Stakeholders' Perception of Bus Priority Lane on Galle Road & Sri Jayawardhanapura Mawatha Colombo, Sri Lanka

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1. Introduction

Buses have been the main mode of transport in Sri Lanka. However, 'a large number of residents try to avoid using bus transportation due to low speed, lack of comfortability and less punctuality… as examples, bus mode share in Colombo Municipal Council (CMC) boundary area reduce from 65% (in 1985) to 47% (in 2013)' [1]. To overcome this situation, the Megapolis and Western Development Ministry has implemented Bus Priority Lanes (BPL) project in Colombo city and suburban areas with the objective of reducing traffic congestion and promoting public transportation. BPL was first introduced on 15th August 2017, from Kurusa Junction in Moratuwa to the Katubedda Junction on Galle Road.

Many researchers have highlighted that it is important to identify perceptions and attitude concerning BPL from bus riders, bus drivers, car drivers and surrounding activities in the initial stage of the project [2]. Further, researchers argue that modelling and theoretical calculations can give different answers than actual observation, so actual observations are important to know about reality [3], [4]. In backdrop, this study aims to investigate the stakeholders' perception of the newly introduced BPL in Colombo, Sri Lanka.
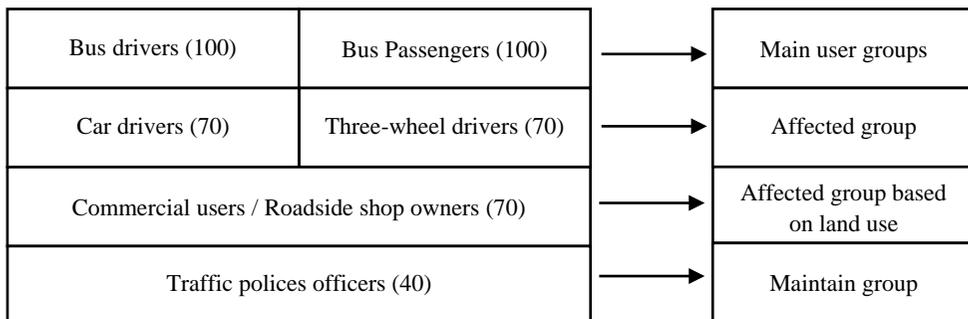
2. Methodology

At first, the study conducted a literature review about BPL characteristics, stakeholders involved in BPL and factors impacting stakeholders with reference to nine case studies in the world.

Next stage, a questionnaire survey was conducted to examine the stakeholders' judgment of BPL. Accordingly, the study collected the stakeholders' judgments about BPL compared to the previous situation with reference to nine factors listed in table 1. The questionnaire survey was carried out along BPL corridors implemented in Galle road and Jayawardenapura Mawatha. The study used stratified random sampling method, and the sample size of the survey was 455. The study recorded the stakeholders' judgment about the situation with new BPL compared to the previous situation using 1-5 Likert scale (1- Greatly exacerbated, 2- exacerbated, 3- Same as previous, 4- Improved, 5- Greatly improved).

Table 1: Factors considered by stakeholders

Stakeholders	Factors								
	Time	Safety	Fuel cost	Access to surrounding land use/activities	Comfortable	Roadside Parking	Income	Violation of road rules	Road self-discipline
Buses	√	√	√	√	-	√	√	√	√
Passengers	√	√	-	√	√	-	-	-	√
Three wheels	√	-	√	√	-	√	√	-	√
Private vehicles	√	√	√	√	-	√	-	-	√
Shop owners	√	-	-	-	-	-	√	-	√
Traffic police officers	-	-	√	-	-	-	-	√	√

Bus drivers (100)	Bus Passengers (100)	→	Main user groups
Car drivers (70)	Three-wheel drivers (70)	→	Affected group
Commercial users / Roadside shop owners (70)		→	Affected group based on land use
Traffic polices officers (40)		→	Maintain group

Figure 1: Characteristics of the sample

3. Results

Table 2: Summary of stakeholder's judgments on BPL by route wise

Routes	Stakeholder groups	Judgments
Galle Road	Passengers	Improved
	Bus drivers	Improved
	Three-wheel drivers	As same as previous
	Car drivers	Degrade
	Commercial users/roadside shop owners	Degrade
	Traffic police officers	Improved
Sri Jayawardanapura Mawatha	Passengers	Improved
	Bus drivers	As same as previous
	Three-wheel drivers	Degrade
	Car drivers	Degrade
	Commercial users/roadside shop owners	Degrade
	Traffic police officers	Improved

Table 3: Summary of stake holder's judgments on BPL by factors

Routes	Factors	Judgments
Galle Road	Time	Improved
	Safety	Improved
	Access to surrounding land use/ activities	Degrade
	Comfortability	As same as previous
	Income	As same as previous
	Fuel cost	As same as previous
	Following road rules	Improved
	Road self-discipline	Improved
	Roadside parking	Degrade
Sri Jayawardanapura Mawatha	Time	Degrade
	Safety	Improved
	Access to surrounding land use/ activities	Degrade
	Comfortability	As same as previous
	Income	As same as previous
	Fuel cost	As same as previous
	Following road rules	Improved
	Road self-discipline	Improved
	Roadside parking	Degrade

The study analysed perceptions of BPL as held by different stakeholders along two BPL corridors selected in the study. For this purpose, the study has employed descriptive analysis and factor analysis method. Table 2 summarises the results. Results indicate that bus passengers, bus drivers, and traffic police groups have judged BPL as having improved the condition whereas car and three-wheel drivers, while commercial users/ roadside shop owners, judged that BPL had worsened the condition compared with the previous situation. The results (Table 3) indicated that travel time and safety are improved on Galle road whereas travel time increased in Sri Jayawardanapura Mawatha. The income levels of buses and three wheelers remain the same as before along both routes while adherence of road rules and self-discipline improved with BPL.

Stakeholder groups have mentioned that due to the following reasons BPL has been exacerbating the condition compare to the previous.

- When entering into lane through the intersection or left side of the road it is affected for all users. (80% from the total sample)
- Vehicles are blocked at interconnections (70%)
- BPL corridor is not physically segregated (60%)
- When turning left the safety of private vehicle users, three-wheel drivers and also buses is affected. (55%)

- BPL corridor is not continuous throughout the main road (40%)
- Lack of awareness of drivers about BPL (15%)

4. Conclusion/Recommendation

This research conducted in the initial stage of BPL in Colombo, Sri Lanka. This study was able to fill the existing gap about stakeholders' perception on BPL. The study was able to identify which factors have been improved, worsened, or remained the same as previous, as well as which stakeholders responded in each manner. Accordingly, this study can be used an instrument to evaluate the effectiveness of BPL and generate planning and engineering solutions to improve the public transportation system in Colombo, Sri Lanka.

References

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