

A study on road accidents in Kurunegala district in year 2014

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Road accidents have become a major killer and every year, more than 40,887 accidents transpire in Sri Lanka resulting in an average of six fatalities per day. Many get severely injured or get disabled for the life time. Kurunegala district belongs to the Northwestern province of Sri Lanka and due to its status as a cross roads district, a considerable number of accidents comprising more severe accidents take place daily. Therefore, this study was carried out to identify the factors affecting accident severity in Kurunegala district and to make a comparison between the factors affecting accident severity in urban and rural areas of Kurunegala district. The road accidents that have taken place within the year 2014 were considered and the relevant data was gained from the Kurunegala traffic division. To achieve the objectives of the study, the response of interest was categorized to have three levels without much loss of information. Due to the ordinal nature of the dependent variable, ordinal logistic regression analysis was selected. Thus, two continuation ratio logits were fitted to model the accident severity in Kurunegala district and two proportional odds models were fitted to model the accident severity in urban and rural areas respectively. The odds ratios for each of the models were also calculated. The results indicated that the factors, 'Number of casualties', 'Number of vehicles' and 'Station (the relevant police territory)' were affecting towards the increased accident severity at all levels in Kurunegala district. Moreover, 'Faulty driver's age' was affecting the accident severity only in urban areas whereas 'Weather' and 'Element type (vehicle type)' were affecting the accident severity only in rural areas. Thus, two continuation ratio logits can be used to predict the accident severity in Kurunegala district and two proportional odds models can be used to predict the accident severity only in urban and rural areas of Kurunegala district respectively. Therefore, the findings of this research study may offer valuable insights to road designers, traffic police and other authorities to take efficient safety measures in reducing the accident severity and the occurrence of crashes.

Keywords: Accident severity, Odds ratio, Ordinal logistic regression