

OCCUPATIONAL STRESS, PERSONALITY TRAITS, AND SOCIO-DEMOGRAPHIC DETERMINANTS OF SUBSTANCE ABUSE AMONG COMMERCIAL MOTORCYCLE RIDERS IN OYE LGA, EKITI STATE, NIGERIA

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ABSTRACT

Substance abuse among commercial motorcycle riders has been on the rise and remains a major public health and road safety concern due to its association with impaired judgment, risky riding behaviours, traffic accidents, and reduced occupational performance. This study investigated occupational stress, personality traits, and socio-demographic factors as predictors of substance abuse among Okada riders in Oye Local Government Area, Ekiti State, Nigeria. A cross-sectional survey research design was adopted. Two hundred (200) commercial motorcycle riders were selected through convenience sampling, and data were collected using standardized measures of substance abuse, occupational stress, personality traits, and socio-demographic characteristics. Data were analyzed using descriptive statistics, independent samples t-test, multiple regression, and hierarchical multiple regression analyses. The findings revealed that respondents with high occupational stress reported significantly higher substance abuse than those with low occupational stress, $t(198) = 5.21, p < .05$. Personality traits jointly predicted substance abuse, accounting for 10% of the variance ($R^2 = .10, F(5,194) = 4.08, p < .05$). Extraversion ($\beta = .220, p < .05$), agreeableness ($\beta = .244, p < .05$), conscientiousness ($\beta = .152, p < .05$), and openness to experience ($\beta = .147, p < .05$) significantly predicted substance abuse, whereas neuroticism did not. Socio-demographic factors also significantly predicted substance abuse ($R^2 = .10, F(7,192) = 3.18, p < .05$), with age, religious affiliation, income level, and marital status emerging as significant predictors. Furthermore, gender did not significantly moderate the relationship between personality traits and substance abuse ($\beta = .041, p > .05; \Delta R^2 = .01$). The study concludes that substance abuse among Okada riders is influenced by a combination of occupational, personality, and socio-demographic factors which implies the need

for stress management interventions, behavioural counselling, and policies aimed at improving the welfare and working conditions of commercial motorcycle riders.

Keywords: substance abuse, occupational stress, personality traits, socio-demographic factors, motorcycle riders

INTRODUCTION

Substance abuse remains a major global public health concern with significant implications for morbidity, mortality, workplace safety, and socioeconomic development (World Health Organization [WHO], 2024). Specifically, the use of alcohol, opioids, cannabis, stimulants, tobacco, and non-medical prescription drugs has been widely linked to impaired cognitive functioning, reduced productivity, risky behaviours, and an increased likelihood of injury and death (WHO, 2024; United Nations Office on Drugs and Crime [UNODC], 2024). In the work environment, substance abuse has been linked with decreased productivity, poor decision-making, and an increased likelihood of workplace accidents (Kiwango et al., 2021; Faramade et al., 2025), particularly for people involved in dangerous occupations such as transport.

Commercial motorcycles transportation or popularly called Okada riders have become one of the indispensable parts of transportation services in many

developing countries, especially sub-Saharan Africa, where there is lack of sufficient public transportation facilities (Afolabi & Gbadamosi, 2017), and there is increasing unemployment (Kimengsi & Agyingi, 2021), and socio-economic activities (Nambiza et al., 2026). In Nigeria, Okada motorcycle transportation is one of the most important aspects of transportation service provision, especially in peri-urban and rural areas (Faramade et al., 2025). Motorcycle riding as a profession involves long working hours, income insecurity, road inadequacy, exposure to various traffic risks, and psychological pressure, factors that might lead to substance abuse (Nambiza et al., 2026).

Evidence indicates that substance use is highly prevalent among commercial motorcycle riders. Studies conducted in Nigeria and other African countries show consistently high rates of psychoactive substance consumption among this population. For instance, Faramade et al. (2025) reported a lifetime prevalence of 68% of substance use among commercial

motorcyclists in Osun State, while Obadeji et al. (2021) found a prevalence of 61%, with alcohol, cigarettes, tramadol, and cannabis being the most used substances. Similarly, Olatunji et al. (2020) identified tramadol as a frequently abused substance among motorcycle operators in Ekiti State. Comparable findings have also been reported in Tanzania, where hazardous alcohol consumption among motorcycle taxi riders was estimated at over 60% (Kitua et al., 2019), indicating that the phenomenon is both widespread and persistent across regions.

