



# Examining suitability of the integrated public transport system: A case study of Lahore



A. Aziz\*, M.S. Nawaz, M. Nadeem, L. Afzal

Department of City and Regional Planning, University of Engineering and Technology, Lahore, Pakistan

## ARTICLE INFO

### Keywords:

Integrated public transportation system  
Urban public transport  
Mass transit & Para transit  
Travel cost  
Travel time  
Service area coverage

## ABSTRACT

City administration has given prime importance to public transport services in Lahore. But still desired level of convenience and efficiency has not been achieved because of the absence of any integrated public transport system. Metrobus, LTC operated buses and Qingqi Rickshaws are all operating through their independent schedules with least consideration to that of others. Travellers using more than one modes of transport for their complete trip do not find whole system well harmonized. There is a need to find whether integration of currently independently operating transport systems can bring any improvements in services. This research work significantly points out short comings in city's existing transport system; quantifies the impact of related factors through chi-square, co-relation and other statistical analyses; and provides some policy guidelines for pragmatic improvements in the system.

## 1. Introduction

Last two centuries have brought a change in human life style. With time, traditional concept of segregated small scale settlements has been supplanted by modern approach of centralized populous urban centers. With this new approach to living, population from rural areas started moving to urban areas for permanent residence; a process called urbanization. In 1950, 29.6% of global population lived in urban areas while now this proportion has increased to 54% and is still increasing (UN-Habitat, 2015). With this increase in urban population, there's been a drastic advancement in travelling approach. Both inter-city and intra-city traffic volumes have increased as a corollary to urbanization process. In order to accumulate this dense traffic volume, road infrastructure and traffic management systems have helped significantly. But the influx of vehicles and shortening of transport infrastructure have turned focus of transport planners towards provision of efficient public transportation system. They have realized that a sustainable public transportation system is a significant viable option to reduce volume of traffic at roads and to ease the unrelenting congestion. The concept of urban public transportation system helps a country's economy sustain in a "resources versus population" war.

Travelling has not always been the way we see today; modes of transport developed with time making travelling easier and faster. With a nascent emerged concept of automobiles as a mode of transportation, there was a need for construction of roads and bridges for vehicles to run on. Developed nations in the world realized the need and assured the construction of roads infrastructure. Buchanan (1963) identifies the motor vehicle as a real demand for the new urban form (Owen, 1972). It is clear from roads infrastructure in developed countries that they have tried their best to meet this demand of urban form. But even after such complex yet admirable efforts, the problems arising due to vehicles in cities could not be avoided. Negative impacts of traffic were experienced everywhere without any limitation of geographical area as discussed by Owen (1972) that a conflict is found between car and the city

\* Corresponding author.

E-mail address: [dr.ameraziz@gmail.com](mailto:dr.ameraziz@gmail.com) (A. Aziz).

everywhere in the world. To evade traffic problems; Thomson (1977) found clear differences of traffic management in different cities of the world (Thomson, 1977).

Adams (1981) finds that problems of the urban mobility are tried to overcome through the use of technology over the years (Adams, 1981). There is no exception in cities of third world and similar sort of problems are faced in those areas as well. Dimitriou (1987) found that among most critical problems in cities of third world, transport is above in rank (Dimitriou, 1987). Research in the field of transportation planning clearly showed that just provision of more and more infrastructure for transportation is not enough and there is need for a new sort of strategic approach to be adopted. Nasim I. in ISOCARP's 44th congress asserted the need for a strategic approach to provision of public transport to the users (Nasim, 2008). In response to ever increasing problems of congestion in urban centers, different approaches to discourage vehicles were emerged. Black (1995) wrote that Singapore became the first city to work on the issues of the transportation planning (Black, 1995). International conferences have been stressing upon the idea of rejecting car use. For example, "Lyon Protocol", October 1997 for the design and implementation of car-free cities was first emerged and presented during the "Towards Car-Free Cities" conference in Lyon, France (Lyon Protocol, 1997). Thus in such cases, use of integrated public transportation is a better approach.

