel experience which other public transport services lack. The findings of this study highlight areas which required renewed attention by the PMBS as well as by the private transporters to make the travel experience more customer friendly, especially for female commuters.

5.2 Policy Recommendations

In the light of the research findings, this study makes following recommendations to improve the service quality of PMBS for female passengers in Islamabad-Rawalpindi:

1. To improve the accessibility, feeder buses are recommended in Islamabad and Rawalpindi to facilitate the PMBS passengers. It is expected that feeder buses can improve the accessibility of PMBS passengers to a greater extent.
2. To improve the inter-connectivity, it is recommended that PMBS should expand its route network and begin operations on other approved metro bus routes such as Peshawar-morr to new Islamabad Airport, Bharakahu to Faizabad, Texila to Saddar, and Rawat to Faizabad. It is expected that this will improve the coverage and inter-connectivity.

3. Although the existing PMBS is considered safer and comfortable by a majority of female commuters, congestion problem in the female designated area inside the metro bus was repeatedly highlighted. To overcome this, PMBS should add 'female only' exclusive buses during peak hours. To do so, instead of every three minutes interval, these exclusive buses can run with an interval of every 15 minutes. Meanwhile, PMBS should also provide secured female compartments with an increase in reserved seats for female passengers, separated physically and completely from male compartments in regular metro buses.

5.3 Future research

This research has been limited to the perspective of female commuters travelling on PMBS. It did not cover the experiences of male and handicapped commuters, or the perspective of the metro bus staff on duty and management. A future study on a similar topic may like to record their perspectives. Further, a similar study should be conducted in Lahore and Multan where metro buses are operating and feeder buses are used to facilitate the commuters.

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Annex 1a: Accessibility

	THEMES & SUB THEMES	RESPONDENTS		
		Working Women	Students	Casual Travelers
INDICATORS	**ACCESSIBILITY**			
2.11. DISTANCE FROM NEAREST STATION	Distance from Nearest Metro Bus Station (2.11A)	42% say it takes 5-10 mins by Walk 58% say it takes 15-20 mins on Vehicle	54% say it takes 5-10 mins by Walk 46% say it takes 10-20 mins on Vehicle	26% say it takes 5-10 mins by Walk 74% say it takes 15-20 mins on Vehicle
	Distance from Nearest Past/Other Public Transport Stop (2.11B)	It takes 2-5 mins on average by Walk	It takes 2-5 mins on average by Walk	2-5 mins on average by Walk
2.12. HOW TO REACH NEAREST PMBS STATION	How to Reach Metro Bus Station (2.12A)	42% Walk 18% Cab/Pvt vehicle 40% Public Transport	54% Walk 18% Cab/Pvt vehicle 28% Public Transport	26% Walk 36% Cab/Pvt vehicle 38% Public Transport
	How to Reach Past/Other Public Transport Stop (2.12B)	100% reach by Walk or personal vehicle	100% reach by Walk or personal vehicle	100% reach by Walk or personal vehicle
2.13. DESIRED DESTINATION	Routes Connect Desired Destination via Metro Bus (2.13A)	Yes 92% No 8%	Yes 86% No 14%	Yes 76% No 24%
	Routes Connect Desired Destination via Past/Other Transport Facility (2.13B)	Yes 85% No 15%	Yes 100% No 0%	Yes 90% No 10%
2.14. ROUTES CONNECTIVITY	Routes Connectivity via Metro Bus (2.14A)	Yes 2% No 98%	Yes 40% No 60%	Yes 10% No 90%
	Routes Connectivity via Past/Other Transport Facility (2.14B)	Yes 80% No 20%	Yes 74% No 26%	Yes 90% No 10%
2.15. TYPE OF OTHER TRANSPORT USED	Use of Other Transport (2.15)	44 % use Cab/ Careem. 56 % use Van/Suzuki	30% use Cab/ Careem. 70% use Van/Suzuki	60% use Cab/Careem. 40% use Van/Suzuki
2.16. EASE OF ACCESS (Metro vs Other)	Ease of Accessibility (2.16)	38% Metro Bus 46% Other public transport 16% Both are Same.	30% Metro Bus 50% Other Public transport 20% Both are Same.	26% Metro Bus 62% Other Public Transport 12% Both are Same.

