

PERSONALITY TRAITS AND SUBSTANCE USE AS PREDICTORS OF RECKLESS DRIVING AMONG COMMERCIAL TRICYCLISTS IN BIU, BORNO STATE, NIGERIA

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Abstract

The rate of reckless driving among commercial transport workers in Nigeria is gradually assuming a frightening proportion. However, despite its associated psychosocial and economic consequences, there is still paucity of research, especially among tricyclists, which paradoxically forms a significant mode of intra-city transportation in most parts of northern Nigeria. This study examined personality traits and substance use as predictors of reckless driving among commercial tricyclists in Biu, Borno state. To achieve its objectives, 150 eligible commercial tricyclists conveniently sampled in a cross-sectional survey were assessed with standardized instruments measuring big five personality traits, drug use and reckless driving at Kuros and Mandabula parks within Biu. Result did not indicate significant influence of personality traits on reckless driving. However, participants' reported substance use emerged as a significant risk factor to reckless driving. These findings implicate drug use as a major risk factor to the increasing rate of reckless driving in Biu and thus recommend stakeholder's efforts on regular drug check and treatment as a way to manage intra-town reckless driving and its potential consequences in Biu and beyond.

Keywords: Drug use, Personality traits, Reckless Driving, Biu.

Introduction

Reckless driving, defined as wanton disregard of traffic laws that poses a threat to traffic safety, is a significant public health problem globally (WHO, 2018), and one the terrifying social problems in Nigeria today (Awariefe & Ekruyota 2022). Within the last few years, acts of reckless

driving ranging from over speeding, driving under the influence of substance, distracted driving, moving in and out of traffic lanes, striking or nearly striking pedestrians and failure to observe traffic signs while driving have greatly increased across many countries, including United States, Canada and a host of Asian nations (World Health Organization. Global status report on road safety, 2015; International Centre for Investigative Reporting, 2023).

The continent of Africa is infamous for leading the chart of reckless driving worldwide (Lucidi et al.,2019), and within Africa, Nigeria has the highest road injury deaths; and together with Sudan, South Africa and Ethiopia, constitute over 40% of accident-related deaths within the Sub-Region (Global Road Safety Facility ([GRSF], 2019). These statistics are 15 times the road-related death rates in the UK, Sweden, Netherlands, which are reported to have the lowest death rates globally (Lucidi et al., 2019). At present, road traffic injuries and deaths—many which are the direct result of reckless driving—constitute the 3rd leading cause of death and 2nd leading contributor to disease burden in Nigeria (Makanjoula et al. 2014; FRSC, 2023).

Among Keke riders for example, substantial cases of reckless driving have been reported (Oginyi & Mbam, 2017), which has resulted to pernicious psychological consequences for victims and perpetrators, including increased stress, posttraumatic stress disorder, depression following accident-related injury or death (Makanjoula et al. 2014; Oginyi & Mbam, 2017). Reckless driving has also been found to present serious socioeconomic problems, which include but not limited to physical confrontations, declining family income due to cost of treatment, stigma and disability-related work disengagement- all which are due to either road accident injury or disability (Chen, 2009; Fawode & Nwaogazie 2023).

Biu is the second largest town in Borno state. Before now, traffic situation in this promising town was relatively good; however, the establishment of Nigerian Army University and other new developments in the town has witnessed unprecedented increase in vehicular and human traffic, thereby greatly increasing its traffic situation. Due to security concerns and dangers posed by the popular motorcyclists, tricycle riding has become the only permitted mode of intra-city transportation in Biu. Unfortunately, many of these tricyclists, in an effort to make quick money, engage in reckless driving that currently endangers their lives and those of their passengers. It

is therefore imperative to examine risk factors, so that interventions can be instituted.

