

Poor Road User Practices: Colombo Urban Roads a Case Study

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Abstract

A road user behaviour study was conducted in a busy suburban area outside South-Eastern city limits of Colombo, the capital of Sri Lanka. The study area consisted of heterogeneous vehicle composition; typically combined with high proportion of motorcycles and three-wheelers which are poor in adhering to road rules that could commonly see in most of the South Asian developing countries. Although heavy investments are utilized in road improvement projects in these countries, the outcomes gained often seems to be unsatisfactory. The intent of this study was to find out the reasons for this unsatisfactory outcomes of the investments spent on road improvement projects and look into possible measures to overcome these unsatisfactory outcomes.

The study was conducted in two parts; (i) road user behaviour study, and (ii) field consultation study. Through the road user behaviour study the undesirable practices of all road users such as; passenger vehicles, motorcycles, three-wheelers, buses, trucks, pedestrians and excessive noise were directly identified. It was seen from the consultation study results the varied expectations of different categories of road stake holders' were different from category to category and biased towards their advantage. Finally through this study it was observed that the maximum benefits expected from investing on road improvement projects are not fully realized when poor road user practices are being adopted by the stake holders'.

Keywords: poor road practices, Colombo urban roads, road indiscipline.

Introduction

Poor vehicle composition; especially with high proportion of motor-cycles and three-wheelers combined with other motorized vehicles may result in dual problem of poor traffic flows and high rate of road risk on urban roads (Weerasekera, 2008; Bandara, 2011). This was evident from a study conducted around relatively busy suburban areas of Nawala and Nugegoda (i.e. outside South-Eastern city limits of

Colombo, Sri Lanka). It was observed that inefficient use of the road system and poor road user behaviour is a major contributor to traffic problems, even where there is no shortfall in road capacity. Hence the heavy investments spent on road improvements are not fully harnessed unless road user behaviour practices are improved (Edirisinghe; 2011, Jayatilake et al., 2017; Dharmakeerthi & Sathyaprasad; 2017). This study intends to highlight the importance of improving the road user behaviour to maximize the benefits obtained from road improvement projects and increase road efficiency.

The area indicated in Figure 1 was selected as the area of study which is the South-Eastern city limits of Colombo. During the study number of road users who are accustomed to the area for the last 25 years, consisting of drivers, residents, businessmen, daily office travelers and pedestrians of the area were consulted. Consultations consisted of question and answer sessions posing different types of questions regarding road user behaviour patterns of multitude of road users who are familiar with the study area.

Methodology

Road user behaviour & field consultations

Due to the increase of road users over the time and improvement of vehicle engine efficiencies the problem of accidents is becoming more severe in highway engineering. Hence the responsibility of traffic engineers to carry out systematic studies of traffic accidents and to find out the main causes for accidents and finally to come-up with preventive or remedial measures is important. Level of safety of a road system is influenced by the behaviour practices of all road users, not only driver behaviour alone. The other types of road users in addition to standard passenger car & SUV drivers include; motor-cycle riders, three-wheel operators, bus and truck drivers and pedestrians. Colombo traffic composition is different from most of the developed countries due to its extremely heterogeneous vehicle fleet and very high proportion of motor-cycles and three-wheelers. Hence all the road users and their all behaviour practices have to be studied carefully to improve road safety and road efficiency under the existing extremely complicated situation. This has been observed by Roberts and Simmonds (1995) and Howorth, (1995) in their work too.

In addition to consultations, an observational study was performed to observe and determine road user behaviour operations. Twelve observation locations were selected as indicated in Figure 1 which is distributed along the road network under study. The observations carried-out were initially focused to study the behaviours reflecting violations of road rules and other dangerous road behaviour practices. The road user characteristics which carefully observed were; lane discipline, roadside parking & friction, turning movements, failure to giveaway, irregular lane swapping, bus driver arrogant behaviour and not properly stopping at bus-stops, road rage by large vehicles and the pedestrian movements. Each study location (see Figure 1) was under observation for one-hour duration during busy daytime.