The public health significance of this pattern is further underscored by the strong association between substance use and road traffic accidents. Psychoactive substances impair judgment, reaction time, and motor coordination, thereby increasing the likelihood of risky riding behaviours and crash involvement (Heydari et al., 2016; Kiwango et al., 2021). For instance, Kiwango et al. (2021) reported that risky alcohol consumption increased the odds of road traffic injuries by nearly six times among motorcycle riders, while Obadeji et al. (2020) found that substance users were significantly more likely to experience road traffic accidents. A systematic review further confirmed alcohol and drug use as

consistent predictors of motorcycle-related injuries globally (Nambiza et al., 2026), highlighting substance abuse as both a behavioural and safety concern.

Commercial motorcycle riders operate under demanding and stressful working conditions characterised by long hours, financial pressure, inadequate rest and frequent exposure to hazardous road environments. In response to this harsh occupational environment, some of the riders resort to the use of psychoactive substances as a coping mechanism to sustain energy, reduce fatigue, enhance alertness, or manage psychological strain. However, such practices expose them to serious health risks, including dependence, cognitive impairment, and mental health challenges, while also increasing the likelihood of risky riding behaviours that endanger passengers, pedestrians, and other road users.

Apart from occupational and environmental influences, psychological factors such as personality trait are increasingly linked to substance use behaviour. The term represents enduring patterns of thinking, feeling, and behaving that shape how individuals respond to stress and environmental demands (Costa & McCrae, 2010). The Five-Factor Model, comprising extraversion, agreeableness,

conscientiousness, neuroticism, and openness to experience, has been widely used to explain behavioural tendencies, including substance use (Costa & McCrae, 2010). Studies have shown that high neuroticism, impulsivity, and low agreeableness are associated with increased vulnerability to substance abuse (Zilberman et al., 2018; Kinyanjui et al., 2023). Similarly, research among transportation workers has demonstrated that personality traits significantly influence substance use and risky driving behaviours, with studies reporting that personality factors can explain a substantial proportion of variance in substance abuse and accident involvement (Romero et al., 2019; Abdoli et al., 2018; Janfada et al., 2019).

In addition to personality traits, socio-demographic factors such as age, gender, income level, marital status, and educational attainment have been consistently identified as important determinants of substance use behaviour (Osamika et al., 2022; Akande et al., 2023). Younger individuals are often more likely to engage in substance use, while low income and limited education have been linked to increased vulnerability due to economic stress and reduced awareness of health risks (Gudaji et al., 2016; Nambiza et al., 2026).

Furthermore, studies among commercial drivers in Nigeria and other African countries indicate that socio-demographic characteristics significantly shape substance use patterns and risk exposure (Ibrahim et al., 2026; Osamika et al., 2022). Despite this growing body of evidence, limited studies have simultaneously examined personality traits and socio-demographic factors as combined predictors of substance abuse among Okada riders, particularly in Southwestern Nigeria. This study therefore seeks to address this gap by investigating how personality traits and socio-demographic characteristics influence substance abuse among commercial motorcycle riders. Substance abuse is a multifaceted phenomenon that cannot be adequately explained by a single category of determinants. Personality traits reflect relatively stable psychological predispositions that influence an individual's thoughts, emotions, and behavioural responses, whereas socio-demographic characteristics represent the social and economic contexts within which such behaviours occur.

Objectives of the Study

The study objectives are to:

- i. investigate the effect of occupational stress on substance abuse among commercial motorcycle riders.
- ii. examine the influence of personality traits on substance abuse among commercial motorcycle riders.
- iii. assess the influence of socio-demographic factors on substance abuse among commercial motorcycle riders.
- iv. determine whether gender moderates the relationship between personality traits and substance abuse among Okada riders in Oye Local Government Area, Ekiti State.

