A holistic approach for assessing traffic safety in the United Arab Emirates

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Traffic accident and fatality rates can be utilized as indicators of traffic safety, but cannot reflect the overall status of traffic safety in a country. This paper uses a holistic perspective approach to investigate traffic safety in the United Arab Emirates (UAE). Initially, 12 potential items were selected to investigate the issue of traffic safety in the country. The investigation included data collection and analyses from official police reports, survey among road-users and interview of traffic safety experts. Based on data analysis and interpretation, the main factors affecting traffic safety in the UAE along with their level of deficiency were identified. The study revealed that the main factors contributing to traffic safety in the UAE are driving behaviour, awareness, education and training, infrastructure, vehicle, law enforcement, coordination and quality of resources. Among these factors, a major deficiency was found in the “driving behaviour”, a minor deficiency in “vehicle safety”, and a moderate deficiency in the others. Based on the deficiency level of the factors recommendations were proposed to improve the status of traffic safety in the country.

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1. Introduction

Research on road safety proves that accidents are predictable, and therefore, could be avoided. At least, efforts could be made to minimize the consequences, injuries and fatalities of accidents. Understanding the nature and dimensions of the traffic safety matrix is quite essential to identify accident-leading causes and ways of effective prevention (Andersson and Menckel, 1995). Over the past two decades, many developed countries were successful in establishing strategies and effective measures to reduce the number of road-crash fatalities and injuries. Sweden, for example, has developed a strategic plan to achieve zero deaths from traffic accidents, known as “Vision Zero” (Vägverket, 2006).

The reality of traffic safety, in its broad sense, cannot only be captured by simple statistical indicators of rates of casualties and fatalities. Reality involves several aspects including, for instance, effectiveness of law enforcement, spread and effectiveness of traffic awareness programs, roles and needs of stakeholders, and effectiveness of coordination among underlying agencies.

Hawas (2009) indicated a high alarming rate of road accidents in the United Arab Emirates (UAE). On the average, the country has daily witnessed 3 fatalities and more than 25 injuries due to road-crashes in the last few years. Aside from human suffering, the cost due to road-crash fatalities and injuries in the UAE is approximately 2.5% of the country’s GDP (Selim et al., 2011). Nonetheless, little has been done to properly diagnose the traffic safety problem and identify associated causes in the country. Identification of the exact causation is necessary for intervention and application of potentially viable counter measures.

Commonly, traffic safety research studies have focused on individual areas of traffic safety (for example driving behaviour, speed limit, traffic violation, etc.) rather than aggregated perspective. Furthermore, a few studies are related to traffic safety in the UAE. Among them, El-Sadig et al. (2002) presented trends of morbidity and mortality due to road traffic accidents in the UAE. Another study was done to evaluate the effectiveness of seatbelt legislation (El-Sadig et al., 2004) and controlling traffic law violation (Mehmood, 2010). Bener et al. (2008) describes the drivers behaviour in the UAE by analyzing Manchester Drivers Behavior Questionnaire.

In this study we looked at traffic safety in a holistic way with consideration of the case in the UAE. The objective was to identify the major factors affecting traffic safety in the country and to elucidate deficiencies (if any) associated with these factors along with their intensity. To achieve this, we first identified the “items” which could be utilized as indicators of the traffic safety situation in the country as a whole. Identified traffic safety items were assessed through collection of data from different information sources. As