Psychosocial Correlates of Road Crashes in Ibadan, Nigeria

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ABSTRACT The objectives of this study were to investigate factors that influence driving behaviour in the city of Ibadan, ascertain some of the psychosocial factors that influence road crashes in Ibadan, and attempt proffering suggestions about dealing with the identified driving problems. The study employed a correlational design. It examined psychosocial factors (such as drunken driving, impressionistic/self-regulated driving behavior, disobeying traffic laws, excessive speeding, anxiety, aggressiveness, level of education, gender and indulgence in distractive activity) that relate to road crashes. The aim was to review self-regulation of driving as a viable means of achieving safe and efficient driving among drivers. Three hundred and sixty two randomly or purposely sampled drivers participated in the study that employed thematic analyses and correlations as analysis tools. The principal finding of the study was that psychosocial factors such as drunken driving, road rage, and engaging in distractive activities while driving correlated significantly with road crashes. Discussions dwelt on the need for drivers to imbibe self-regulated driving culture.

INTRODUCTION

Transportation, with its economic and social benefits, is a very important activity in every society. Road transportation, being one of the most appealing means of transportation today, is convenient and more flexible when compared with other means of transportation. Road transportation has some trade-offs. It facilitates the movement and other activities of people but, in times of vehicle crashes or mishaps, causes pains, destruction, injury, loss of lives and valuable property too. About 70% of these deaths resulting from vehicle crashes occur in developing countries (Adeyemi-Doro 2003). Since driving cars is a necessary part of our life nowadays, it is inevitable that the population of car users continues to grow every year.

The annual economic costs of traffic injuries to developing countries such as Nigeria, are enormous -US$100 million (World Bank 1993). Traffic injuries account for over 85% of deaths in 1998 (Krug 1999). Over 50 percent of road traffic fatalities worldwide involve young adults aged 15-44 years corresponding to the most economically productive segment of the population (World Bank 2001).

Excessive speeding, reckless driving, road rage, driver impatience and disregard for traffic rules are among the common causes of road crashes in developing countries (Osagie et al. 1998). Causes of road crashes have been grouped into three broad categories, namely, the driver, the vehicle and the environmental conditions. Unsafe vehicle design represents the vehicle factors while poor road design and road environment conditions represent the environment factors. The driver factors are the human factors which are otherwise called psychosocial factors. The driver, the vehicle and the environmental conditions actively interact with one another to prevent or bring about an accident. However, the human factor plays the most prominent role in the relationship among these three factors. The exact nature of the interaction between the human factor and the other factors in driving is important but yet to be fully inves-tigated (Osagie et al. 1998).

How Accident Causes Interrelate

The vehicle and environmental conditions themselves are usually incapable of producing road crashes. This is because the vehicle and environmental conditions do not and cannot bring about any action (in this case, driving activity) until and unless a human being comes in to initiate action. And when driving action is initiated, it is still the human being that controls the complex processes while manipulating the vehicle and observing the environment. Thus, it is the drivers' reaction or response to these two factors that eventually leads to a crash. Bad roads and vehicle types will not and cannot on their own cause accidents. It is the performance of a human being or driver in the context of bad roads and road

unworthy vehicles that produces an accident (Osagie et al. 1998).

Driver factors include driving habits, road rage, poor mental and physical condition of the driver, lack of knowledge and attention to the vehicle behaviours, ignorance and disregard for traffic regulations. Road rage is caused by traffic congestion, feeling endangered, being insulted, frustration, time pressure and fatigue. Competitiveness, and lapses in attention are some other causative example factors. Other factors associated with the driver are wrong responses to varying road and traffic conditions, exceeding speed limits and excessive speeding, aggressiveness on the road while driving, dangerous overtaking and sleeping or being in a drowsy state while driving. Equally associated with the driver are lack of driving experience, drug use and inadequate use of car accessories (Osagie et al. 1998).

Self-efficacy Belief and Self-regulated Driving

A driver's self-efficacy belief can enhance his or her driving ability. Self-efficacy refers to the sense of confidence we have to perform a particular task. We all have beliefs about what we can do with the skills that we possess (Jinks et al. 2001). Probably the most widely cited theorist regarding performance self-efficacy is Bandura (1977, 1982, 1989a, 1997). His work reveals the ways in which belief about ability influences performance. In general, he reports that expectation about cause and effect results from experience and that the most powerful efficacy beliefs are situation-specific.