Annex 1b: Automated System and Tangibility

	THEMES & SUB THEMES	RESPONDENTS		
		Working Women	Student	Casual Traveler
INDICATORS	**AUTOMATED SYSTEM**			
3.17. AUTOMATED TICKET	Difficulty in Using Automated Ticket System (3.17)	92% Don't face any difficulty 8% face difficulty	90% Don't face any difficulty 10% face difficulty	82% Don't face any difficulty 18% face difficulty
3.18 USE OF ESCALATORS	Difficulty in Using Elevators/Escalators (3.18.1)	96% don't face any difficulty 4% face difficulty	100% don't face any difficulty	98% don't face any difficulty 2% face difficulty
INDICATORS	**TANGIBLITY**			
3.18. ESCALATORS	Elevators/Escalators Work Properly (3.18.2)	No 6% Yes 94%	No 12% Yes 88%	No 4% Yes 96%
3.19. AC	AC Works Properly inside Metro Bus (3.19)	Yes 100%	Yes 100%	Yes 100%
3.20. WiFi	WiFi Works Properly (3.20)	Yes 12% No 2% DNK 86%	Yes 32% No 4% DNK 64%	Yes 16% No 8% DNK 76%
3.21. & 3.22. CLEANLINESS & MAINTENANCE	Cleanliness at the Metro Bus Station (3.21)	Excellent 78% Good 20% Normal 2%	Excellent 68% Good 28% Normal 4%	Excellent 74% Good 22% Normal 4%
	Cleanliness Inside the Metro Bus (3.22A)	Excellent 62% Good 32% Normal 6%	Excellent 52% Good 38% Normal 10%	Excellent 60% Good 36% Normal 4%
	Cleanliness Inside Other Transport Facility (3.22B)	Good 4% Normal 26% Poor 42% Very Poor 28%	Good 12% Normal 32% Poor 22% Very Poor 34%	Good 12% Normal 16% Poor 42% Very Poor 30%
3.23. & 2.24 SEATING SPACE	Seating Space at Metro Bus Stations (3.23)	Yes 52% No 6% Don't need 42%	Yes 50% Don't need 50%	Yes 44% Don't need 56%
	Seating Space Inside Metro Bus (3.24)	Yes 42% No 58%	Yes 24% No 76%	Yes 14% No 86%
3.25. COMFORT	Are Seats Comfortable in Metro Bus? (3.25)	Yes 88% No 12%	Yes 80% No 20%	Yes 90% No 10%

Annex 1c: Affordability, Reliability and Responsiveness

	THEME & SUB THEMES	RESPONDENTS		
		Working Women	Student	Casual Traveler
INDICATORS	**AFFORDABILITY**			
4.26. AFFORDIBILITY	Affordable Metro Bus (4.26A)	Yes 100%	Yes 100%	Yes 100%
	Affordable Past/other transport facility (4.26B)	Yes 70% No 30%	Yes 60% No 40%	Yes 62% No 38%
	Metro vs Past/Other Transport Facility used (4.26C)	100% say MB is more affordable than other Public Transport	100% say MB is more affordable than other public transport	100% say MB is more affordable than other public transport
INDICATORS	**RELIABLITY**			
4.27. WAITING TIME	Waiting Time for Metro Bus (4.27A)	5 minutes: 98% 10 minutes: 2%	5 minutes: 99% 10 minutes: 1%	5 minutes: 98% 10 minutes: 2%
	Waiting Time for Other Transport Facility (4.27B) – Van/Suzuki/Can/Careem	5 minutes: 30% 10 minutes: 58% +10 minutes: 12%	5 minutes: 40% 10 minutes: 50% +10 minutes: 10%	5 minutes: 25% 10 minutes: 10% +10 minutes: 65%
4.28. TIME TO DESTINATION	Avg Time Taken to Get to Desired Destination via Metro Bus (4.28)	On average MB takes 20-30 mins	On average MB takes 20-30 mins	On average MB takes 20-30 mins
	Avg Time Taken to Get to Desired Destination via Other Transport Facility (4.28)	On average other shared transport takes 30 mins	On average other shared transport takes 30-40 mins	On average other shared transport takes 30-40 mins
	Compare Metro vs Other Transport	92% believe MB take less time	90% believe MB take less time	85% believe MB take less time
4.29. & 4.30. INFORMATION	Information about Metro Bus Routes/Stations (4.29A)	100% say Yes MBS provides proper information.	100% say Yes MBS provides proper information	100% say Yes MBS provides proper information
	Information about Other Transport Routes/Stations (4.29B)	95% say No proper system exists. 5% Yes	98% say No proper system exists. 2% say Yes	90% say No proper system exists. 10% say Yes
	Information about Fare and Schedule of Metro Bus (4.30A)	14% say No, 86% say they don't know.	4% say No 96% say they don't know.	6% say No, 94% say they don't know.
	Information about Fare and Schedule of Past/other transport facility (4.30B)	100% say No, there is no such mechanism exists.	100% say No, there is no such mechanism exists.	100% say No, there is no such mechanism exists.
INDICATORS	**RESPONSIVENESS**			
4.31. COMPLAINTS	Have you ever made a Complaint on Metro Bus (4.31A)	Yes 2% No 98%	Yes 4% No 96%	Yes 3% No 98%

