

Human Activities and Road Traffic Accidents in Sri Lanka

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Abstract

Due to the rapid urbanization, industrialization and migration, and other social changes, the needs of travel in whole age group throughout the country have increased. The use of vehicles is also increasing in order to perform the same tasks efficiently and effectively. Compared to the increase in population and vehicle usage, RTAs also show significant growth globally. Hence, Road Traffic Accidents (RTA) have become a common health issue for the whole world. According to statistics, there are about 1000 RTAs per week in Sri Lanka. As a result of RTAs, nearly six people die daily, and nearly 30 people are injured daily. Accordingly, over 2000 people die due to RTAs every year. Based on the increasing number of RTAs related to Sri Lanka 2007-2015, the aim of the study was to identify the impact of human activities on Road Traffic Accidents in Sri Lanka. Accordingly, a study was mainly based on secondary data and at the end of the study were identified speeding, negligence of road users and alcohol abuse as the main factors of accidents.

Key Words: Road Traffic Accident, Human Activities, Transport

1. Introduction

At the beginning, people used transport only to move from one place to another for their day to day needs. Over the years, the role of transport got upgraded itself, connecting villages, towns, cities and countries (Pirrasath Selladurai & Peethamparam Jeepara, 2011). Today, it has achieved the levels of dominating the entire land, sea and the sky of the world, together with, the total life style of the man. In the Sri Lankan context, too, having passed all its evolutionary stages, Transport Sector has secured a dominating role as an essential service, directly influencing income and productivity levels of the country, and becoming the forerunner of its sustainable economy.

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The backbone of the transport system is the road system. It is important for the transportation of people and goods, and plays an important role in the integration of the country, economic growth and, ultimately, poverty reduction. However, Road Traffic Accidents (RTA) can be identified as a major avenue for countries facing the road network. This RTAs can be described as a public health problem affecting developed and developing countries in the world.

After the end of civil war, RTAs have become the most severe problem in Sri Lanka. Younger generation, the age group 21 to 29 is the most affected party of fatalities in RTAs and this situation emphasizes the intensity of the problem. Number of people died and injured in RTAs has increased significantly (National Transport Commission, 2014). The number of people died and injured in RTAs is continually increasing in Sri Lanka. Of these the number of pedestrians injured and killed in road traffic accidents is most significant. As such, making efforts to decrease both victims and responsible offenders is indispensable to reduce road traffic accidents (S. Renuraj N. Varathan & N. Satkunanathan, 2015).

The number of people died and injured in RTAs is continually increasing in Sri Lanka. The total fatal RTAs records 2,260 in 2014 and 2,440 people died by them. Pedestrians are the most significant road user category died by RTAs. Year 2015 has recorded fatal accidents increase by 15.04% and grievous injury by 15.77 % compared to the year 2014 (National Transport Commission, 2016).

A driver who fails to use proper care, pay adequate attention to the road or drive in a safe manner is considered careless. Careless driving is one of the leading causes of auto accidents. When a driver fails to drive with due care, it can cause serious harm to others sharing the road. It include, texting while driving, Driving at an unsafe speed, failing to maintain a safe distance behind other automobiles, causing an accident involving another vehicle, pedestrian or cyclist, running a stop sign or red light, Failing to check mirrors when changing lanes or driving in reverse and the general failure to provide proper care.

Currently, RTAs have taken 9th place among the major causes of death when we take globally. RTAs have been identified as a major contributory factor for the death of young population aged 15-29 years (World Health Organization, 2015). More than three thousand RTAs will happen per day in the world. For this reason, the world loses more than 1.3 million lives annually worldwide, while 20 to 30 million people are disabled. World Health Organization's Global Status Report On Road Safety (2013)

has also said that with the current trend of the rising road traffic accidents can create RTAs as the fourth major cause of human deaths through the year 2030.

Nearly half of people who die from RTAs in the world, are underneath road users like pedestrians, cyclists, motorcyclists and three-wheelers (World Health Organization, 2015). In average, middle and lower income countries in the world have twice the level of RTAs like high-income countries. When considering about RTAs in some of the developed countries of the world, In the United States alone, more than 37,000 people are killed annually by fatal RTAs. Also, about 2.35 billion people are injured as well as disabled (Salesforce, 2015).

