



Investigating the motivational factors influencing drivers intentions to unsafe driving behaviours: Speeding and overtaking violations



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ABSTRACT

Achieving road safety depends on driver attitudes and behaviours in handling the vehicle on roads. The availability of good road, improvement of vehicle designs and drivers experience lead to reduction in crashes but not prevention of crashes. The study aims to predict the drivers' intentions towards speeding and overtaking violations when under the influence of motivational factors using belief measure of TPB and DBQ variables. To achieve this, questionnaires were randomly administered to a sample of Ghanaian drivers ($N = 354$) who held valid driving licenses. This study applied regression techniques. The result shows that the components of TPB and DBQ variables were able to predict drivers' intentions towards speeding and overtaking violations. The study further shows that components of TPB made larger contributions to the prediction of drivers' intentions to speeding and overtaking than the DBQ. Further analysis revealed that, in the prediction of drivers' intentions, speeding attitude was the most frequent violations compared to overtaking. The drivers tend to involved in overtaking violations when they perceived the driving motivations would enhance the performance of the behaviour. Additionally, control belief has been the strongest predictor of drivers' intentions under the influence of motivations to speeding and overtaking violations. It appeared that the drivers who intended to involve in speeding and overtaking violations had strong beliefs in the factors and are more likely to violate based on their beliefs. The practical implications of the findings for the development of interventions to promote road safety and positive changes are also discussed.

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1. Introduction

The frequency of vehicles crashes in Ghana has become one of the worrying and growing concerns in recent times. Ghana Auditor-General (2010) indicated that in 2010, average of 1600 people in Ghana perished and over 15,000 injuries were recorded annually through road traffic accidents (RTA). The report further shows that this cost Ghana 1.6% of its Gross Domestic Product (GDP) translating into \$ 165 million. Again, in 2012 alone 2249 Ghanaians died while 14,169 sustained injuries through RTA and 60% of all crash victims were people within the productive age group between 30 and 49 years

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(National Road Safety Commission (NRSC), 2011, Siaw, Duodu, & Sarkordie, 2013). As result of this, there are approaches of effective management of traffic flow, as well as the development and maintenance of road infrastructure to promote road safety. There is also establishment of powerful institutions and regulatory bodies to promote road safety. Despite all these approaches, statistics relating to road traffic accidents are overwhelming. For instance, in the report of National Road Safety Commission (NRSC) (2014), in 2013 more than 14,128 cars were involved in accidents that claimed 1503 lives. The report further indicated that, every month 165 people are killed in road crashes while more than five road users are killed daily on roads in Ghana. This suggests that the problem of crashes is a serious trait to public health. According to the road traffic statistics and analysis information in Ghana, most crashes could be directly linked to driver's mistake and violation of road traffic laws. It has also been recorded that, 90% of RTAs are caused by human behaviour and 65% are attributed to speeding and overtaking violations (Damsere-Derry, Ebel, Mock, Afukaar, & Donkor, 2010; Ghana Auditor-General, 2010). The majority of crashes have been attributed to either one or a combination of road, driver, vehicle and environmental factors. Studies in other countries have also confirmed that, 90% of all crashes are caused by road user behaviour characteristics (Bener, Crundall, Haigney, Bensiali, & Al-Falasi, 2007). Majority of findings have attributed road accidents to human factor (Bener et al., 2007; de Oña, de Oña, Eboli, Forciniti, & Mazzulla, 2014). However, good driving behaviour exhibit by drivers could have a flow effect to improve the overall safety on roads. This requires drivers to comply with the acceptable norms and regulations in driving. This may also require drivers refraining from unsafe driving behaviour (hard acceleration and braking). Unsafe driving is a component of human behaviour in the context of driving. Its consequence on roads can be huge, with extreme cases leading to damages of properties, injuries and deaths. Ball (2012) conducted a research on why society is complex and indicated that, one cannot tell how big any particular conflict will become. In the context of safety, one cannot also tell how serious unsafe driving behaviour could result in minor or major damages. Each road accident could be as a result of unsafe driving behaviour. In this study we attempt to define unsafe driving behaviour as a deliberate and systematic practice that makes processes and actions minimize positive and maximize negative effects within a driving environment, based on the awareness about the interaction between the processes and actions. Looking at the suffering and losses caused by crashes on our road, investigating the factors that stimulate inappropriate speeding and wrong overtaking is very relevant in modern society. This would promote safety awareness and knowledge for its prevention. Therefore, it is expected that this study would create awareness and understanding in the importance of regarding traffic regulations.

1.1. Speeding and overtaking violations

There are considerable numbers of inappropriate driving behaviours on our roads. Among these, the most significant are speeding and overtaking violations. Excessive speeding and wrong overtaking are potentially crash situations which could predetermine the severity of injuries and fatalities. It can be induced by internal and external factors associated with the driver's attitudes, beliefs, intentions and purpose. Excessive speeding has been recognised as one of the inappropriate driving behaviour which could increase workload and decrease safety threshold (point above high risk) (Fuller et al., 2006). They further pointed out that even if drivers remain in control in handling the vehicle at high speed without any crash outcome such behaviour is still regarded as highly inappropriate. Musselwhite (2006) also conducted study on attitudes towards vehicle driving behaviour. The study revealed that majority of overtaking accidents that occurred was associated with excessive speeding. Studies by Boufous et al. (2010) also stated that failure to observe speed limits is one of the leading factors associated with involvement in motor vehicle accidents. Inappropriate speeding and overtaking may also occur when drivers don't want to yield to one another on the circulation roadway. This situation can be as a result of drivers' attempt to achieve their target. For instance Krivda (2013) investigated conflict situations in road traffic on roundabout and indicated that most of the time, some drivers adapt to unacceptable driving behaviour to impair other road users to achieve their target goal (e.g. reaching their destination quickly). In this case, the driver is most likely to choose risky driving behaviour. It can be stated that, drivers in their attempt to achieve their immediate goals would certainly be under the influence of motivations to engage in unsafe driving behaviour. In such situation, the probability of crash occurring is very high, most especially on highways. Inappropriate speeding and wrong overtaking may be useful for some drivers, even though it is unacceptable. For example, some drivers may engage in inappropriate speeding and overtaking because it allows them to get to their appointment on schedule. According to Křivda (2013), the wrong behaviour of road traffic users result in restriction or danger to the culprit and other users. This suggests that, the end results of unsafe driving behaviour don't affect the culprit alone but other road users as well.

As a result of increased number of road traffic crashes unsafe driving behaviour can caused, there have been measures in the past and recent times to improve road designs. However, this may have adverse effects on driver's behaviours which intend can affect crash rates. Automotive manufacturers have developed a number of advanced intelligent technologies to assist the driver skills and decrease workload. However, these technologies which are capable of enhancing vehicles to travel at a high speed may influenced drivers speed choice and overtaking perception. Increased in-vehicle safety devices could also influence drivers to feel protected even in the event of accident and opt for risky driving behaviour. Though the transport construction designer can never regard transport solutions as completely safe and suitable (Křivda, 2013). In the work of Fuller, Bates et al. (2008), it was concluded that the motivational influences which raises speed simultaneously raise the driving task difficulty and drivers risk threshold which in turn reduces the safety margin of the driver. There is evidence that speed perception is also affected by perceived driving ability and social norms (McEvoy, Stevenson, & Woodward, 2007). It could be seen that the implementations of safety measures were to improve in achieving road safety. Nonetheless, these

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