Since reckless driving is behavioural, there are many different underlying factors that come into play when it comes to young people's driving behaviour. Demographic, individual and social factors have consistently been associated with reckless driving in many previous studies (Miles & Johnson, 2003; Mohammed et al., 2012; Sousa, 2015; Winter et al., 2015; Lajunen & Parker, 2001). Different personality traits, particularly sensation-seeking have been found to be a good predictor of driving violations (Dahlen et al. 2015). Personality traits like impulsiveness, sensation-seeking and boredom-proneness have also been reported to predict crash-related conditions aggressive and risky driving (Dahlen et al., 2015; Sousa 2015). In fact, factors such as sensation-seeking and narcissist personality, low tolerance for frustration, low self-esteem have been extensively studied and found to be associated with risky driving behaviour across cultures and settings (Dahlen & White, 2015; Schwebel et al. 2006).

However, it appears the influence of big-five personality traits on reckless driving is less studied, especially among commercial tricyclists in Nigeria. Intense emotional state-which characterizes neuroticism personality trait, for instance, may make drivers have low ability to control impulse and manage frustration on the road, making them more likely to engage in risky driving. On a contrary, Bogg and Roberts (2014) reported that conscientious personality traits were negatively associated with risky behaviour. A recent meta-analytic evidence has shown that conscientious individuals were less likely to violate traffic signs (de Winter & Dodou 2021). Conscientious individuals follow norms, rules and tasks until completion. The control of impulses and the facilitation of goal-directed behaviours seem important aspects of individuals who score high on conscientiousness measures. They tend to be excellent in planning and organizing while also effectively work with rules and orders. These traits may promote coordination and discipline on the road, thereby reducing the possibility of reckless driving.

In addition, another important variable that has the potential to influence reckless driving, but which has not been well researched among commercial tricycles in the north-east, is psycho-active substances. Psycho-active drugs are chemicals that alter the human nervous system and as a result, alter peoples' awareness, thinking, feelings and behaviours in different situations (Plotnik & Kouyoumdjian (2008). They include

substances like alcohol, nicotine, cocaine, marijuana, heroin and amphetamine, cannabis. Epidemiological studies have shown that the strongest determinant of traffic-related deaths, injuries, and economic costs is reckless driving particularly driving while under the influence of alcohol (Kelly et al., 2014). In the US for instance, alcohol-related motor vehicle accidents accounted for 22% of total economic costs due to motor vehicle accidents and 46% of fatality-related costs (Blincoe et al. 2000). Illicit drug use is involved in 5-25% of motor vehicle accidents; the most commonly detected drugs in impaired drivers were cannabis, followed by benzodiazepines, cocaine and other stimulants, and opioids (Kelly, 2014). While these studies have established high prevalence of reckless driving and some associated risks, there are largely foreign and may not reflect the driving situation in Nigeria.

Suffice that existing research show high rates of psychoactive drug use among commercial drivers (Makanjoula et al. 2014) and tricyclists in Nigeria (Oginyi & Mbam, 2017). Particularly in northern Nigeria, high rate of alcohol and marijuana are reported among motorcycle operators in Kano (Mustapha & Faisal 2016), which is likely to impair judgement and general lack of control. However, while these studies have established high rate of psychoactive substance use among drivers, they have not explored further to determine whether this could be associated with reckless driving in commercial tricyclists, especially in Biu town where there are observable increase in drug use among youths (which may influence reckless driving), especially with a growing tricyclists population.

In addition, studies examining interaction of drug use with personality traits are scarce. As a result, the interaction between these important variables in influencing driving behaviours has not been known, particularly among northern Keke drivers. Consequently, it was hypothesized that personality traits and psychoactive drug use will significantly and independently predict reckless driving among commercial tricyclists in Biu.

Method

Design and Setting

This cross-sectional survey was conducted among commercial tricyclists in Biu to examine how personality traits and drug use predict their reckless driving behaviour. Cross-sectional survey design is suitable for a research that seeks to gather data from a representative sample at a point in time, so

that inferences can be made from the sample to the general population. Thus, using this design, data were collected from tricyclists at Kuros and Mandabula parks at a point in time to assess how differences in their big-five personality traits and use of various psychoactive drugs may influence reckless driving.

Participants and Procedure

A total of 150 eligible tricyclists, conveniently sampled from a total population of 1200 registered tricyclists participated in the research. They comprised 58 (38.7%) tricyclists with secondary school education, 56(37.3%) higher education and 35(23.3%) with primary and no formal education. A total of 52 tricyclists were 30 years and above, representing 34.7%; 51(34.0%) were from 25-29 years, while 47(31.3%) were below 25 years. Commercial tricyclists who participated were required to provide consent and indicate interest to be recruited. They also met other inclusion criteria that required them to read and understand the questions in the questionnaire and have riding experience of at least 3 years.

