

STUDENTS PERCEPTIONS ON TRANSJAKARTA SERVICES

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Abstract

At present, Transjakarta is the only public transport system managed by a unit under DKI Jakarta's Government which is run on a special lane called busway. However its services were far from satisfactory. This research will examine the perceptions of students from Tarumanagara University and Trisakti University regarding Transjakarta services. Several constructs were observed, i.e. convenience and safety of bus stop, quality of pedestrian bridge, convenience and safety of buses, bus routes and frequencies, etc. Each construct was then explained by several tangible indicators. Sample size was 200 respondents. Instrument of survey was a questionnaire using Likert scale. Analysis was conducted using Partial Least Square-Path Modelling (PLS-PM) freeware available online called Smart-PLS.

Keywords: Transjakarta Services, Students, Perceptions, Questionnaire, Partial Least Square-Path Modelling

INTRODUCTION

The congestion in Greater Jakarta is a result of several causes. Jakarta is not only the capital city of Indonesia but also has a role as center of business districts. Therefore there are substantial commuter traffic from Greater Jakarta to the heart of Jakarta in the morning and the other way around after office hours especially from Monday to Friday. Lack of satisfactory public transport force residents of Greater Jakarta to commute mainly by private motorized vehicles. As congestion become worse, people tried to shorten the travel time by using motorcycle. At present, Transjakarta is the only public transport system managed by a unit under DKI Jakarta's Government which is run on a special lane called busway. Considering its original intention of the operation system it can be categorized as bus rapid transit (BRT). However its services were far from satisfactory. One of the potential user of this system is university student who has daily travel activity to campus. Therefore this paper is aimed to discuss students perceptions on Transjakarta services.

PREVIOUS STUDIES

One factor that affect BRT ridership is guarantee of its lane exclusiveness. This was not the case for Jakarta [1] and Kuala Lumpur [2]. Lack of enforcement and indiscipline drive were the cause of this problem. Therefore the travel time and the headway of the buses were not satisfactory. Learning the experience from Nagaoka, a city in Japan, the more exclusive the operation of a bus lane the more improved the travel time [3].

Waiting time, travel time and comfortability (bus seats, shelters conditions and boarding/ alighting process) were used as attributes in stated preference questionnaires of to justify new BRT system in Srilangka [4]. The Performance of Batik Solo Trans in Surakarta, Central Java, Indonesia was evaluated by [5]. He used several indicators to express service quality, for example punctuality of the schedule, real time information, shelter attendance hospitality, shelter convenience, etc.

According to [6] in South Korea, there were 3 types of BRT, i.e. Lite BRT, BRT and Full BRT. Full BRT had a metro quality service, integrated network of routes and

corridors, closed/ higher quality shelters, pre-board fare collection/ verification, frequent & rapid service, modern & clean vehicles, and superior customer service.

A study by [7] found that according to Makati-Manila Central Business District (CBD) workers there were several amenities need to be existed in public transport terminals, e.g. security personnel, trip information boards, signs & directions, public assistance booth, rest rooms, telephone booths, convenience shop, food stalls, baggage deposit, seats in waiting area, bicycle racks with security locks and private car drop-off point. In case of Indonesia several other amenities should be added [8] for example parking area for cars/ motorcycles, waste management facilities, prayer room, first aid center, bank, automated teller machine (ATM), etc.

A non-probabilistic sampling survey of limited Transjakarta users [9] found that at least 86% of users believed that increasing the number of fleets and integrating lanes with some shopping centers would be beneficial. Moreover, more than 95% of users thought that timetable information about bus arrival/departure times should be available and maintained. The respondents suggested building more facilities faster, and 84% of users agreed that fare increases are acceptable but the increase should be less than 10%.

According to [10] bus timetable should be revised according to customer needs. Transfer time between bus and railway is one critical parameter of customer satisfaction.

According to [11] the passenger of Transjakarta felt that travel time was the most important variable expressing Transjakarta service performance followed by punctuality, waiting time, security in the bus, security in the shelter, convenience (seat, air condition, lighting), cleanliness of the bus, cleanliness of the shelter, safety, accessibility and completeness of the information, shelter location, bus fare, courtesy & service of the staff and environmental impact.

In Manila there were 10 reasons for passengers to use the mass transit [12]. The most common reason was that it was faster, followed by the destination was closer to the station, more accessible, more comfortable, safer, secure, cleaner, not a car owner, cheaper, rare parking space and expensive parking fare. On the contrary there were several reasons for passengers not to use the mass transit. The most common reason was that the passenger was a car owner, followed by far destination from end station, many transfer, long travel from beginning station, travelling with many luggages, expensive, stations were not accessible, crowding of the train, needs to pick up children, dropped-off by car and not secure, etc.