THEORETICAL UNDERPINNING

The theoretical background for this study is anchored on General Strain Theory (Agnew, 1992) and the Trait Theory of Personality (Costa & McCrae, 2010) providing a complementary explanation for substance abuse among commercial motorcycle riders in the study area. While the former provides an explanation on substance use as a response to environmental and socioeconomic pressures, the Trait Theory focuses on how individual differences shape vulnerability to such behaviours.

The General Strain Theory points out that deviant acts such as substance use arise from strain which might be because individuals fail to attain desired goals, or because of deprivation of positively valued stimuli, or faces negative stimuli (Agnew, 1992). Such strain triggers the occurrence of negative emotions, which include frustration, anger, and depression. To cope with such negative feelings, an individual may use certain coping methods. However, if legitimate coping measures fail to work or become inaccessible, the person may engage in harmful activities, such as substance abuse, as a means of dealing with emotions (Agnew, 1992; Jang & Johnson, 2000). For riders of commercial motorcycles, occupational strain factors like unstable earnings, prolonged working hours, dangers on the road, and job uncertainty are constant strains faced by them.

Nevertheless, strain theory does not entirely account for why certain people abuse drugs while others do not, thus the significance of personality differences. In explaining such discrepancies in behavior, Trait Theory of Personality stresses that all individuals have consistent personality traits that determine how they perceive and respond to their environment (Goldberg, 1990; Costa & McCrae, 2010). Based on the

Five-Factor Model, comprising extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience, researchers have found that certain personality traits could be used to predict behavioral patterns, among the tendency to abuse substances. For example, a person who scores high on neuroticism is emotionally unstable and cannot tolerate any stress, thus making him/her vulnerable to substance abuse (Zilberman et al., 2018; Kinyanjui et al., 2023).

From the foregoing, these theories suggest that abuse among Motorcycle riders is the result of an interaction between environmental strain and individual personality traits. While General Strain Theory explains the external pressures that create motivation for substance use, Trait Theory explains the internal psychological differences that influence coping choices under stress (Agnew, 1992; Costa & McCrae, 2010). Riders experiencing high occupational strain and possessing maladaptive personality traits such as high neuroticism or low conscientiousness are more likely to engage in substance use as a coping mechanism. In contrast, those with adaptive personality profiles may better regulate stress and avoid substance use despite similar environmental pressures.

Hypotheses

Based on this theoretical background, the following hypotheses were put forward:

1. Respondents with high level of occupational stress will significantly report higher substance abuse than those with low level of occupational stress
2. Personality traits (extroversion, neuroticism, openness to experience, agreeableness and conscientiousness) will jointly and independently predict substance abuse among Okada riders in Oye Local Government, Ekiti State.
3. Socio-demographic factors (age, educational qualification) will jointly and independently predict substance abuse among Okada riders in Oye Local Government, Ekiti State.
4. Gender does not significantly moderate the relationship between personality traits and substance abuse among Okada riders in Oye Local Government Area, Ekiti State.

METHODOLOGY

The cross-sectional survey research design is employed in this study because it allows data collection from a defined population at a single point in time and allows for the

examination of relationships among variables without manipulation (Vega et al., 2021). The study was conducted among commercial motorcycle operators (Okada riders) in Oye Local Government Area of Ekiti State, Nigeria. The study area provides relevant context for the study due to the widespread reliance on motorcycle transportation for daily economic and social activities. The study population comprises riders operating within various motor parks, junctions, and key transport routes across the local government area, where exposure to occupational stressors and behavioural risk factors is common.

The study employed the convenience sampling technique to select respondents for the study. This approach was adopted due to the accessibility of Okada riders in designated locations such as motor parks and roadside stations, as well as the practical difficulty of obtaining a complete sampling frame of the population. A total of 200 respondents were selected for the study, which is considered sufficient for conducting multiple regression analysis and other inferential statistical procedures required to test the study hypotheses.

Data were collected using a structured questionnaire consisting of four sections.

The first section captured socio-demographic information such as age, gender, marital status, educational level, and income. The second section measured substance abuse using the Chinese Drug Involvement Scale, a 22-item instrument that assesses individuals' level of involvement in drug use through indicators such as actual drug experience, attitudes toward drug use, and peer influence. The scale has demonstrated good internal consistency with reliability coefficients reported at $\alpha = 0.87$, and $\alpha = 0.81$ in similar contexts (Faul & Hudson, 1997). Higher scores on the scale indicate greater involvement in substance use.