In United Kingdom more than 2000 people die annually because of RTAs and the number of deadly wounded are around 23,039. (Department of Transport, 2015) In the first ten months of 2014, China has recorded 87,218 deaths from total of 426,378 accidents. Data reports show that RTAs in China are increasing by 1.9 % annually. (Liu, Chen, & Lu, 2016)

2. Research Objectives

The main objective is to identify the impact of human activities on road traffic accidents in Sri Lanka. The sub objective is to study the trends of RTAs and to investigate the nature of the accidents in Sri Lanka related to the years.

3. Review of Literature

Driving is a complex task. In order to understand how the human factor is associated with the occurrence of Road Traffic Accidents, it is necessary to understand this task. A well-established theoretical approach to distinguish between different aspects of the driving task is the synthesis of the task hierarchy model (Michon, 1985) and Rasmussen's skill, rule and knowledge framework (Rasmussen, 1983, 1985).

Driving requires the driver's full attention. Generally, attention can be divided into mental overload and mental under-load (Belachew M, 1997) the former leading to distraction, the latter to state of drowsiness.

A traffic collision, also known as a road traffic accident, occurs when a vehicle collides with another vehicle, pedestrian, animal, road debris or other stationary object such as a tree or utility pole. Traffic collisions may result in injury, death and damage to property (Pirrasath Selladurai & Peethamparam Jeepara, 2011).

Road traffic crashes are responsible for a substantial fraction of morbidity and mortality and are responsible for more years of life lost than most of human diseases. (Eleni Petridou & Maria Moustaki, 2000). Traffic accidents have become a very serious public health problem around the world. It was identified as one of the leading causes of the death and injury in Sri Lanka (S. Renuraj N. Varathan & N. Satkunanathan, 2015).

Accidents, tragically, are not often due to ignorance, but are due to carelessness, thoughtlessness and over confidence. William Haddon (Head of Road Safety Agency in USA) has pointed out that RTAs were associated with numerous problems each of which needed to be addressed separately. (Nilambar Jha D.K. Srinivasa Gautam Roy & S. Jagdish, 2004)

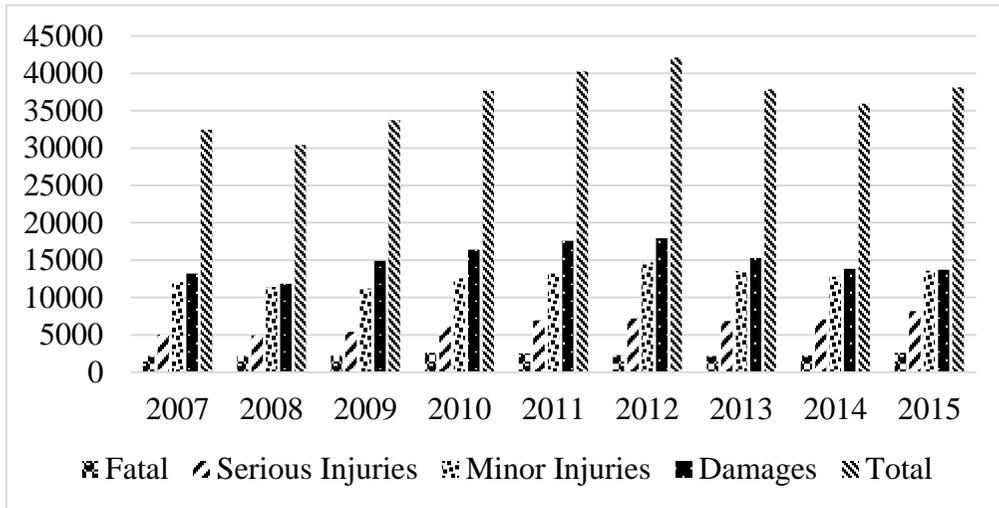
4. Methodology

The study was basically based on secondary data. For this, traffic police data reports, National Transport Commission Statistical reports, Road Development Authority's reports on traffic accidents in Sri Lanka from 2005 to 2017 have been used. This study has mainly focused on the Western Province's Colombo Traffic Police are because most of the accidents occur in Colombo traffic area. 4672 accidents were happened in Colombo traffic area in 2015.

