PERSONALITY TRAITS AS DETERMINANTS OF VOLUNTARY DISTRACTED DRIVING BEHAVIOUR AMONG YOUNG DRIVERS IN IBADAN, NIGERIA.

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ABSTRACT

The study investigated the role of personality traits of young drivers on voluntary distracted driving behaviour in Nigeria. Ex-post factor research design was adopted and data was gathered from 137 Young driver's license applicants aged 18-25 years across two (2) randomly selected driver's license centers in Oyo state. Data was gathered using standardized scales of measurement on distracted driving behaviour and personality traits. More of the respondents 62% were males. Findings revealed that when combined, personality traits (extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness) had no significant influence on voluntary distracted driving behaviour among young drivers [R = .25; R2 = .06; F (5, 130) = 1.74; P > .05]. However, when tested independently, agreeableness (β = -.21; t = -2.31; P < .05) was found to independently predict voluntary distracted driving behaviour among novice drivers. Conclusions and recommendations were drawn based on the findings.

Keywords: Personality Traits, Voluntary Distracted Driving Behaviour, Young Drivers

INTRODUCTION

Driving behaviour is considered one of the most important aspects of traffic and transportation safety (Fu et al. 2022). Considering the importance of driving behaviour to road safety, it is, therefore, paramount to prevent all forms of distracted driving on the road (Adeola & Gibbons, 2013; Dronseyko et al. 2018). This is because it is not just a mistake for the driver, but also threatens the safety of other road users.

While distracted driving behaviour could be divided into voluntary and involuntary, this study focused on voluntary distracted driving behaviour. Voluntary is any action involving the use of a phone that is initiated by the driver which allows altering of such driver's behaviour in order to compensate for being distracted. On the other hand, involuntary distraction is when the driver is cognitively incapable to suppress irrelevant information while focusing on the primary task of driving. Phone-related distractions are the most serious form of distracted driving because it tends to make the driver look at a screen, type using his hands, and think about writing, texting, and driving (Distracted Driving, 2020). Also, when engaging in voluntary distraction drivers are conscious of their behaviour. Unlike the while involuntary distraction effects, they seem to be less conscious (Hoekstra-Atwood, 2016). Thus, it is believed that mobile phone is not only changing how we live and work but also the way we drive. As such, the use of phones behind the wheel is a threat to traffic safety (Papadimitriou et al. 2022). Specifically, one of the purposes of using the phone while driving is to be on social media. Several negative impact of social media on driving is its user's obsession with promoting unsafe driving habits which are not limited to but include those that could result in injury or death (Digital, 2016).

Recent key findings revealed that distractions behind the wheel negatively affect driving performance in such a way that drivers are exposed to unsafe traffic situations (Boboc et al. 2022).

Regardless of how short a driver is distracted, it could lead to a road traffic crash (Watson et al. 2007; Nasar et al. 2008). Road Traffic Crashes (RTC) and unsafe driving behaviour behind the wheel are interwoven (Olubiyi et al. 2016). In this direction, the type of road and phone use are found to be interrelated (Kujala & Mäkelä, 2018). To address this unsafe behaviour for example on Nigerian roads as it is obtainable in other countries of the world, erring drivers are arrested and fined by Federal Road Safety Corps (FRSC) personnel on the highways (Oyeyemi, 2003 & 2014).

Studies suggest that the likelihood that a crash will occur is more when a driver is engaged in distracted driving behaviour than when he avoids it; crashes involving the use of a phone behind the wheel reveal drivers are more susceptible to RTC than those who do not (Violanti & Marshall, 1996). It is a herculean task assessing the increased risk of voluntary distracted driving behaviour among novice drivers because of the lack of adequate data concerning it. For instance, in Nigeria, it is only when a crash occurs that a crash investigation will determine whether distracted driving behaviour is the cause of such a crash (Safe Road, 2015). As this unsafe driving behaviour is growing, it may not only become an increasingly common cause of distracted driving behaviours but also road crashes among young drivers. In this line of thought, the previous study advocates for researchers' attention to those areas that will enhance road users' safety (Balogun et al. 2012).