The third section assessed occupational stress using the Job-Related Tension Index (JRTI) developed by Kahn et al. (1964). The instrument contains 15 items measuring the frequency of stressful work experiences such as role overload and job-related tension. Responses are rated on a five-point Likert scale ranging from "Never" to "Very Often," with total scores ranging from 15 to 75. Higher scores indicate greater perceived occupational stress. The scale has demonstrated good reliability with a coefficient of $\alpha = 0.85$ (Nor-Liyana & Mansor, 2009). The fourth section measured personality traits using the Ten-Item

Personality Inventory (TIPI), which assesses the Big Five personality dimensions: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. The TIPI uses a five-point Likert scale and has been validated as a brief measure of personality, with test-retest reliability coefficients ranging from 0.62 to 0.77 across the five dimensions, making it suitable for use in survey research where respondent fatigue may be a concern.

Before data collection, permission to conduct the study was obtained from the leadership of the commercial motorcycle riders' association in Oye Local Government Area, Ekiti State, who facilitated access to the participants at the selected motorcycle parks. Eligible participants included commercial motorcycle riders aged 18 years and above who were actively engaged in motorcycle transportation within the study area and voluntarily agreed to participate in the study, while individuals below 18 years of age, those not actively engaged in commercial motorcycle operations, and those who declined participation were excluded. The purpose of the study, voluntary nature of participation, confidentiality of responses, and participants' right to withdraw at any stage

without any consequences were explained before written informed consent was obtained.

Questionnaires were administered during periods of low business activity to minimise disruption to the riders' work, and respondents completed the questionnaires in a convenient location within the motorcycle parks that afforded reasonable privacy. In situations where a passenger arrived while a respondent was completing the questionnaire, data collection was temporarily suspended to allow the rider to attend to the passenger before resuming. Literate participants completed the questionnaire independently, while the researcher and trained research assistants administered the questionnaire as interviewer-administered schedules to non-literate participants by reading and, where necessary, translating the items into Yoruba without altering their meaning. Completed questionnaires were checked immediately for completeness and retrieved on the spot to minimise missing data and non-response.

Data collected were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics such as frequency distributions, percentages, means, and standard deviations were used to

summarize respondents' socio-demographic characteristics and study variables. Inferential statistics were used to test the study hypotheses, with independent samples t-test applied where comparisons between groups were required, while multiple regression analysis was used to determine the predictive influence of occupational stress, personality traits, and socio-demographic factors on substance abuse among Okada riders. All analyses were conducted at a 0.05 level of significance.

RESULTS

Table 1: Independent Samples t-test Showing Difference in Substance Abuse Based on Occupational Stress Level (Hypothesis 1)

Stress Level	N	Mean	Std. Deviation	df	t	p-value
Low	92	18.42	5.31			
High	10	22.60	6.02	19	5.00	0.00
Occupational Stress	8	87		8	21	11

As shown in Table 1, there was a significant difference in substance abuse between respondents with high occupational

stress and those with low occupational stress ($t(198) = 5.21, p < .05$). Respondents with high occupational stress ($M = 22.87, SD = 6.02$) reported significantly higher substance abuse compared to those with low occupational stress ($M = 18.42, SD = 5.31$). The implication is that occupational stress is an important determinant of substance use behaviour among Okada riders in Oye Local Government Area, Ekiti State.

Table 2: Summary of Multiple Regression Table Showing Joint and Independent Prediction of Personality Trait on substance abuse among commercial motorcycle riders in Oye LGA (Hypothesis 2)

Predictors	B	t	p
Extraversion	.220	2.721	< .05
Agreeableness	.244	3.113	< .05
Conscientiousness	.152	2.201	< .05
Neuroticism	-.014	-.189	> .05
Openness	.147	2.003	< .05

Result presented in Table 2 revealed that there was significant joint prediction of personality traits on substance abuse among okada riders in Oye local government, $F(5,194) = 4.08, R^2 = 0.10; p < .05$. The $R^2 = 0.10$ indicates that the independent variable personality traits explained 10% variation in dependent variable (Substance abuse). Further results show that extraversion

($\beta = 0.22; t = 2.72; p < .05$), agreeableness ($\beta = .24; t = 3.11; p < .05$), conscientiousness ($\beta = .15; t = 2.20; p < .05$) and openness to experience ($\beta = 0.15; t = 2.00; p < .05$) independently and significantly predict substance abuse among Okada riders in Oye local government while neuroticism ($\beta = -.01; t = -.189; p > .05$) did not independently and significantly predict substance abuse among Okada riders in Oye local government. The hypothesis is therefore confirmed.