Annex 1d: Safety and Assurance

	THEMES & SUB THEMES	RESPONDENTS		
		Working Women	Student	Casual Traveler
INDICATORS	**SAFETY AND ASSURENCE**			
5.32. SAFETY AT STATION	Feel safe at PMBS station (5.32A)	Yes 98% No 2%	Yes 94% No 6%	Yes 98% No 2%
	Feel safe at past/other transport station (5.32B)	Yes 14% No 86%	Yes 14% No 86%	Yes 8% No 92%
5.33. SAFETY INSIDE TRANSPORT VEHICLE	Feel safe inside metro bus (5.33A)	Yes 94% No 6%	Yes 82% No 18%	Yes 96% No 4%
	Feel safe inside past/other transport facility (5.33B)	Yes 18% No 82%	Yes 20% No 80%	Yes 8% No 92%
5.34. SAFETY MEASURES	Satisfied with safety measures at PMBS (5.34A)	Satisfied 78% Not satisfied 2% DNK 20%	Satisfied 98% Not satisfied 2% DNK 0%	Satisfied 90% Not satisfied 10% DNK 0%
	Satisfied with safety measures on past/other transport facility	Satisfied 5% Not satisfied 95%	Satisfied 0% Not satisfied 100%	Satisfied 10% Not satisfied 90%
5.35. BEHAVIOUR OF STAFF	Behavior of Staff at MBS (5.35A)	Respectful 94% Normal 4% Disrespectful 2%	Respectful 80% Normal 14% Disrespectful 6%	Respectful 98% Normal 2% Disrespectful 9%
	Behavior of Staff at Past/Other Transport Facility (5.35B)	Respectful 10% Disrespectful 15% V. Disrespectful 75%	Respectful 2% Disrespectful 10% V. Disrespectful 88%	Respectful 6% Disrespectful 12% V. Disrespectful 82%
5.36. SAFETY COMPARISION	Comparison of MB with Other Public Transport in term of Safety (5.36)	10% say Not much of difference 90% say PMBS is much safer than other public transport	2% say Not much of difference 98% say PMBS is much safer than other public transport	14% say Not much of difference 86% say PMBS is much safer than other public transport

Annex 1e: Ease in Mobility

	THEMES & SUB THEMES	RESPONDENTS		
		Working Women	Student	Casual Traveler
INDICATORS	**EASE IN MOBILITY**			
6.38. MOBILITY FOR SOCIAL ACTIVITY	Improvement in Social Activity (6.38A)	MBS has improved social activity of female population because now female can travel for their purpose freely and safely.	MBS has improved social activity by proving safe and affordable Transport.	MBS has improved social activity by creating a sense of security.
	Compare Metro vs Other Transport	Safety and security at other public transports hinder the social activity of female population. Despite this most of the female commuters had	Metro bus service a welcome relief from the continuous insecurity they otherwise have to face on public transport.	Travelling by public transportation used to be nothing less than a nightmare. Women generally feel safe