Theoretically the use of articulated buses would increase the BRT system capacity. However according to [13] it was found that there was a small benefit of using articulated buses in the current system in comparison with using single buses due to operational and infrastructure constraints. The study recommends Jakarta government to improve the system such as increasing the capacity of stopping bays of bus shelters as a pre-requisite.

According to [14] a big portion of Transjakarta passengers was disloyal. Therefore the management needs to continuously improve the services. The government through the Decree of Directorate General regarding Urban Public Transport Management with Scheduled Services No. 687 Year 2002 [15] set up some standards on convenience (seating/ standing facility, air conditioning), safety (luggage rack, cleanliness, well-trained driver/ crew), accessibility (designated shelters, accessible terminal), routes and vehicles. However Transjakarta passengers felt that Transjakarta services were better than the previous regular buses services [16].

METHOD

The data collection was carried out by interviewing 136 Tarumanagara University students and 64 Trisaksi University students. They consist of each 100 male and 100

female. The interview was conducted either in Transjakarta pedestrian bridge connecting Grogol shelter to both universities campus, or in the campus. Respondents interviewed in pedestrian bridge should be passengers of Transjakarta who have just leave the shelter gate or who were about to enter the shelter gate. Respondents interviewed in campus have been chosen among the Transjakarta users who can answer the questions based on their daily experience travelling in the system.

Based on previous studies and discussion with Tarumanagara University Transportation Research Group, the original questionnaire consists of several constructs was prepared. Each construct was explained or formed several indicators. After a pilot study involving 20 male students and 20 female students, validity and reliability tests were conducted and the remaining questions were as in Table 1.

Table 1 Structure of the Questionnaire

No.	Constructs	Indicators
1.	Punctuality	Bus arrival frequency Travel time
2.	Convenience (Bus)	Seating capacity Facility for standing passenger Standing capacity Fare collecting system
3.	Safety and Security (Bus)	The performance of the bus attendant Lighting Driver skill Bus technical condition
4.	Convenience (Shelter/ Terminal)	Seating capacity Length of pedestrian bridge
5.	Safety and Security (Shelter/ Terminal)	Lighting Entrance and exit design Gap between bus and shelter/ terminal platform
6.	The Line	Road condition Exclusiveness

The questionnaires were then filled by 200 respondents. The data were then analyzed using partial least square-path modelling (PLS-PM) freeware called Smart-PLS. Valid indicators should have at least standardized loading factor (SLF) of 0.5. After removing all non-valid indicators, Smart-PLS was rerun to get the final model. In this paper students from different universities were not differentiated. The aggregation was based only on gender.

RESULTS AND DISCUSSION

Figure 1 shows the full model for the female students whilst Figure 2 shows the final model for the female students. Figure 3 shows the full model for the male students whilst Figure 4 shows the final model for the male students. Table 2 shows the summary of valid indicators with $SLF \geq 0.5$. It can be seen that gender affects valid indicators representing students perception on different constructs on Transjakarta services. In punctuality besides share same valid indicator with male respondents (travel time), female respondents add bus arrival frequency. This might be related to their security concern as also described in another construct such as additional valid indicator in safety/ security in shelter/ terminal construct, i.e. lighting. More concern on personal safety and security can also be indicated by different valid indicators with male for safety and security of the bus

construct. Female respondents were more concern on the performance of the bus attendant and bus driver skill compare to bus technical condition which was the concern of the male respondents in bus safety and security. Female respondents might feel intimidated by long ramp of pedestrian bridge to facilitate wheel chair users and therefore concern on this indicator on convenience of shelter/ terminal construct, whilst this was not the case for male respondents.

