

ACCESSIBILITY ISSUES TO PUBLIC TRANSPORT IN SRI LANKA

Manuli Malagalage¹, Niranga Amarasingha²
Faculty of Engineering, Sri Lanka Institute of Information
Technology, New Kandy Road, Malabe, Sri Lanka.
¹manuli.laknara@gmail.com, ²niranga.a@slit.lk

ABSTRACT- Most of the time people need to travel some distance to access public transport services as they do not provide door-to-door services. Walking is the most common and affordable method to access public transport. Good accessibility may attract more people to public transport. This research finds out the accessibility issues faced by people when they are reaching public transport in Sri Lanka. To find out those accessibility issues, a questionnaire survey is conducted focusing on public transport users. The survey mainly focuses on personal, trip, and access characteristics. In order to identify the existing accessibility issues, the data are analyzed using statistical methods, and significant differences are identified using *Chi-square* tests. Understanding the accessibility issues to public transport helps to enhance the current state of public transportation in Sri Lanka. The result of this analysis provides valuable insights into the issues faced by travelers while accessing public transport in day-to-day life. Understanding the accessibility issues to public transport will help to provide significant perception into the existing condition of accessibility in Sri Lanka and inform policymakers about the steps which need to be taken for further development.

Keywords: Accessibility issues; Public transportation; Mobility; Chi square test

1. INTRODUCTION

Public transportation modes play a significant role in offering an essential service for the passengers. Buses and trains are the staple modes of public transport in Sri Lanka. According to central bank report (2014) [1], more than 50% of the population uses public transport within Colombo. It is critical to make public transportation attractive and accessible to everybody. One of the most important variables influencing the quality of public transportation infrastructure and services is accessibility [2]. The ability for all passenger categories can reach to public transport and use the services is known as accessibility to public transport [3]. In both urban and rural areas in Sri Lanka, the most common access method to public transport is walking since it connects households to the transportation system and destinations. Especially for the poorest people walking and cycling are the most affordable methods to access public transport. The walking ability varies with the age of the person. The walking ability of the elderly and people with disabilities is very low [4]. However, in many developing countries, elderly, disabled people, and also other people are facing many common issues while they are accessing public transport such as far distance from house to the bus station, safety issues and longer waiting time [5]. When considering school children, most of them wait until the school bus/van comes to their home. Also, many people who work at offices use office transport services to go to their office. According to the World Bank, they are concentrating its accessibility efforts on various dimensions [6]. The World Bank has identified ensuring the accessibility to public transport services for poor people, women, people with disabilities, and the elderly as a top priority [6]. Normally the transportation needs are changed from person to person. Also, there is a difference in load carrying capacity between men and women. Walking remains the most common method of transportation for many women in developing countries, followed by cycling and animal-drawn carriages due to accessibility and affordability issues. The objective of this research is to investigate the accessibility issue to public transport services in Sri Lanka both urban and rural areas.

2. MATERIALS AND METHODS

As the first step, a questionnaire was prepared consisting of multiple-choice questions. Questions are included to collect data on demographic information, information about accessibility to public transport and accessibility issues. Then questionnaire is distributed among the public transport users of every age group, and it was conducted using google forms by sharing through social media such as WhatsApp, Instagram etc. The appropriate sample size of the main survey was estimated as 100 with 95% confident interval, taking the margin of error as 5% and the Z score as 1.96 [7]. The data collected from the questionnaire survey were fed into an Excel sheet and the chi-square test and regression analysis are used to do further analysis. The Chi-Square test is a statistical method used to compare the observed and expected data.[8] Cronbach’s alpha reliability test has been done in order to measure the internal consistency. Cronbach’s alpha value was obtained as 0.903 means there is good consistency between questions which measures the independent and dependent variables.

3. RESULTS AND DISCUSSION

According to the results, 54% of the public transport users are commuters. Most people use buses (71%) as the public transport mode. Only 5% of the respondents use school transport services and 1% of them use office transport services. For educational purposes, most people use public transport services (42%). A considerable percentage of people use public transport services for shopping (27%), recreational activities (13%) and reach to the workplace (16%). In most cases, the distance between public transport and the home of each passenger is less than 1km (67%). Therefore, they could walk to reach public transport from their home. More than half of the responders have missed public transport due to accessibility issues such as overcrowding of connectivity mode (65%), traffic congestion of access roads (33%) and inaccessible stops or stations (28%). Many people are encouraged to use public transport more frequently due to the low cost of it (39%). If they use another method such as a private vehicle to travel the same distance, they need to spend high cost. As the cost is high, private cars do not have wide coverage. A smaller number of people are encouraged to use public transport because of the parking unavailability for their private vehicles. If they use private vehicles to reach public transport service, there might be a proper parking space to park vehicles safely. According to Figure 1, a higher number of passengers are unsatisfied because of the parking availability at stops/stations (40%) and waiting time for the service (38%).