Self-regulated learning (SRL) is tied to self-efficacy. SRL emphasizes the emerging autonomy and responsibility of learners to take charge of their own learning (Paris 2001). Three central characteristics of SRL exist. These are awareness of thinking, use of strategies, and sustained motivation. Paris (2001) has noted that part of becoming self-regulated involves awareness of effective thinking and analyses of one's own thinking habits.

With the number of older drivers increasing, self-regulation of driving has been proposed as a viable means of balancing the autonomy of adults against the sometimes competing demand of public safety (Okonkwo et al. 2007). Okonkwo et al. (2007) have also reported in their study that participants were most likely to avoid driving in bad weather followed by driving at night, driving on high traffic roads, driving in unfamiliar areas,

and making left-hand turns across oncoming traffic. With the exception of driving at night, drivers at higher risk of crashes generally reported greater avoidance of these driving situations than lower risk drivers.

Charlton et al. (2006) reported that most of the drivers they studied were very confident and had no difficulty in driving situations including intersections, busy traffic and other higher risk conditions. Charlton et al. (2006) further found, overall, less than one quarter of participants they studied reported that they routinely avoided difficult driving situations, most especially night driving.

This study examined psychosocial factors that relate to road crashes. Particularly, the study dwelt on impressionistic-regulated driving. The term impressionistic driving describes drivers who engage in reckless driving behavior to impress people (their friends as well as others) and test their limits. Young drivers typically engage in reckless behavior because they are less able to perceive risk. They have difficulty identifying hazards that could lead to a crash and often overestimate their ability to handle the hazards they do identify. Impressionistic drivers also tend to bring along passengers that distract them from driving and encourage them to participate in reckless speeding, racing, or "driving games" (Littlefield 2005).

This study formulated and attempted to test the following specific hypotheses:
1. Would there be significant correlation between drunken driving avoidance/indulgence and traffic law obedience/disobedience?
2. Would road rage/friendliness significantly correlate with anxiety reduction/inducement behavior?
3. Would there be significant correlation between distractive activity avoidance/indulgence behavior and traffic law obedience/ disobedience?
4. Would there be significant correlation between impressionistic/self regulating behavior and anxiety reduction/inducement behavior?
5. Which thematic factors are more likely to be emphatically mentioned as likely causes of road crashes in Nigeria?

METHOD

Participants and Setting

This study was conducted at motor parks,

selected streets and some other designated parts of the city of Ibadan, Nigeria. The study's participants were individually or collectively contacted to participate in the study. At the pilot stage, the researcher interviewed 11 officials of Nigeria's Federal Road Safety Commission (FRSC), 5 Nigeria police officers, 5 certified driving instructors and 4 vehicle insurance risk assess-ment experts, on the causes of road crashes in Nigeria (Table 1).

Instruments

A Likert-type questionnaire designed by the author, and on attributes related to road crashes, was used. It surveyed drunken driving avoidance/indulgence, road aggressiveness/friendliness, anxiety reduction/inducement behavior, traffic law obedience/disobedience, impressionistic/self-regulated driving behavior and distractive activity avoidance/indulging behavior. Samples of questions were as follows:

Drunken driving "Drunk driving poses no danger to anybody."

Road rage/friendliness "Being friendly with people while driving never really benefits me."

Anxiety reduction/inducement bahvaiour "Nervous moments are pleasurable moments to drive."

Traffic law obedience/disobedience "There is a limit to what could be done to enforce road traffic laws."

Impressionistic/self- regulating behavior "I like to fully take charge of my driving; quite clearly, I do not drive to impress other people" and,

Distractive activity avoidance/indulgence behaviour "Using a cell phone while driving has little or no impact on my driving."

Procedure

The author collected data for the study with the assistance of 4 research assistants and 2 local interpreters. Questionnaires were administered on all 362 participants at different times and locations within Ibadan metropolis. Educated participants completed questionnaires by themselves while 2 interpreters assisted in obtaining information from uneducated participants. Interpreters also helped uneducated participants complete question-naires. Once participants completed question-naires, they were debriefed and informed that the study had ended. However, 64 participants were selected from among the 362 participants through personal solicitation to participate in focus group discussion; 12 focused groups sessions were held with between 4 and 6 participants featuring in each group. The researchers verbally presented driving scenarios to the participants to start off focus group discussions. As discussions went on, research assistants and the researcher took notes of themes and other relevant information according to predetermined criteria. The researchers also recorded frequencies and emphases of mention of some important and relevant words.