According to a report by the National Highway Traffic Safety and Administration USA, it was indicated that about 3,000 individuals died as a result of distracted driving behaviour which in total accounted for about 8% of traffic-related accidents in the United States (Stewart, 2022). In Nigeria, Emenike and Kanu (2017) reported that about 60% of drivers who uses their phone while driving are distracted. This is considered to be high and dangerous to the safety of other road users, hence calling for attention. While there exists an abundance of research on distracted driving behaviour among drivers, there is a lack of adequate empirical studies on voluntary distracted driving behaviour among young drivers as it relates to their personality. Therefore, this study unravels the role of personality traits in voluntary distracted driving behaviour. While the knowledge of a young driver's personality factors is not only important in predicting driving behaviour, it also provides the medium for the assessment of his thought pattern and perceptions (Kneavel, 2008).

In essence, a model that describes relationships between the traits is the five-factor model but it does not suggest the traits' causes and consequences they may follow (John & Srivastava, 1999). In addition, based on this model three core components are developed: (a) basic tendencies, (b) characteristic adaptations, and (c) self-concept (McCrae and Costa, 1996). In congruence with this model, there is evidence of the universality of the factors and replications in some cultures (McCrae & Terracciano, 2005).

Based on previous studies, there is the existence of a positive connection between traits and risky driving behaviour (Parr et al. 2016). Further, they found that teen drivers had higher traits that were predictive of distracted driving behaviour. In addition, older drivers with personality traits (extraversion) were predictive of this unsafe driving behaviour. On the other hand, conscientious individuals are less prone to risky driving exercises and suffered fewer road traffic crashes (Ehsani et al, 2015).

Against this backdrop, researchers observed that conscientious drivers were highly prone to the use of phones behind the wheel (Akinniyi et al. 2019). Although it is believed that conscientious individuals are known to be organized and dependable, and even obsessive as well as found to be prone to phone addiction (Li, & Lin, 2019). A possible explanation for the observed gap in results could be the complexity of human behaviour- cultural and social factors that are germane

to safe driving. For instance, one of the studies was carried out in China (Asia), and the present one was in Ibadan, Nigeria (Africa).

Indisputably, personality psychology and the study of driving behaviour are inseparable (Galovski & Blanchard, 2004). In this direction, it was found that driving errors of commission are predictable from individuals with low self-control (Ferreira, et al. 2009). In a similar study, 540 students were examined, and there was a connection between drivers who are involved in road traffic crashes and this driving aberrant behaviour. Hence, the mobile phone (a communication device) uses while driving might be predicted by personality traits (Phillips et al. 2008). Also, personality traits are linked with many risk behaviours as well as road traffic crashes and near-crashes. (Ehsani et al. 2015; Braitman & Braitman, 2017). It was discovered that extraversion and neuroticism are the two most universally accepted dimensions in the five-factor personality framework (John et al. 1991). In addition, conscientiousness is a fundamental determinant of safe driving culture (Roberts et al. 2012). Thus, personality traits and distracted driving behaviour are relevant to traffic safety. However, the joint prediction of traits as in the big five has not yet been tested on distracted driving behaviour, especially in Nigeria. It is therefore hypothesized in this study that personality traits of extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness will jointly predict voluntary distracted driving behaviour.

METHOD

Design

An ex-post facto research design was used for this study because qualities that pre-existed in a group of participants before the research were compared to a dependent variable. In other words, it is a form of design where the researcher studies how an independent variable, present before the study in the participants, affects a dependent variable without interference from the researcher (Salkind, 2010). Through this design, the predictive strength of the personality factors was assessed on voluntary distracted driving behaviour. All the variables are on interval scales of measurement, being behavioural concepts.