Transport integration is about going from one place to another via rider-friendly intermodal facilities and interconnections. Improved integration between the public transport modes helps people move around more easily and reduces the costs and inconveniences of travel. Comprehensive information system enables people to easily and quickly find and compare different routes and select the most suitable one. Thus, a coordinated integration of different transport modes brings about reduced congestion on the road, convenience to commuters, efficiency, and cost effectiveness. Simpson (1994) comments that integration implies the fast, advantageous and economical assembly of services to make up complete trips for commuters from their starting points to their destinations (Simpson, 1994). Transit integration is separated into three levels: organizational, physical and operational integration. Integrated public transport system in Singapore; South East Queens land, Australia; Paris, France and Bangalore, India is literature worth consideration for knowing how integrated public transport system has helped improve traffic situation.

Main public transport services in Singapore include the bus, Mass Rapid Transit (MRT), Light Rail Transit (LRT) and taxi. Currently, there are two main bus operators in Singapore, namely, the SBS Transit Ltd and Trans-Island Bus Services Ltd (TIBS) and the other heavy and light rail services are operated by the SMRT cooperation LTD (Ibrahim, 2003). Establishment of integrated public transport system in Singapore has helped in fight against challenges like scarce land for human habitation, limited land to build road networks and high population density (Facts & Figures, Transport Milestone – Public Transport Milestone). Singapore transport system has incorporated institutional integration, service integration, network integration and physical integration which all have helped in creation of a successful transport system (LTA, 2001).

With 1.1 million inhabitants, South East-Queens Land (SEQ), Australia has its multimodal transport system consisting of Rail Services, Bus and Ferries (Trans link, Brisbane, Australia, 2015). In 1995 SEQ government made policy to increase the trips by public transport by 50% by 2011 (Queensland Government, 1995), in 2003 another plan for the integration of the transport system was made (Queensland Government, 2003) and transport action plan 2007 was developed to upgrade the existing transport system like improvement of road network advancement of regional rail network and improvement of coordination among the various service operators (Queensland Government, 2015). Ultimately, user friendly transport system has been developed in said area.

Realizing the importance of an integrated multimodal public transport system; Paris, France has developed one of the world's best mobility patterns for travellers. The city has both the underground metro/train/buses/trams running inside the city and national railway running to suburban areas. All modes of transport are integrated with each other. Two types of tickets, season passes and single ticket provide users convenient payment mode as per their desire (The Transport Syndicate of the Paris Region, 2015).

Bangalore, fourth-largest metropolitan area in India, has embraced the development of integrated public transport system for dealing with the challenges of heavy multi directional traffic, limited possibility of improving road width and the lack of coordination among various transport service providers (Kazi, 2013).

Recent studies in this domain have used advanced analysis and research techniques to assert the need for synchronized transport modes and share the lessons learnt from a centralized transport system. Devulapalli and Agrawal (2016) mapped the services area of bus transit services in Hyderabad and affirmed the need to use created spatial data for better service in terms of equity, access and safety (Devulapalli and Agrawal, 2016). Another example of related work by (Rehman et al., 2012) is worth mentioning. The study is scoped in Dhaka City wherein the suitability of rickshaws (a para-transit mode) to act as feeder service to BRT system (mass transit mode) is explored. The conclusion drawn in this study proclaims that well organized rickshaws with trained driving staff can act efficiently as feeder to mass transit system in addition to other pros like fare integration and convenience to the public.

Schalekamp (2017) has prudently compiled the lessons learnt from the experience of a program in Cape Town where operators of para-transit modes were trained to become partners with public transport system. The study summarized the real challenges faced while formalizing the informal sector of para-transit operators including lack of trust of operators in government, clash of route associations and education of the para-transit operators. However; the continuation of the program brought positive shifts in business practices of para-transit operators and their attitude towards participation in government-led reform programmes.

Lahore, home to more than 1.11 million people (Pakistan Population Census, 2017), has currently three types of public transport tiers/systems: Punjab Metrobus Authority (PMA), Lahore Transport Company (LTC) operated buses and Qingqi Rickshaws. On average, daily 135,000 people travel through this system of transport in the city (Punjab Metrobus Authority, 2014). City administration spent lots of finance to upgrade the transport system of Lahore with a vision to provide modern transport services to the citizens. But these efforts scarcely led to the desired results. Efficient transport system is still not developed in the city due to the lack of any provisions which may facilitate travellers who use more than one mode of transport for complete trip. This discourages use of public transport system in the city and ultimately, they are forced to buy their private vehicles for meeting their travel needs. Thus

Download English Version:

<https://daneshyari.com/en/article/6779677>

Download Persian Version:

<https://daneshyari.com/article/6779677>

[Daneshyari.com](https://daneshyari.com)