5. Data Analysis

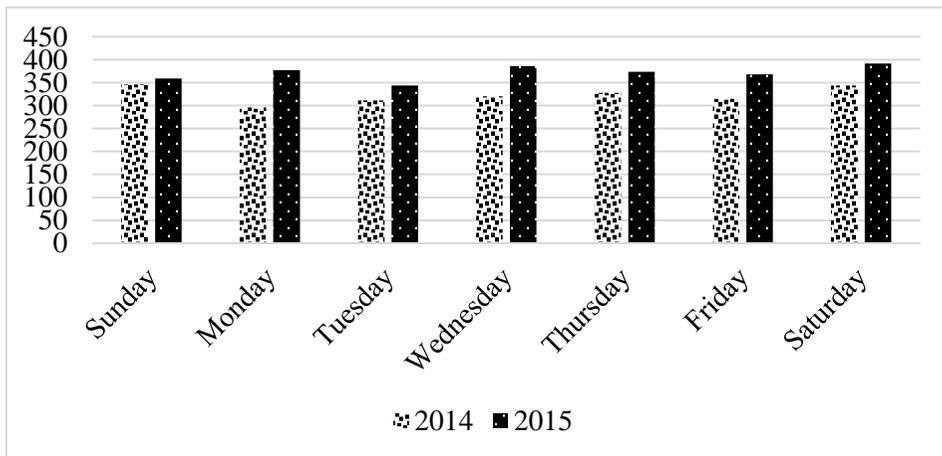
The number of RTAs reported from 2007-2015 show that the highest number of accidents were in 2012. Total number of accidents has declined in 2014/2015 because of the reduction in the number of minor injuries and damage accidents. But in comparison, fatal traffic accidents and serious injury accidents have increased.

Figure 1. Type of Road Traffic Accidents



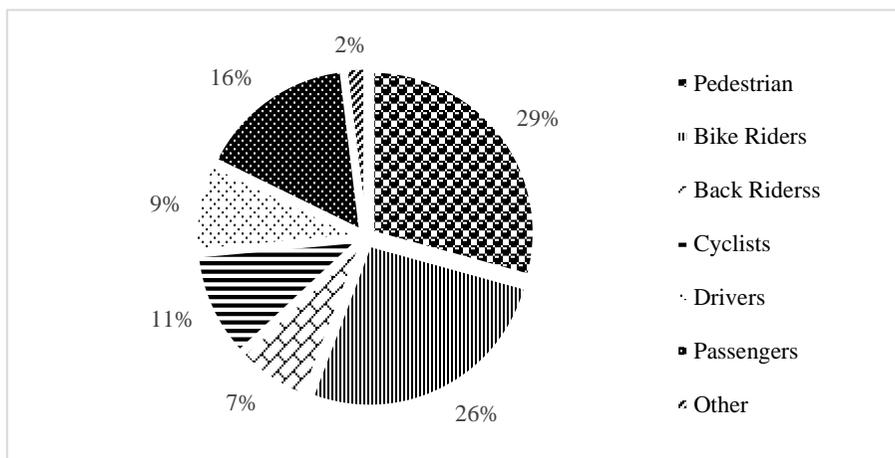
Sources : Traffic Head Quartest, Sri Lanka Police (2007-2015)

Figure 2. Fatal Accidents by the Day



Sources : Traffic Head Quartest, Sri Lanka Police (2014-2015)

Figure 3. Type of Road Users Died



Source : Traffic Head Quartest, Sri Lanka Police (2015)

In 2015, most of fatal accidents were happened on Saturday. Most of people who killed by RTAs are Pedestrians and it is about 30% from the total deaths due to RTAs. After pedestrians, most of deaths are bike riders. The main causes of these deaths are lack of care, high speed and not wearing helmets. Most of bike riders who died in RTAs are Youngers. Deaths among road user's pedestrians and bike riders are unique.