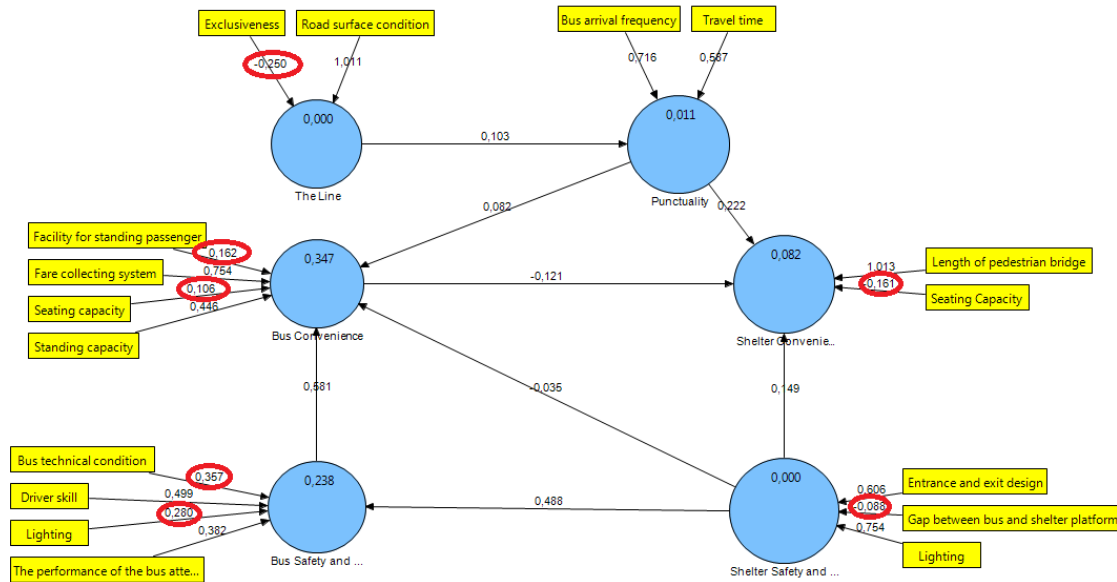


Figure 1 Full Model of the Female Students

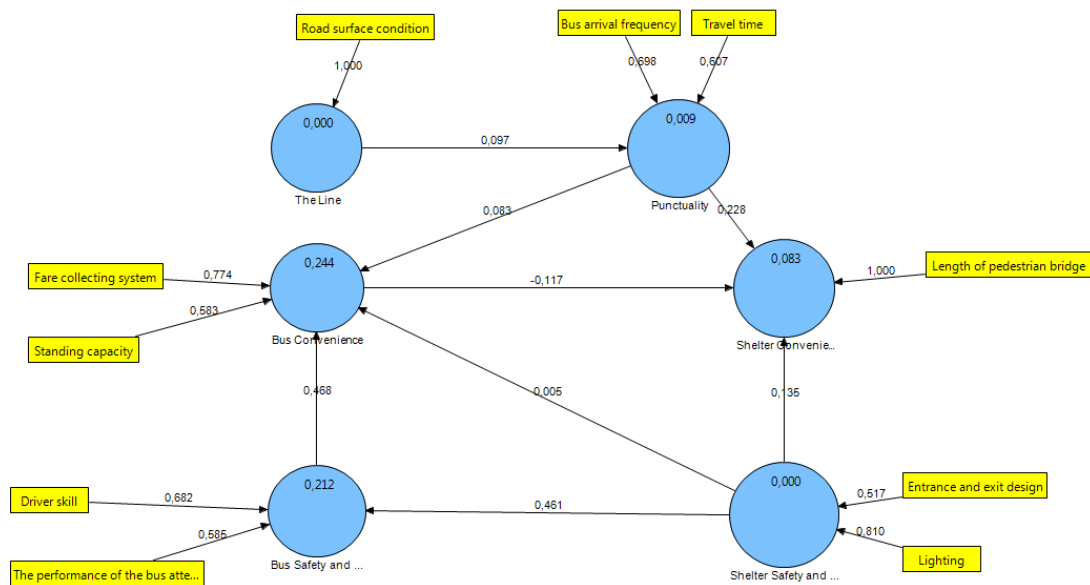


Figure 2 Final Model of the Female Students

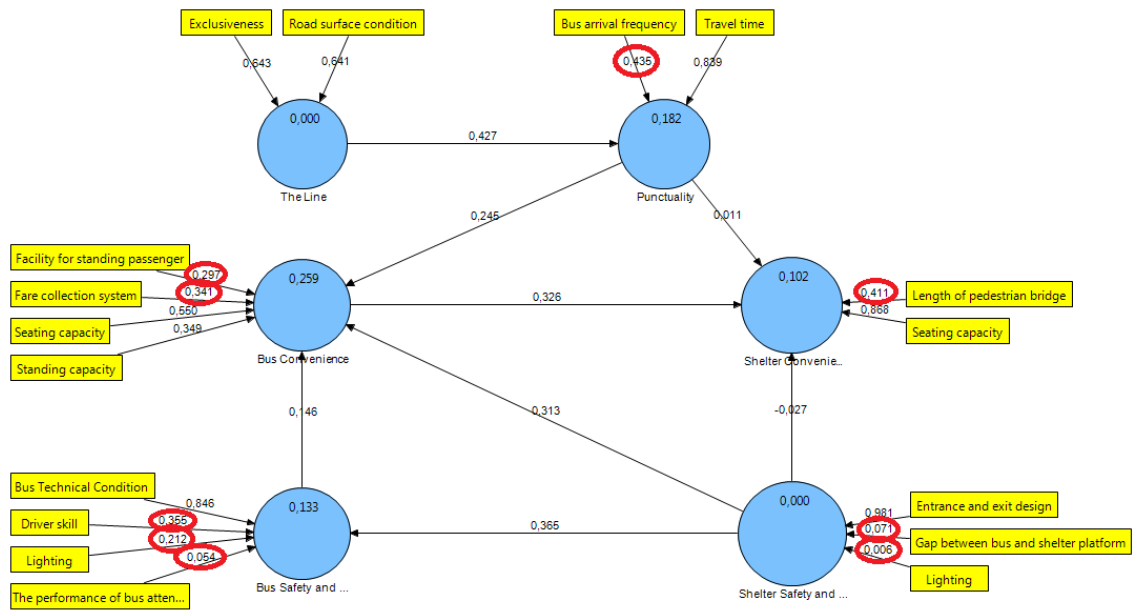


Figure 3 Full Model of the Male Students

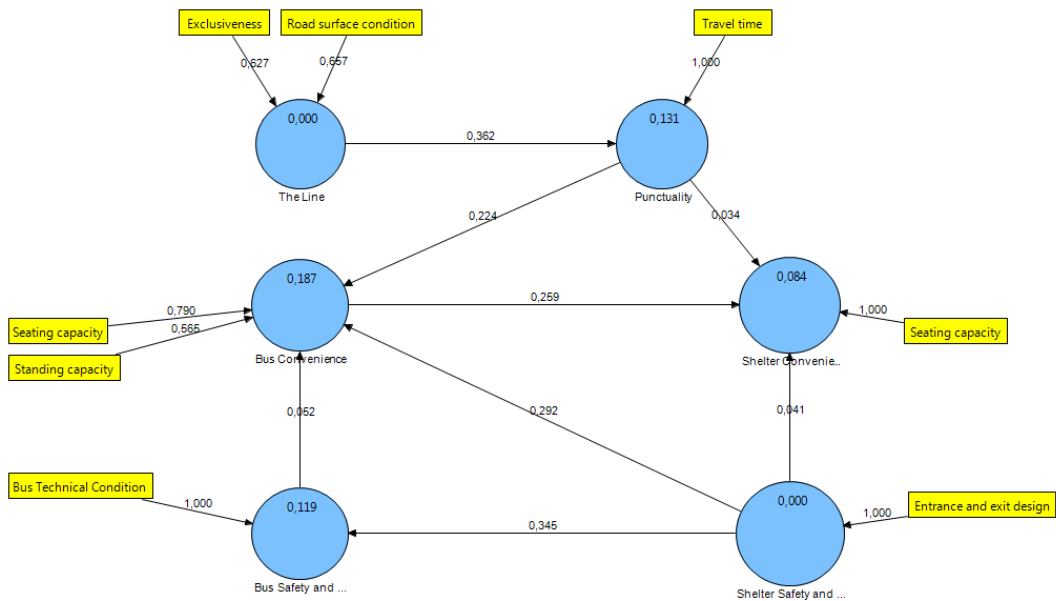


Figure 4 Final Model of the Male Students

Table 2 Summary of Valid Indicators with SLF $\geq 0,5$.

No.	Constructs	Valid Indicators	
		For Male Students	For Female Students
1.	Punctuality	- Travel time	Bus arrival frequency Travel time
2.	Convenience (Bus)	Seating Capacity Standing Capacity	- Standing capacity Fare collecting system
3.	Safety and Security (Bus)	- - Bus technical condition	The performance of the bus attendant Driver skill -
4.	Convenience (Shelter/ Terminal)	Seating capacity -	- Length of pedestrian bridge
5.	Safety and Security (Shelter/ Terminal)	- Entrance and exit design	Lighting Entrance and exit design
6.	The Line	Road condition Exclusiveness	Road condition -

CONCLUSIONS

In general gender affects valid indicators representing students perception on different constructs on Transjakarta services. Female respondents concern more on personal safety and security indicators. They also concern on infrastructure design that was not suitable for them. These should be sorted out by the management of Transjakarta as number of female regular users of Transjakarta is slightly higher than male regular users of Transjakarta.

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