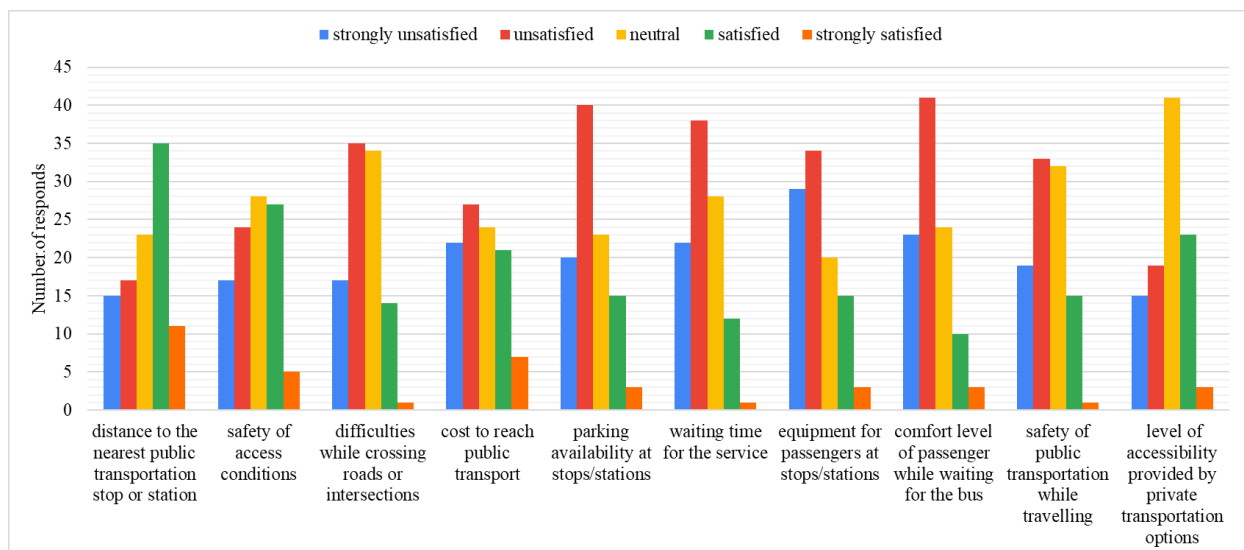


Figure 1. Latest Travel Experience of Passengers While Reaching Public Transport

About 30% of public-transport users are satisfied with the distance to the nearest public transportation stop or station. Approximately 29% of public-transport users are strongly unsatisfied because of the equipment for passengers at stops/stations such as signs, shelter, and chairs for passengers waiting for public transport. Especially for elderly and disabled people, provided facilities are not enough. This study is expected to understand these accessibility issues to public transport in Sri Lanka. Also, it is very important to improve access and mobility in developing countries like Sri Lanka.

Chi-squared test was done to identify the significant association between gender and accessibility issues. According to the results, chi-squared value was obtained as 2.218. The obtained statistic was compared with the critical statistic found in the chi-square table and it was found that the critical value is greater than the observed value which means there is an association between gender and accessibility issues.

4. CONCLUSION

This research is an in-depth study to find out the accessibility issues faced by different people in Sri Lanka while they reach public transport. It was found that almost all public transport users have different accessibility issues when reaching public transport in Sri Lanka and the results provide the satisfaction level of public transport users while they are accessing public transport. According to the main findings, more than half of people have missed public transport due to accessibility issues such as overcrowding, inaccessible stops or stations and traffic congestion etc. The most frequent accessibility issue is overcrowding of public transport services (65%). The low cost of public transport services (39%) is the most frequent factor that would encourage people to use public transport more frequently. Identifying the accessibility issues will help to enhance the existing accessibility methods to public transport and it will be helpful for the further developments related to public transportation in Sri Lanka.

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