		to travel on public transport.		after MB.
	Improvement in Mobility for work, Education, Casual (6.38B)	Yes most of the respondents feel easy to go to work on public transport after MBS. Save money!	Yes most of the respondents use public transport for education. Feel safe!	Got relief from expensive taxi system. No dependence on males.
	Compare Metro vs Other Transport	Before MBS Majority either use taxi/personal vehicles to get to their working destination or either bear humiliation at other public transport.	There was no other option than the unsafe public transport system. MBS has given relief from that system.	Before MBS majority use taxi/personal vehicles to get to their destination or either use public transport.
	(6.38C) Freedom from Dependence on Male Members of Family While travelling at MB	8% say that they still feel unsafe and need male members of family while travelling on MB. 92% say that we can travel alone after MBS.	24% say that they need male members of family while travelling 76% say that we can travel alone after MBS.	30% say that they need male members of family while travelling 70% say that we can travel alone after MBS.
	Other Transport	70% say that despite fear we have to travel alone because we have to travel daily. 30% we cannot travel alone on other transport.	% say that they need male members 46% say Despite fear we have to travel alone because we have to travel daily.	55% we need male family member while travelling. 45% we have to travel alone despite fear.
	(6.38D) Mobility Without Companion on MB	9% need companion while travelling on MB. 91% don't need companion	After MB now we can travel alone safely.	40% need companion 60% don't need companion.
	Other Transport	9% need companion. 91% need companion but they cannot afford	Despite fear we have to travel alone because we have to travel daily.	80% need companion 20% don't need companion.
	(6.38E) Market Access for Shopping on MB	MB has improved market access but still limited.	MB has improved market access but still limited.	MB has improved market access but still limited.
	Other Transport	Other transport is the only option to visit many market areas.	Other transport is the only option to visit many market areas.	Other transport is the only option to visit many market areas.
INDICATORS	**ECONOMIC ACTIVITY**			
6.37. MOBILITY FOR ECONOMIC ACTIVITY	(6.37) Improve Economic Activity	100% Yes MBS has improved economic activity. Most of the female who did not work due to unavailability of safe public transport have started to work.	100% say they don't know about it.	12% say Yes MBS has improved economic activity by providing safe transportation. 88% say don't know

IMPACT OF METRO BUS SYSTEM ON FEMALE MOBILITY IN ISLAMABAD-RAWALPINDI

Questionnaire for PMBS Passengers

G	G	S	S	-	N	N	N

RESPONDENT'S INFORMATION:

Name (OPTIONAL): _____

Age (YY): _____ Education (Years completed): _____

Marital status: _____ Residence/locality: _____

Commute purpose: (01) Working woman (02) Student (03) Casual traveler (*) Disabled

INTERVIEWER INFORMATION:

Date of interview (DD/MM/YY): _____

Interview location: _____

Interview start/end time (Hr:Min – AM/PM): _____

Data collection method: (01) Audio recording (02) Field notes (03) Both 01 & 02

SCHOOL OF PUBLIC POLICY

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS

ISLAMABAD, PAKISTAN

www.pide.org.pk

SECTION I: PASSENGER'S DEMOGRAPHIC & ECONOMIC PROFILE

Q. 1. Family size/structure: _____ /_____ **Q. 2.** Family's monthly income: Rs. _____

Q. 3. Occupation/main source of income: _____

Q. 4. Vehicle ownership in family: 01.Yes* 02. No If yes, Type of vehicle(s): _____

Q. 5. Usage of Metro Bus: 01.Daily 02. Frequently 03. Usually 04. Less frequently 05. Sometimes 06. Rarely

Q. 6. Preference of ticket: 01.MBS Single journey token 02. MBS pre-paid card > Why? _____

SECTION II: ACCESSIBILITY

Q. 7. Name of your nearest Metro Bus station: (MAPPING) _____

Q. 8. Estimated distance from your residence/work/institute to the nearest Metro Bus station: _____

Q. 9. How do you reach your nearest Metro Bus station (*walk or use vehicle/other transport facility*): _____

Q. 10. Does the Metro route connect your desired (routine) destinations? _____

_____> Past experience/ other transport facility: _____

Q. 11. Does the Metro Bus route convenient to get around different destinations in the twin cities? (Yes/No > How/Why?) _____

_____> Past experience/ other transport facility: _____

Q. 12. Do you use any other transport facility (Yes/No): _____ If Yes, which facility (van, bus, rickshaw/cab, careem etc.) _____

Q. 13. How would you compare 'Ease of Accessibility' between these services? _____

1. very difficult to access MBS	2. difficult to access MBS	3. not much of a difference	4. easy to access MBS	5. much easier to access MBS
1. very difficult to access other	2. difficult to access other	3. not much of a difference	4. east to access other transport	5. much easier to access other transport