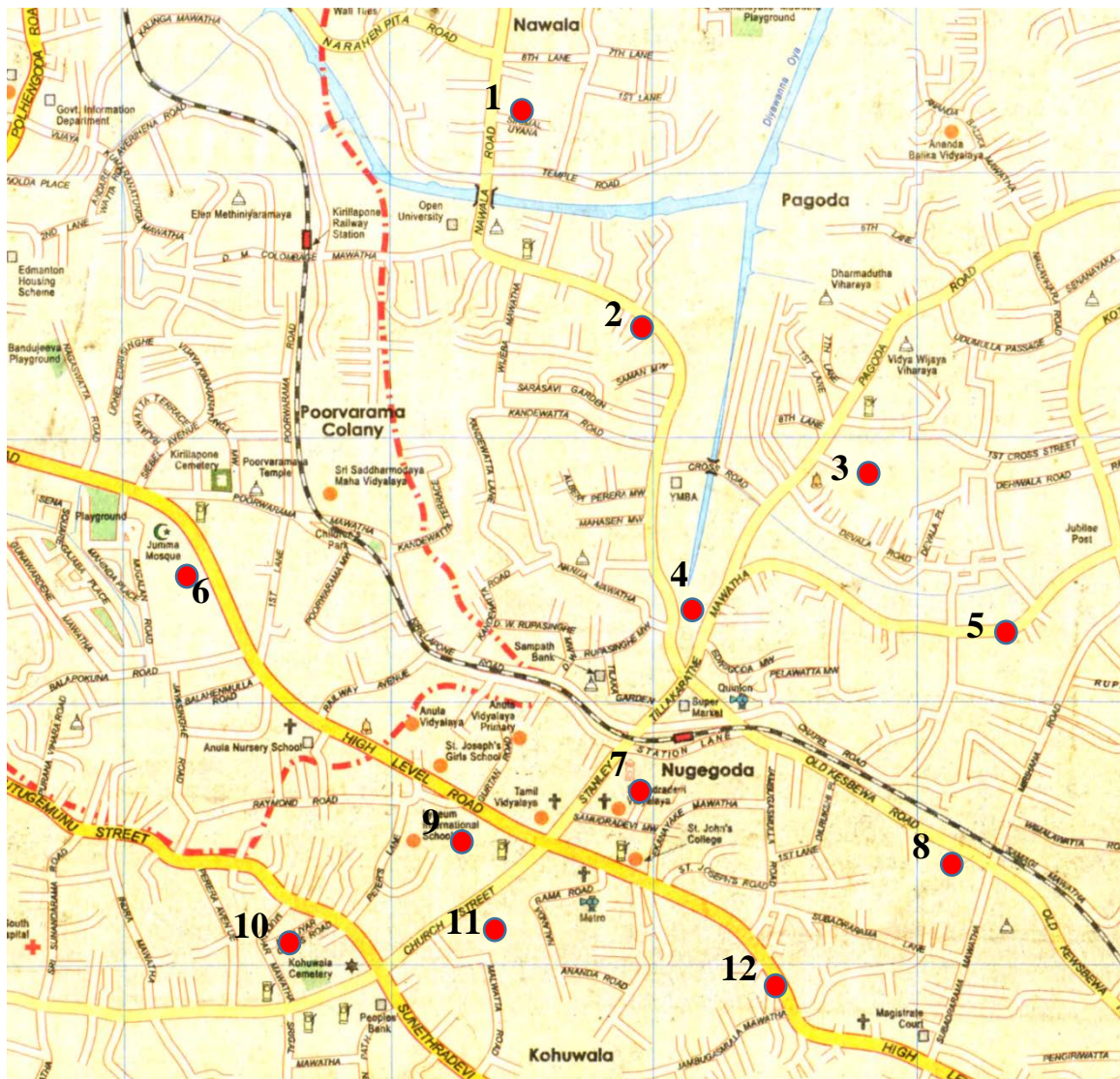


Figure 1 - Road network of the study area

Road user behaviour study results

Different types of road-user behaviour practices for different categories of road-users were identified and are categorized as indicated in Table 1 below.

