



Ranking and Determining the Factors Affecting the Road Freight Accidents Model

Masoud Bagheri Ramiani ^{a*}, Gholamreza Shirazian ^b

^a PhD Student of Transportation, Department of Civil Engineering, Shomal University, Amol, Iran.

^b PhD of Transportation Engineering, Department of Civil Engineering, Shomal University, Amol, Iran.

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Abstract

The tremendous growth of population, particularly in developing countries, has led to increased number of travels, especially those with load and freight specifications. Hence, expanding the present facilities or developing new networks or systems concerning freight and transportation is an essential issue. Among the various transportation systems, road freight has secured a significant place in sub-urban transportation, as it is responsible for transporting loads, decreasing transportation costs, and increasing the safety of highway users. Besides these advantages, poor and nonstandard design and performance of sub-urban highways and transport fleet and equipment leads to the increased number of accidents and inefficiency of these facilities. Based on these facts, the primary aim of the present study is to probe into the factors affecting road freight accident severity. For this purpose, the data obtained from road freight accidents occurring in 2016, 2017, and 2018 in Gilan Province, Iran, were used for analyzing the frequency, ranking and determining the factors, and creating models for accident severity. The results indicated that in accordance with the accident severity model in 2016, several factors such as the season of autumn, daytime light, drivers aged from 18 to 60, and pickup trucks have impacted the on-road freight accident severity. While, in 2017 the severity was affected by factors like rural road, freight trucks, non-faulty passenger cars, motorcycles, and pedestrians. When considering the effective variables in 2018, it was found that such factors as the accident time (usually occurring between 12 p.m. to 6 p.m.), rural and major roads, freight trucks, non-faulty motorcycles, and the careless driving without due care and attention to the front were the variables affecting road freight accidents. Moreover, not following safety guidelines during freighting is the most effective variable in road freight accidents.

Keywords: Accidents; Road Freight; Cargo; Damage; Injury; Fatality.

1. Introduction

Over the last decade and also nowadays, road accidents have experienced an increasing trend; and there have been various studies on accidents around the world [1-3]. Road accidents are considered to be a typical phenomenon all over the world and approximately 1.3 million civilians die as a result of this phenomenon. Moreover, approximately 20 to 50 million people have been injured in these accidents, where the majority were young people with ages ranging from 15 to 45. Road accidents are claimed to be the ninth most important factor of fatality in the world as it accounts for 2.2% of the mortality rate in the world. The costs of accidents are estimated to be about 500 million dollars all over the world. This is equal to between 1 to 2 percent of GDP in the countries with low to average income. The current trend of accidents indicates that if emergent measures are not taken in this regard, it is likely that road injuries will

* Corresponding author: mbrpost@yahoo.com

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