Setting

Ibadan was selected as the geographical location where data was collected because of being heterogeneous - many tribes and ethnic groups. Also, the city is the origin of road safety in Africa (The Voice of Safety, 2009). As of the time of this study, there are eleven local government councils: five of such are within the metropolitan city and six in the outer areas. The most urbanized city after Lagos is Ibadan which is also the capital city of Oyo State with a population of 1.8 million, based on the 1991 population census (Oluseyi, 2006). The current growth rate of the city is believed to be alarming.

From the road safety perspective, Ibadan city is the origin of the road safety corps in Africa, pioneered by Major General Jemibewon in 1977 (The Voice of Safety, 2009). The headquarters of the FRSC State Command (Oyo State Sector Command) is also located in Ibadan. This study focuses on the city of Ibadan within which four Driver's Licence Centres (DLC) are located and the other six outside the city but within the jurisdiction of Oyo State Sector Command.

Population

These are young driver’s license applicants in Ibadan, Oyo State, Nigeria. They belong to the first part of the three-stage Graduated Driver’s License in Nigeria, 18 to 25 years old. This group of drivers is highly prone to road crashes (Parr et al. 2016).

Sampling and sample size

Multi-stage sampling is a form of cluster sampling that entails the breaking down of larger clusters into smaller ones for the sake of surveying (Agresti & Finlay, 2008). Using this technique, the researcher divided a total population of interest into clusters by geographic region- that is at the State level, Oyo State which has ten Driver Licence Centres. Only four of such centres are located in Ibadan, through simple random sampling, only two centers within the Ibadan Metropolis were selected: Onireke and State Secretariat Driver Licence Centres. Thereafter, the researcher identified the elements to sample from the group – that is first-time driver's license applicants for the survey. A total of 137 samples were drawn from the identified centers: 62% were males while 38% were females. In addition, religion frequency showed that more of the respondents 78.8% were Christians, while the other 21.2% were Muslims.

Instrument

The research instrument, a structured questionnaire, was used to collect relevant data for this study. The questionnaire consisted of standardized scales with adequate psychometric properties. The research instrument was in three (3) sections: sections A to C measuring, socio-demographic characteristics of respondents, and scales measuring personality factors and voluntary distracted driving behaviour.

Section A: The Socio-demographic Characteristics

This consists of the socio-demographic characteristics of the participants which include gender, age, religion, highest educational qualification, occupation, and years of driving experience.

Section B: Big Five Inventory

A 10-item version of the Big Five Inventory- BFI-10 was used. It was designed to provide a scale of the Big Five for contexts in which participant time is strictly limited. This tends to allow its use in cross-cultural research and using peer ratings indicates that the BFI-10 scale holds significant levels of reliability and validity (Rammstedt & John 2007).In other words, the need for less time-consuming evaluations led Rammestedt and John (2007) to develop BFI – 10 that was used in the evaluation of Neuroticism, Extraversion, Openness to Experience, Conscientiousness, and Agreeableness with which the personality of the participants can be described. Each item is a short phrase that the participant used to evaluate the description of their personality through a 5-point Likert scale and it took less than one minute to answer. Also, in scoring the BFI-10 scales used in this study, the following guide was adhered to strictly: Extraversion: 1R, 6; Agreeableness: 2, 7R; Conscientiousness: 3R, 8; Neuroticism: 4R, 9; Openness: 5R; 10 (where R is reversed-scored). The following internal consistencies were reported for the sub-scales: Extraversion (α = .70), Agreeableness (α = .69), Conscientiousness (α = .63), Neuroticism (α = .62), and Openness (α = .60)

Section C: Distracted Driving Behaviour

Distracted driving behaviour in this study was measured using the Susceptibility to Driver Distraction Questionnaire (SDDQ). This is a useful self-report method to investigate driver distraction (Feng et. al., 2014). Apart from high internal correlations between the likelihood of engagement and the attitudes and beliefs about distraction, it is also consistent with the Theory of Planned Behaviour (Feng et al., 2014).