Table 1 - Observed behaviour types of different road-user types

Road-user type	Observed behaviour type
1. All vehicles	<ul style="list-style-type: none"> • Reluctance to giveaway at signalised junctions and small roundabouts • Reluctance to giveaway at prioritized junctions • Unauthorized roadside parking

	<ul style="list-style-type: none"> • Unnecessary lane changes and overtaking
2. Motor-cycles	<ul style="list-style-type: none"> • Pillion passengers not wearing helmets • Squeeze through other piled vehicles • Keeping too close to other vehicles • Riding on sidewalks • Sometimes excessive speeding • Cutting across lanes dangerously • Riding while talking through mobile phones • Overtaking from left
3. Three-wheelers	<ul style="list-style-type: none"> • Not sticking to lanes • Sudden lane changes • Excessive noise • Travel on wrong side • Cutting across lanes dangerously • Overtaking from left
4. Buses	<ul style="list-style-type: none"> • Blocking other vehicles • Not always stick to assigned bus stops • Overstaying at bus stops • High speeding • Travel on two lanes • Sudden stopping dangerously • Not using indicators during lane changing or turning • Excessive use of loud horns
5. Trucks	<ul style="list-style-type: none"> • Blocking other vehicles • Aggressive driving • High speeding • Travel on two lanes • Not using indicators during lane changing or turning
6. Pedestrians	<ul style="list-style-type: none"> • Often not using footpaths • Jaywalking • Not using zebra crossing
7. Excessive use of horns	<p>Excessive use of horns (sometimes very loud) very frequently by Colombo drivers is frustrating. When closely studied it was found that the reasons are as follows:</p> <ul style="list-style-type: none"> • To alert slower vehicles to make way • To alert pedestrians on road of approaching vehicle • By bus drivers to attract the attention of people at bus stops • To express annoyance • To facilitate overtaking • To alert motor-cycles and three-wheelers • By three-wheel operators to mark their presence

It could be seen that similar results have been obtained by Haworth (1995) in Dhaka, Bangladesh which has somewhat similar traffic conditions to Colombo.

Field consultation study results

The results obtained from consultation studies are summarized in Figure 2 below.