RESULTS

Overall, correlations among the inferred driving behavior components were significantly high. Table 2 presents the most significant correlations.

It has been shown in table 2 that there are significant positive correlations among variables.

First, drunk driving behavior avoidance/indulgence and traffic law obedience/disobedience behavior (hypothesis1) correlated significantly. Second, road aggressiveness/friendliness and anxiety reduction/inducement behavior (hypothesis 2) also correlated significantly. As well, distractive activity avoi-dance/indulgence behavior and traffic law obe-dience/disobedience behavior correlated significantly (hypothesis 3).

However, it is shown in table 2 that there is

Table 1: Psychodemographic characteristics of the study sample

	Males	*Females*	*Other engaged personnel*
Number of participants	200	162	Officials of FRSC: 11
			Police officers: 5
Mean Age	44.8 years	42.1 years	Driving instructors: 5
SD	4.2	3.2	Research assistants: 2
No. of Participants According to Literacy Level and Age			*Driver Category*
	Illiterate: 62	Very young: 88	1. Commercial: 190
	Fairly educated: 102	Young: 182	2. Private: 172
	Educated: 198	Old: 92	Total: 362
	Total: 362	Total: 362	60 other participants took part in the pilot study.

Table 2: Significant correlations of some inferred driving behaviour components

Name of inferred driving behaviour component	Correlation coefficient
1. Drunken driving avoidance/indulgence versus Traffic law obedience/disobedience	.89
2. Road aggressiveness/friendliness versus Anxiety reduction/inducement behavior	.84
3. Distractive activity avoidance/indulgence behavior versus Traffic law obedience/Disobedience	.82
4. Impressionistic/self regulating behavior versus Anxiety reduction/inducement behavior	-0.52

Table 3: Frequency of mentioning and level of emphasis of thematic factors

Theme	Emphatic mention	Casual mention	Total frequency
1. Use of and/or belief in charms	43	58	101
2. Listening to music while driving	28	61	89
3. Inability to read road signs	26	61	72
4. Eating while driving	26	56	82
5. Using cell phone while driving	18	38	56

significant negative correlation between impressionistic/self regulating behavior and anxiety reduction/inducement behavior (hypothesis 4).

Table 3 results show that use of charms and/or belief in charms and listening to music while driving got the highest number of emphatic mentioning as likely causes of road crashes in Nigeria. Listening to music while driving and inability to read road signs also got the highest casual mention as likely causes of road crashes in Nigeria.

DISCUSSION

This study has reinforced the thinking that some psychosocial factors such as drunken driving, engaging in distractive activities, and road rage, correlate with road crashes. Specifically, drunken driving avoidance/indulgence, for instance, was found to correlate highly with traffic law obedience/disobedience. Road rage or aggressiveness/friendliness correlated highly with anxiety inducement/reduction behavior while distractive activity avoidance/indulgence similarly correlated significantly with traffic law obedience/disobedience.

Curiously, impressionistic/self-regulating behavior showed significant negative correlation with anxiety reduction/inducement behavior. This negative correlation may point to the likelihood that indulging in impressionistic driving might either produce high levels or low levels of anxiety that might turn out to be counterproductive and even fatal.

CONCLUSION AND RECOMMENDATIONS

There appear to be connections among inferred driving behavior (shown in Table 2) and some of the focus group thematic factors (shown in Table 3). For instance, a driver who believes in the efficacy of protective charms has a high likelihood of not viewing drunken driving as being potentially and actually dangerous to the driver and other road users. Both the frequency and emphasis of mentioning reinforce the impact, which the identified road crash factors have on driving behavior. These findings are revealing but they also point to the need for further research in this subject matter (road crashes). Findings of this study have implications for driver capacity building and traffic regulation efforts that are geared towards driver efficiency and safety on our roads.

Road crashes do constitute serious problems in many countries of the world today. Therefore, it becomes important for governments and other regulatory agencies to work towards having articulated road traffic policies. The effective enforcement of traffic laws is also an issue that governments and other regulatory agencies need to look into more seriously. Okonkwo et al. (2007) have particularly stressed the need to embrace self-regulated driving orientation as a viable means of achieving both efficiency and safety on our roads. Regular and effective driver certification, training and re-training, as well as effective vehicle maintenance and licensing policies are also important ways by which road crashes could be reduced to the barest minimum.

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