This scale has 32 items while items related to voluntary distraction are associated with personality traits of impulsiveness and sensation seeking and those related to involuntary distraction are associated with cognitive measures. However, voluntary distracted driving behaviour scale items

were selected. Items on phone-related distractions and passenger conversation were also included. Each item was assigned a value between 1 and 5 (with 1 representing 'never' or 'strongly disagree', and 5 representing 'very often' or 'strongly agree'). Susceptibility to Distracted Driving Behaviour: Engagement in distraction while driving α = .66; attitude about voluntary α = .67; perceived control, α = .80; potential facilitators of voluntary distraction α = .73; voluntary distraction α = .81; involuntary, α = .69.

Procedure for Data Collection

Data was gathered by administering the questionnaire at the two randomly selected Driver's Licence Centres - Onireke and State Secretariat Agodi within Ibadan to participants who were scheduled for the physical capture of their biometrics. Indeed, within the city of Ibadan, there are four Driver's Licence Centres (DLC) and the other six are outside the city but within the jurisdiction of Oyo State Sector Command. Those two centers were chosen among all the four centers neatly paper-folded separately in a bowl. This was to ensure that young drivers from various segments of the Ibadan metropolis were covered in the study.

A series of simple, short, and direct sentences were used for the survey questions otherwise known as the traditional pen-and-paper questionnaire to encourage respondents to complete the entire survey. Responses were coded, more sophisticated statistical indexes were carried out and inferences about the drivers' population from the responses of the sample were drawn. Hence, the questionnaire was collected, scored accordingly, and statistically analyzed.

Statistical Analyses

The socio-demographic variables of respondents were analyzed using descriptive statistics. The stated hypothesis was based on a literature review and tested with multiple regression analysis. All tests were carried out using SPSS version 26.

Ethical Considerations

This study was ethically screened and approved by the constituted authority in Oyo State Ministry of Health and Social Sciences and Humanities Research Ethics Committee- SSHRC, University of Ibadan, before embarking on it.

RESULTS

This sub-section presents results of gathered data from 137 novice drivers. Specifically, selected respondents has less than 1 year driving experience, hence, were classified as novice drivers.

1 Demographic Information of Respondents

Table 1: Demographic Distribution

SN	Variables	Frequency	Percentage (%)
1	***Gender***		
	Male	85	62
	Female	52	38
2	***Age (Mean = 21.5; SD = 2.4)***		
	18 years	16	11.7
	19 years	24	17.5
	20 years	18	13.1
	21 years	8	5.8
	22 years	17	12.4
	23 years	21	15.3
	24 years	14	10.2
	25 years	19	13.9
3	***Religion***		
	Christianity	108	78.8
	Islam	29	21.2
4	***Educational Qualification***		
	Primary	11	8
	SSCE	33	24.1
	NCE/ND	30	21.9
	HND/First degree	58	42.3
	Masters	5	3.6
	Total	**137**	**100**

Table 1 presents the results of frequency distribution of respondents. Gender distribution shows that more of the respondents 62% were males, while the other 38% were females. Age distribution revealed that more of the respondents 17.5% were 19 years old, while the least age was 18 years, with an overall average age of 21.5 (SD = 2.4). In addition, religion frequency showed that more of the respondents 78.8% were Christians, while the other 21.2% were Muslims. Finally, educational qualification showed that more of the respondents 42.3% were HND/First-degree holders, 24.1% were secondary school leaving certificate holders, 21.9% were NCE/ND certificate holders, and 8% were primary school leaving certificate holders, while other 3.6% were Master's Degree holders.