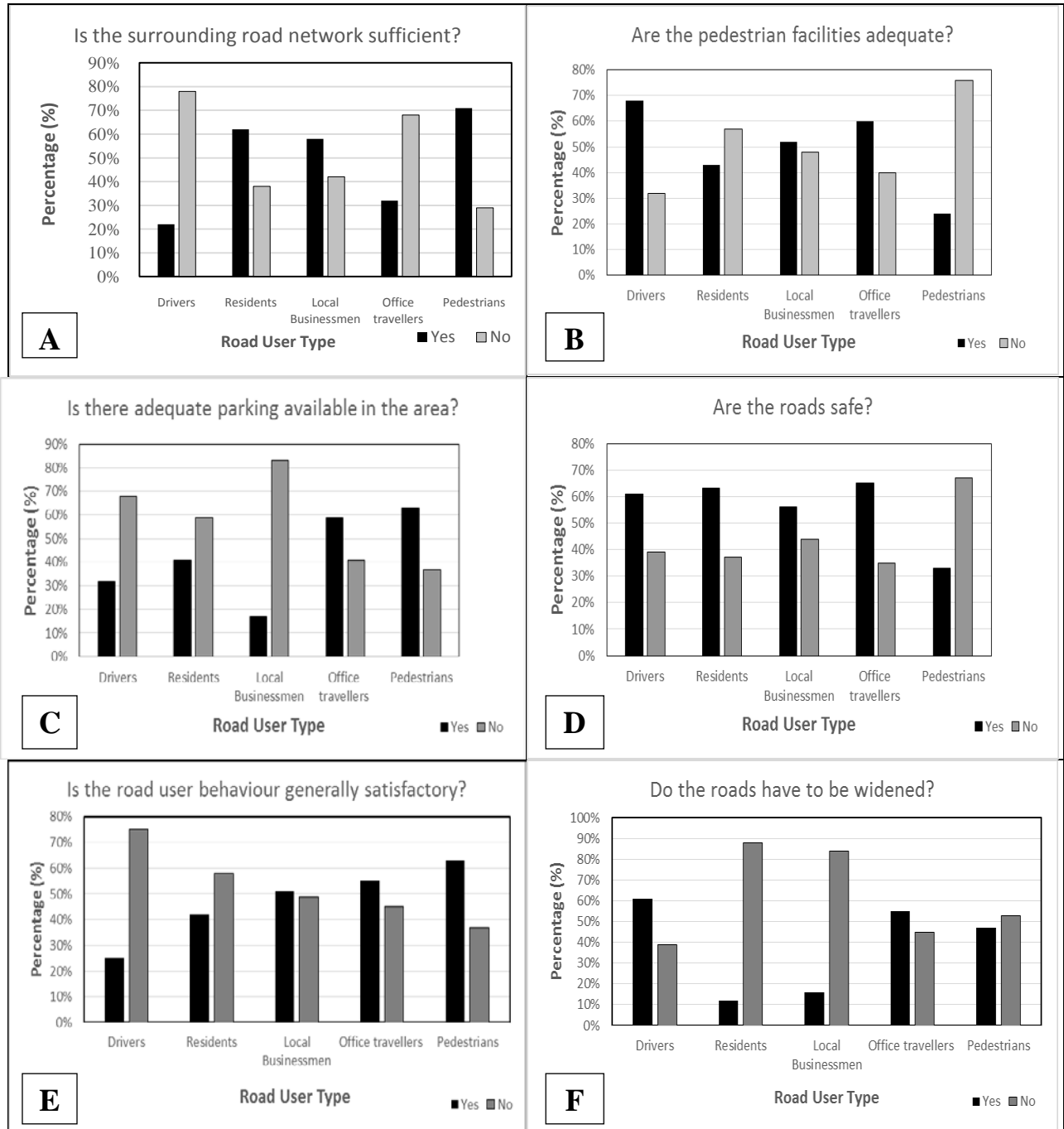


Figure 2 - Consultation study results

Discussion

It is clear from Figure 2A that drivers are the most unhappy about the inadequacy of surrounding road network and closely followed by office travellers. On contrary it is

observed that pedestrians are happy about the surrounding road network. It also observe that residents and local businessmen too are generally satisfied with the adequacy of the surrounding road network.

From Figure 2B it is seen that pedestrians are generally worried about the inadequate pedestrian facilities available. Generally residents too are not much satisfied about the adequacy of pedestrian facilities that are available currently. On contrary drivers are least worried about the availability of pedestrian facilities.

Figure 2C clearly indicates the unhappiness of local businessmen and drivers about the inadequacy of parking facilities. It's also clear even the local residents expect a higher level of parking facility in the area. It also could be noted that pedestrians and office travellers are not bothered about parking facilities available in the surrounding areas.

From Figure 2D it is indicated that except pedestrians all the other categories generally satisfied about the safety level of these urban roads. Majority of the pedestrians do conclude that the roads are not safe.

Figure 2E indicates that mainly drivers and residents complain about the unsatisfactory level of road user behaviour, but local businessmen and office travellers are not much concerned about the road user behaviour. The pedestrians have an opposite view that they think the road user behaviour is satisfactory from their point of view.