The research followed ethical guidelines for human research, as contained in Helsinki declaration. A letter of introduction was presented to the chairman of tricyclists association in Biu for approval. After obtaining his approval, the researchers visited the designated parks to meet with potential participants who met research criteria, where research purpose and procedure were explained. Participants were assured of confidentiality and safety. They were also allowed to withdraw from the study if they were dissatisfied or uncomfortable. In all, 162 questionnaires were issued within 5 days but only 150 returned with usable data, representing about 95% response rate.

Instruments

Reckless driving. We assessed reckless driving using Aggressive Driving Behavior Scale (ADBS; Houston, Harris & Norman 2002). ADBS is an easy-to-administer and highly standardized measure of reckless driving with sound psychometric properties (Houston et al.,2002), with validation in Nigeria (Makanjoula et al. 2014). It contains 11 items that assess reckless driving in the past six months, on a 6-point scale: 1=never, 2=almost never, 3= sometimes, 4 =fairly often, very =often, 6= always). Possible scores range from 11-89, with higher scores reflecting more reckless driving. The reliability of the scale ranges from .80 to .95 (Houston et al., 2002).

Personality traits. The Big five inventory -10 (BFI - 10) was used to assess personality traits of the respondents. This is a brief version of the scale developed by Rammstedt and John (2007) that has been revalidated and proven to have good psychometric properties (Rammstedt et al., 2007). The inventory has a 5 - point Likert scale response ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The test–retest correlations varies between 0.68 and 0.84. The average of stability coefficients after the second test was $r = 0.75$. (Rammstedt et al., 2007).

Drug abuse. Psychoactive drug use was measured by Drug Abuse Screening Test (Skinner, 1982). The Drug Abuse Screening Test (DAST-10) is a 10-item brief screening tool that can be administered by a clinician or self-administered. Each question requires have a “Yes” or “No” response. The tool took approximately 15 minutes for each participant to report their drug use with 0 meaning “no problem” and 9-10 inferring “severe problem” .DAST 10 was originally reported to have a reliability scores ranging from 0.86 to 0.92 (Skinner, 1982), but subsequent studies in Nigeria have found even better reliability of 0.94 (Abel et al., 2018).

Data Analysis

Statistical Package for Social Sciences (SPSS-V23) was used for data analysis. Frequency counts and percentage were used to analyses demographic. Predictive role of personality traits and drug use were statistically determined by multiple regression statistics, since the aim was to determine the independent and joint predictive influence of multiple personality traits and drug use on reckless driving.

Table 1.
Correlation Matrix Showing Relationship amongst Study Variables

S/no.	Variable	1	2	3	4	5
	6 7 \bar{X} SD					
1	Openness	-				
2	Conscientiousness	.65*	-			
3	Extraversion	.63*	.60*	-		
4	Agreeableness	.48*	.51*	.45*	-	
5	Neuroticism	.36	.34*	.31*	.07	-
6	Drug use	.09	.14	.05*	.04	-.05
7	Reckless Driving	.06	.16	.03	.03	-.05 .98**
	-					

We began the analysis by establishing correlation amongst variables. From the analysis, openness ($r = .06$; $p < .05$), conscientiousness ($r = .16$; $p < .05$), extraversion ($r = .03$; $p < .05$), agreeableness ($r = .03$; $p < .05$) and neuroticism ($r = -.05$; $p < .05$) have no relationship with reckless driving. However, drug abuse is significantly and positively related to reckless driving ($r = .98^*$; $p < .05$), implying that the more tricyclists take drugs before driving, the more they will be reckless on the road.

Table 2.
Multiple regression showing influence of personality traits on reckless driving among commercial tricyclists in Biu.