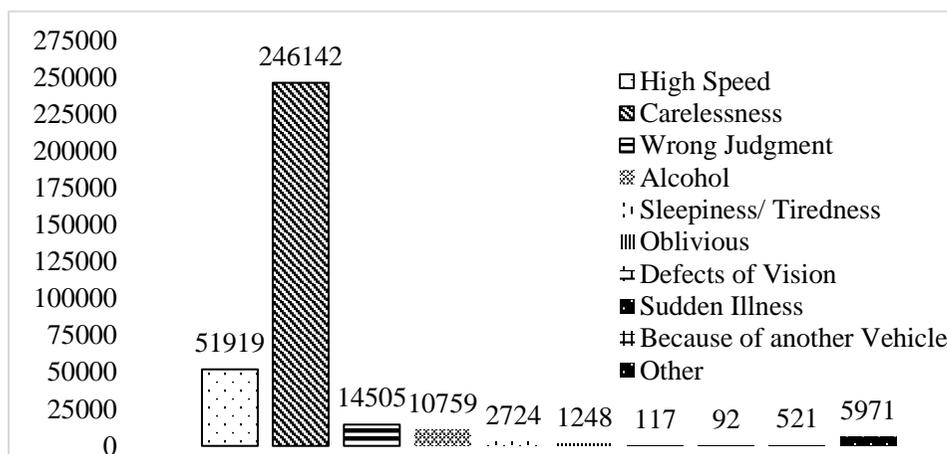
It can be identified that the main human factors which affecting to RTAs in Sri Lanka are Carelessness, high speed, driving after using alcohol and wrong judgments. According to the below, the main factor for RTAs is carelessness of both drivers and pedestrians. Carelessness have been the cause for 246142 accidents from 2007 to 2015. The other factor is high speed. It has been caused for 51919 accidents from 2007 to 2015 in Sri Lanka.

So most accidents have been caused by carelessness and high speed driving. In 2014, 3003 deaths occurred due to RTAs. There is an increase of 3.3% over the previous year. From the deaths in 2014, 1998 were males and 442 were females. The majority of the deaths occurred in the 25-30 age group.

Table 1 shows that, Motorcycle accidents are the most reported traffic accidents every year. When focused on the data from 2007 to 2015, Motorcycles and three-wheelers are the most reasonable vehicle to fatal accidents. Motorcycle accidents are responsible for nearly 30% of RTAs. The second place of RTAs belongs to the three-

wheelers. In 2014, most of passengers died because of three-wheel accidents. From that, 66% are male and 34% female.

Figure 4. Causes for Road Traffic Accidents



Sources : Traffic Head Quartest,Sri Lanka Police (2007-2015)

Table 1. Type of Vehicles Caused for Road Traffic Accidents.

| Caused Vehicle for Accidents | Year | |
|------------------------------|------|------|
| | 2014 | 2015 |
| Motor Cycles | 845 | 1030 |
| Lorry | 329 | 310 |
| Dual Purpose | 259 | 280 |
| Private Bus | 180 | 201 |
| Three-wheel | 274 | 328 |
| Car | 113 | 172 |
| Escape | 92 | 112 |
| CTB Bus | 56 | 67 |
| Cycle | 38 | 42 |
| Tractor | 51 | 31 |
| Container | 8 | 21 |
| Property Vehicle | 15 | 6 |
| Total | 2260 | 2600 |

Sources : Traffic Head Quartest, Sri Lanka Police (2014-2015)

Table 2. Vehicle Population.

| Year | Vehicle Population | Accidents |
|------|--------------------|-----------|
| 2007 | 3125794 | 32458 |
| 2008 | 3390993 | 30420 |
| 2009 | 3595068 | 33721 |
| 2010 | 3954311 | 37653 |
| 2011 | 4479732 | 40258 |
| 2012 | 4877027 | 42145 |
| 2013 | 5203678 | 37877 |
| 2014 | 5633234 | 35966 |
| 2015 | 6302141 | 38107 |

Sources : National Transport Board, Sri Lanka (2007-2015)

According to the study dependent variable is RTAs and the Independent variable is Vehicle population. The relationship between the vehicle population and the RTA is positive and it is not a strong bondage. Accordingly, the correlation between the number of accidents and the RTAs in Sri Lanka is 0.597.

6. Discussion and Conclusion

Over the past decade, the highest number of RTAs has occurred in 2012. Overall, growth in the Sri Lanka's RTAs has been identified. RTAs in 2006-2008 and 2014 were noticeable but it has increased again in 2016.

Among the factors that have contributed to RTAs are the driver's negligence, the speeding up of driving and the danger of drug use. Due to the extraordinary nature of the ailments, most of the lives are lost in males, and most of them are drivers and pedestrians. The highest number of deaths were recorded in three wheeler accidents while in RTAs.

Three-wheelers are the second most influential drivers in the event of fatal accidents. Its first places are motorcycles. On weekends where the population is mostly concentrated, RTAs have seen a marked increase in RTAs. In general, the main reasons for most of the accidents are human errors. So road users need to pay attention on it.

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