From Figure 2F it is interesting to note that greater majority of residents and local businessmen are not in favour of widening the roads fearing that their land will get affected. But on contrary all the other categories majority do agree in widening the roads.

It could be seen from the consultation study results that the expectations of different categories of stake holders' were different from category to category probably biased towards their advantage. For instance many drivers and through travellers preferred road widening to be carried-out, but residents and road side business community were against road widening since they were going to be affected. It also could see that pedestrians were unaware of the road capacity situation, but they were much worried about the lack of pedestrian facility in the area. When it comes to adequacy of parking in the area mainly business community and drivers were not happy about the inadequacy in parking availability although travellers and pedestrians were least bothered about parking facility in the area. It can be seen that generally all the categories of road users were concerned about the road safety; especially pedestrians and drivers had a high priority concern for improving road safety. Most of the drivers were not satisfied with the behaviour of the road users in general. In this regard pedestrians were the least bothered.

Conclusions

Road safety depends when road user behaviour is combined with vehicle and road characteristics. Hence road user behaviour of vehicle drivers is due to; lack of understanding of road signs and some carriageway markings, lack of knowledge of priority rules, right of way concept is not properly understood and practiced, reversing to main roads obstructing the main flow is commonly observed, roadside parking causing side friction, and road raging by bus and heavy vehicle drivers. It could be clearly seen that efficiency of a road much depends on smooth traffic flow along the roads with; (i) least side friction along mid-blocks, and (ii) orderly maximum throughputs at intersections. The main reasons that increase side-friction and flow in mid-blocks is due to; unnecessary lane changing on roads, roadside parking and slowing down due to business activities along the sides of main roads, vehicles cutting across lanes and parking along opposite side of the road and buses overtaking and competing with each other.

The road regulations and conditions that the road users have to adhere are; condition of vehicle (road worthiness), adhere to speed limits in urban areas, adhere to give-way and priority regulations, adopt correct overtaking practices, buses to stick to assigned bus stops, adhere to post accident practices, adhere to correct parking practices, stick to lane discipline and strictly adhere to obligations at pedestrian road crossings.

References

- Bandara, J. M. S. J. (2011). Need for an integrated highway management system: Developments in Sri Lankan context. *Proceedings of the Joint Int. Symposium on Social Management Systems (SMSS-2011)*, (pp. 700-703) Colombo, Sri Lanka.
- Dharmakeerthi, U. G. S. & Sathyaprasad, I. M. S. (2017). Development of trip attraction rates and parking standards for supermarkets in Kandy area. *Proceedings of the 5th International Symposium on Advances of Civil and Environmental Engineering Practices for Sustainable Development (ACEPS-2017) March 2017* (pp. 198-205) University of Ruhuna, Galle, Sri Lanka.
- Edirisinghe, J. E. (2011). Driver behaviour at pedestrian crossings. *Proceedings of the Joint International Symposium on Social Management Systems (SMSS-2011)*, (pp. 696-700) Colombo, Sri Lanka.
- Howorth, N. (1995). Road user behaviour and safety in a developing country. *Proceedings of the 7th World Conference on Transport Research (WCTR), July 1995*, (pp. 302-306), Sydney, Australia.
- Jayatilake, P. A. S. R., Premachandra, B. M. N. M. and Wickramasinghe, W. M. V. S. K. (2017). Variation of the start-up time of pedestrians with their familiarity to the signal phase. *Proceedings of the 5th International Symposium on Advances of Civil and Environmental Engineering Practices for Sustainable Development (ACEPS-2017) March 2017* (pp. 206-212) University of Ruhuna, Galle, Sri Lanka.
- Roberts, M. & Simmonds, D. C. (1995). A strategic modelling approach for urban transport policy development. *Proceedings of the 7th World Conference on Transport Research (WCTR), July 1995*, (pp. 285-289), Sydney, Australia.
- Weerasekera, K. S. (2008). *Towards Better Roads*. P & P Associate Press, Rajagiriya, Sri Lanka.