Variables	β	t	P	R	R^2	df
F P						
Openness	-.06	-1.28	>.05			
Conscientiousness	-.01	-.37	>.05			
Extraversion	-.02	-.59	>.05			
Agreeableness	-.01	.22	>.05	.98	.97	7/142
450.91	>.05					
Neuroticism	-.04	-1.42	>.05			
Drug use	.99	53.95	<.05			

As can be observed in Table 2, personality traits are not significant predictors of reckless driving among the respondents. In specific terms, openness ($\beta = -.06$, $t = -1.28$, $P > .05$), conscientiousness ($\beta = -.01$, $t = -.37$, $P > .05$), extraversion ($\beta = -.02$, $t = -.59$, $P > .05$), agreeableness ($\beta = .01$, $t = .22$, $P > .05$) and neuroticism ($\beta = -.04$, $t = -1.42$, $P > .05$) are not independent predictors of reckless driving. However, drug abuse emerged as a significant independent predictor of reckless driving among commercial tricyclists in Biu ($\beta = .99$, $t = 53.95$, $P < .05$). Further results in the regression summary table showed insignificant interaction, implying that personality traits and drug use are not joint predictors of reckless driving [$R = .98$, $R^2 = .97$, $[F(7,142) = 450.91, P > .05]$]. Clearly, this result has shown that drug abuse remains a major and independent risk factor to reckless driving exhibited by commercial tricyclists in Biu.

DISCUSSION

Reckless driving among drivers constitute a frightening social problem in Nigeria and Biu, a rapidly growing town in vehicular and human

population, is not an exemption. This study therefore examined whether personality differences and substance use among commercial tricyclists could constitute risk to this precarious situation in Biu. One hundred and fifty (n=150) commercial tricyclists were conveniently sampled in a cross-sectional survey that utilized standardised instruments to examine independent and joint influences of personality traits and drug use on reckless driving, with multiple regression analysis tested at $p < .05$ level of significance.

Our findings from multiple regression analysis did not find significant influence of any of the five personality traits on reckless driving. This result is unexpected and contradicts previous research which have consistently linked reckless driving to differences in drivers' personality traits, particularly conscientiousness (Bogg & Roberts 2014; de Winter & Dodou 2021) and neuroticism (Sheerer 2015), and that a combination of extraversion, conscientiousness, agreeableness, and neuroticism elevates risk of reckless driving among drivers (Arthur et al 2021). However, drivers' substance use emerged as an independent risk factor to reckless driving among commercial tricyclists, thus supporting previous research among drivers (Makanjoula et al. 2014) and tricyclists in Nigeria (Oginyi & Mbam, 2017). This goes to show that high rate of alcohol and marijuana found in commercial transport operators in Nigeria (Mustapha & Faisal 2016) is deleterious and could have remained a major risk to increasing reckless driving that is currently witnessed in Biu and its environs.

Illicit drug use among drivers accounts for about 5-25% of motor vehicle accidents; the most commonly detected drugs in impaired drivers were cannabis, followed by benzodiazepines, cocaine and other stimulants, and opioids (Kelly, 2014). Incidentally, most of these substances are consumed in large quantity in Biu. The consumption of Shisha, cannabis and packaged alcohol remain high among youths. When consumed, these drugs can diminish consciousness and impair sense of judgement and decision-making on the road, thereby leading to disobedience to traffic signs and other dangerous driving behaviours.

From these findings, it can be concluded therefore that, personality differences do not constitute risk; rather, high consumption of drugs remains a major problem. Although a plethora of foreign research provide support for the influence of personality, it is possible that cultural and

methodological differences may account for disparity in results. Most of these studies are meta-analysis, qualitative in nature and some employed a robust methodology. In contrast, our quantitative research was affected by time, the conservative nature of some participants which is likely to affect honest responses. Other potential limitations include the cross-sectional survey design, which lack absolute control over extraneous variables. Since variables were not manipulated and controlled, the reported reckless driving may not be completely explained by drug use, and as such, should be interpreted with caution. Similarly, the small sample size and social desirability influences may have affected both the internal and external validity of the study findings, which is a great limitation. Despite these limitations, the present study is the first empirical research to highlight the role of personality traits and substance use on reckless driving among tricyclists in North-east, and therefore can help impact policy and clinical practice that targets substance use control as the surest measure to control reckless driving among tricyclists in Biu and beyond.

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