2 Inter-correlation among variables of the study

Table 2: Zero-order correlation summary table showing results on the relationship among the variables of the study

SN	Variables	Mean	SD	1	2	3	4	5	6
1	Voluntary distraction	46.64	12.71	-					
2	Extraversion	5.61	1.22	.09	-				
3	Agreeableness	7.73	1.29	-.23*	-.07	-			
4	Conscientiousness	7.82	1.48	-.10	.12	.30**	-		
5	Neuroticism	4.88	1.66	-.02	-.20*	-.26**	-.33**	-	
6	Openness	6.91	1.24	.03	-.09	.01	-.01	.23**	-

Table 2 presents results on the relationship between personality traits (extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness) and voluntary distracted driving behaviour among novice drivers. It is shown that voluntary distracted driving behaviour had a significant and negative relationship with agreeableness ($r = -.23$; $P < .05$). This implies that the higher the agreeableness personality trait, the lower the voluntary distracted driving behaviour.

However, it is shown that voluntary distracted driving behaviour had no significant relationship with extraversion (r = .09; P > .05), conscientiousness (r = -.10; P > .05), neuroticism (r = -.02; P > .05) and openness to experience (r = .03; P > .05).

3 Hypothesis Testing

Personality traits (extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness) will jointly and independently predict voluntary distracted driving behaviour among novice drivers. This was tested using multiple regression analysis and the result is presented on Table 3;

Table 3: Multiple regression analysis summary table showing results on personality predictors of voluntary distracted driving behaviour

Dependent	Predictors	β	t	P	R	R^2	F	P
	Extraversion	.07	.78	>.05				
	Agreeableness	-.21	-2.31	<.05				
Voluntary distraction	Conscientiousness	-.08	-.84	>.05	.25	.06	1.74	>.05
	Neuroticism	-.10	-1.00	>.05				
	Openness	.06	.71	>.05				

Table 3 presents the results of joint and independent influence of personality traits (extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness) on voluntary distracted driving behaviour among novice drivers. It is shown that when combined, personality traits (extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness) had no significant influence on voluntary distracted driving behaviour among novice drivers [R = .25; R2 = .06; F (5, 130) = 1.74; P > .05]. However, when tested independently, agreeableness (β = -.21; t = -2.31; P < .05) was found to independently predict voluntary distracted driving behaviour among novice drivers. The direction of the beta value (β = -.21) shows that the higher the agreeableness, the lower the voluntary distracted driving behaviour among novice drivers.

DISCUSSION AND CONCLUSION

The study investigated the personality traits of voluntary distracted driving behaviour among novice drivers in Nigeria. It was discovered that when combined, personality traits (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience) had no significant joint influence on voluntary distracted driving behaviour. However, agreeableness had a significant independent influence on voluntary distracted driving behaviour. The direction of the result showed that the higher the agreeableness, the lower the voluntary distracted driving behaviour.

Following the findings of the study, it could be implied that considering the nature of novice drivers as inexperienced, they tend to engage less in distracted driving behaviour when they are guided. Being agreeable is related to maintaining pro-social relationships and it has been reported that they are more trustworthy, straightforward, modest, and altruistic (Nguyen et al. 2013). Therefore, these traits could further be encouraged in inexperienced drivers such that modesty and other related positive behaviour during driving training school is reinforced and encouraged.

Against the findings, it was reported that openness and conscientiousness among teen drivers could independently and jointly predict proneness to distracted driving behaviour (Oyeleke, et al., 2016). In addition, it was found that higher levels of openness and conscientiousness were predictive of greater reported texting frequency and interaction with a phone while driving among

young drivers (Parr et al., 2016). Also, Zheng et al. (2019) reported that among the five-factor personality traits, emotional stability had the highest influence on driving behaviour.

It could therefore be concluded from this study that among the five personality factors, only agreeableness had an independent influence on voluntary distracted driving behaviour among novice drivers. It is therefore recommended that behaviours attached to agreeableness such as trustworthiness, straightforwardness, modesty and altruism (Nguyen et al. 2013) should be emphasized during driving training school. It is also recommended that personality traits of driver's license applicants should be conducted before the final issuance of the driver's licence.

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