SECTION III: AUTOMATED SYSTEM AND TANGIBILITY

Q. 14. Do you feel any difficulty in using the automated ticket system at the Metro Bus station? (Yes/No) _____

> If yes, what difficulty you face? _____

> How do you manage it? _____

Q. 15. Do the escalators/elevators at the Metro Bus stations work properly? (Yes/No/DNK) _____

> Did you find any difficulty using it? _____

Q. 16. Does the air condition in the Metro Bus work properly? (Yes/No) _____

Q. 17. Does the free WiFi in the Metro Bus work properly? (Yes/No/DNK) _____

Q. 18. What do you say about the cleanliness and maintenance at the Mero Bus station? (*Rate 1-5, where 1 is very poor and 5 is excellent*)

1. very poor	2. poor	3. normal	4. good	5. excellent

Q. 19. What do you say about the cleanliness and maintenance inside the Metro Buses? (*Rate 1-5, where 1 is very poor and 5 is excellent*)

1. very poor	2. poor	3. normal	4. good	5. excellent

Q. 20. While waiting for the bus to arrive, are you able to find a seat at the Metro Bus station: (Yes/No/Do not need): _____

> Past experience/ other transport facility: _____

Q. 21. Are you able to find a seat in the bus during: (1) Morning hours: _____(2) Afternoon hours:_____(3) Evening hours: _____

> Past experience/ other transport facility: _____

Q. 22. Are seats in the Metro Bus comforfigureenough for travelling? (Yes/No) _____

> Past experience/ other transport facility: _____

SECTION IV: AFFORDABILITY, RELIABILITY AND RESPONSIVENESS

Q. 23. Do you think travelling on the Metro Bus is affordable for passengers? (Yes/No) _____
> Past experience/ other transport facility: _____

Q. 24. On average, how much time you have to wait for a bus to arrive at the station? (MINUTES) _____
> Past experience/ other transport facility: _____

Q. 25. On average, how much time it takes you to get to your desired destination? (MINUTES) _____
> Past experience/ other transport facility: _____

Q. 26. Is there any information system regarding Metro Bus schedule and road map? _____
> Past experience/ other transport facility: _____

Q. 27. Is there any mechanism for providing timely information regarding changing Metro Bus schedule and fare? _____
> Past experience/ other transport facility: _____

Q. 28. Did you, or someone else you know, registered a complaint regarding Metro Bus services? (Yes/No) _____
> If Yes, what was the complaint about: _____
> What was the response of MBS staff: _____

SECTION V: SAFETY AND ASSURANCE

Q. 29. Do you feel safe at the Metro Bus station? (Yes/No > If No, why?) _____

_____

> Past experience/ other transport facility: _____

_____

Q. 30. Do you feel safe inside the bus during travel? (Yes/No > If No, why?) _____

_____

> Past experience/ other transport facility: _____

_____

Q. 31. Are you satisfied with the measures taken (such as CCTV and security guards) for safety of female passengers by the Metro Bus Authority? (Yes/No > If No, why?) _____

_____

Q. 32. What is the behavior of the Metro Bus staff towards female passengers? (*Rate 1-5, where 1 is very disrespectful and 5 is very respectful*) _____

_____

> Past experience/other than Metro Bus: _____

1. very disrespectful	2. disrespectful	3. normal	4. respectful	5. very respectful

Q. 33. Can you compare the safety level of the Metro Bus with other transport facility you use? (*Metro Bus System versus Other Transport Facility*)

1. feel threatened at MBS	2. feel unsafe at MBS	3. not much of a difference	4. MBS safer than other transport	5. MBS much safer than other transport
1. feel threatened at Other	2. feel unsafe at Other	3. not much of a difference	4. Other transport safer than MBS	5. Other transport much safer than MBS

SECTION VI: EASE IN MOBILITY

Q. 34. Did the Metro Bus help you to engage or improve economic activity (such as travelling for work, market access for business) _____

_____

> Past experience/other transport facility: _____

_____

Q. 35. Did the Metro Bus help you to engage or improve social activity? Briefly describe the following:

	ON METRO BUS	PAST EXPERIENCE/OTHER TRANSPORT FACILITY
Ease in mobility (for work, education or casual)		
Freedom from dependence on male members of family		
Mobility without companion		
Market access for groceries/shopping		
Other:		

Q. 36. Are there any suggestions to improve the Metro Bus service for female passengers? _____

_____

-- **THANK YOU** --