



# Self-reported dimensions of aberrant behaviours among drivers in Pakistan



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## ABSTRACT

This paper has explored aberrant behaviours of drivers in Pakistan with the help of extended violation scale of the modified Manchester Driver Behaviour Questionnaire. Principal component analysis with promax rotation reveals that the drivers in the country have four discrete behavioural dimensions including aggressive driving, unlawful driving, risky driving, and egoistic driving. Further, univariate descriptive indicate that the study's drivers engage in risky overtaking and close following more than drunk driving or speeding. The results also demonstrate that the behaviour of drivers is attributable to their personal characteristics and being young, affluent or separated/divorced can negatively influence it.

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## 1. Introduction

Road Traffic Accidents (RTA) are attributed to many factors including road, vehicle and humans. These factors combine in a way that leads to a road user failing to cope in a particular situation (Casbard et al., 2003). Road safety literature generally agrees that human factors are one of the most dominant factors in understanding the chain of events leading to an accident and indicates driver malfunctioning as the prime contributor in road accidents (e.g. Christ, Panosch, & Bukasa, 2004; GRSP, 2011). Among human factors, driver behaviour: what driver chooses to do has much greater influence on safety than driver's performance: what driver can do (Evans, 1996). It is said that the problem of traffic crashes is more due to the drivers doing things that they know they ought not to do, than of drivers not knowing what to do (Evans, 1991).

The literature demonstrates that among different types of aberrant behaviours, Road Traffic Violations (RTVs) are the most crucial that cause definite risk to other road users (e.g. see Evans, 1991; Parker, Reason, Manstead, & Stradling, 1995; Stradling & Meadows, 2000). A violation is defined as the deliberate infringement of some regulated or socially accepted code of behaviour (Parker et al., 1995) such as speeding, drink driving and non-use of seat belts. One of the self-reported studies of aberrant driving behaviours demonstrates that drivers who have high violation score are more involved in accidents in the past and are more likely to be involved again in future. It is said high violators are not only more likely to run into others or to run off the road (active accidents) but to put themselves in situations where others run into them (passive accidents), and therefore are called 'crash magnets' (Stradling & Meadows, 2000). Thus, violations are the behaviours that drivers must be dissuaded from committing (Parker, 2004).

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Although, the seriousness of the consequences of violations on the status of road safety is evident, for developing countries RTVs are not scientifically studied (UNECE, 2008). It is argued that the size of this problem is increasing in such countries due to rapid motorization and individual driving behaviours such as excessive speed (Bener, Razzak, Crundall, & Allen, 2014). In developed world, number of injuries and deaths due to RTAs are generally reduced due to extensive research and technological innovation, a vivid safety culture, and successful law enforcement. However, there is lack of impressive body of studies demonstrating causes and effects of accidents relating to developing countries (Downing, 1991). Moreover, findings of road safety research of developed countries may not be transferable to developing countries. As profiles of both worlds differ widely in terms of culture, resources, road and traffic conditions, socio-economic levels and behaviours, attitudes and knowledge of road users. Consequently, effectiveness of transferring some developed country solutions to developing countries is uncertain. Their appropriateness needs to be considered in relation to problems and conditions prevailing in individual countries (Baguley & Jacobs, 2000). Therefore, considering how little is known about effectiveness of local safety measures, particularly generality of results for different countries and traffic cultures, it is suggested that main contribution of researchers from a country with a relatively high safety standard can be to provide tools to assess and evaluate such safety measures (Almqvist & Hydén, 1994).

In case of Pakistan much less is known about driver behaviour, although they are held responsible for majority of RTAs. Road user error is identified as main cause in at least 70% of road accidents (Jacobs & Sayer, 1984). The fatality rate on the country's road network remains among the highest in the world at around 5565 fatalities per year (over 30 accidents per 10,000 registered vehicles). This is considerably above the countries with the lowest number of fatalities such as the UK (3298 reported fatalities per year); despite the fact that Pakistan is six times less motorized than the UK (WHO, 2009). Due to paucity of research work and empirical evidences, much is not known about the distinct types and frequency of RTVs executed by the country's drivers on roads. Consequently, it also remains difficult to understand underlying factors which provoke these behaviours. Usually, deliberate infringement of traffic laws, physically or mentally incapacitated driving under the influence of alcohol and other intoxicating drugs, driving without license and impoliteness, rude gestures and cursing are considered as the most frequently occurring aberrant behaviours (Dogar, 2008). For Lahore, the second most populated city of Pakistan and fortieth of the world, 2010s statistics reveal that 332 people lost their lives while 27,264 got injured in less than a year due to careless driving, speeding or wrong-turns. The National Injury Survey of Pakistan (NISP) reports that most injuries in the country occur to persons aged between 16 and 45 years (Ghaffar, Hyder, & Masud, 2004). These accidents are disproportionately affecting poorer class of Pakistani society and have pushed many families further into poverty by the loss of their breadwinners. The economic losses for the country are estimated at over 2% of Gross Domestic Product (ADB, 2007).

Considering gravity of the situation, this study is carried out to understand pre-crash phenomenon while focusing on human side of RTAs. As intentional RTVs are considered as the most risky type of aberrant behaviours (e.g. see Parker et al., 1995; Stradling & Meadows, 2000), it is decided to determine distinct types and frequency of intentional violations executed by Pakistani drivers on roads. One approach of studying such behaviours focuses at subjective assessment using Driver Behaviour Questionnaire (DBQ). Originally, the questionnaire is developed using Reason's theory of error and violation (Reason, Manstead, Stradling, Baxter, & Campbell, 1990). It is a 50-item questionnaire which measures aberrant driving behaviours in three subscales: slips and lapses, mistakes and violations. The review of literature demonstrates that the questionnaire is one of the most widely used and reliable measures of behaviours. It is applied in number of countries including Finland, UK, Greece, Iran, The Netherlands, Turkey, Spain and China (e.g. Lawton, Parker, Manstead, & Stradling, 1997; Özkan, Lajunen, Chliaoutakis, Parker, & Summala, 2006).

This research also attempts to explore influence of personal characteristics on aberrant behaviours. It is hypothesized that drivers' behaviours are attributable to their personal characteristics. For example, the literature argues that road safety is a social problem and personal factors play a vital role in guiding and shaping of drivers behaviours. Particularly, research work in psychological sciences demonstrates its close association with individuals' socio-economic and demographic characteristics. The variables such as age, gender and exposure are all known to be correlated with accident involvement (Iversen & Rundmo, 2004). It is noted that high rate of RTVs is significantly associated with those drivers who are young, male and have high annual mileage i.e. exposure (Hennessy & Wiesenthal, 2005). Therefore, this paper investigates the influences of personal characteristics on road traffic violation behaviour of sample of drivers from Pakistan.

## 2. Aims

The principle aims of this paper are to contribute to an understanding of road safety profile of Pakistan by determining types of aberrant behaviours exercised by drivers in the country, and to explore influence of personal characteristics on these behaviours.

## 3. Materials and method

### 3.1. Participants

In total, 438 participants are recruited for the study from different densely populated locations of the city of Lahore using a quota sampling procedure. Six major groups attempted to be covered are professional drivers, business and leisure com-

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