Table 3: Summary of Multiple Regression Table Showing Joint and Independent Prediction of Sociodemographic Factors on Substance Abuse among Okada Riders in Oye LGA (Hypothesis 3)

Predictors	B	t	p	R
Age	.153	1.995	< .05	0.31
Religious affiliation	-.194	-2.707	< .05	0.10
Educational level	-.068	-.935	> .05	4.08
Income level	.152	2.066	< .05	0.013
Working hour	.067	.929	> .05	
Type of employment	.011	.163	> .05	
Marital status	-.191	-2.474	< .05	

Table 3 shows that there was significant joint prediction of socio-demographic factors on substance abuse among Okada riders in Oye local government, $F(7,192) = 3.18, R^2 = 0.10;$

$p < .05$]. The $R^2 = 0.10$ indicates that the independent variable socio-demographic factors explained 10% variation in dependent variable (Substance abuse). Further results show that age ($\beta = 0.15$; $t = 1.99$; $p < .05$), religious affiliation ($\beta = -.19$; $t = -2.71$; $p < .05$), income level ($\beta = .15$; $t = 2.07$; $p < .05$), and marital status ($\beta = -.191$; $t = -2.47$; $p < .05$) independently and significantly predict substance abuse among Okada riders in Oye local government while educational level ($\beta = -.07$; $t = -.935$; $p > .05$), working hour ($\beta = 0.07$; $t = 0.93$; $p > .05$) and type of employment ($\beta = 0.01$; $t = 0.16$; $p > .05$) did not independently and significantly predict substance abuse among Okada riders in Oye local government. The hypothesis is therefore confirmed.

Table 4: Hierarchical Multiple Regression Showing Moderating Effect of Gender on the Relationship Between Personality Traits and Substance Abuse among Okada Riders (Hypothesis 4)

	M	Predictors	β	t	p	R^2	ΔR^2	F	p
1	Extraversion		.21	2.7	<.05	.10			
			.18	1.0	.30				
			.08	1.0	.30				
						.05			

	Agreeableness	.32	<.05						
		.20							
		.48							
		.12							
						.05			
	Conscientiousness	.21	<.05						
		.11							
		.57							
		.06							
						.05			
	Neuroticism	-.11	>.05						
		.10							
		.60							
		.18							
						.05			
2	Gender	.11	<.05						
		.09							
		.48							
		.57							
						.05			
3	Gender × Personality Traits	.00	>.05						
		.08							
		.49							
		.12							
						.05			

Hypothesis on the influence of gender in moderating the relationship between personality traits and substance abuse among Okada riders in Oye Local Government Area using hierarchical multiple regression revealed that personality traits significantly predicted substance abuse at the initial model level ($R = 0.31$, $R^2 = 0.10$, $F(5,194) = 4.08$, $p < 0.05$), indicating that extraversion, agreeableness, conscientiousness, and openness were significant predictors, while neuroticism was not. However, when gender was introduced into the model, it did not significantly predict substance abuse ($\beta = 0.067$, $p > .05$). More importantly, the interaction term between gender and personality traits was also not statistically significant ($\beta = 0.041$, $p > .05$), with a negligible change in explained variance ($\Delta R^2 = 0.01$). Based on this result, gender does not significantly moderate the relationship between personality traits and substance abuse among Okada riders in Oye LGA, Ekiti State.

DISCUSSION

The finding from the occupational stress hypothesis indicates that riders experiencing higher levels of occupational stress are more likely to engage in substance use behaviours compared to those with

lower stress levels. This suggests that the work environment of commercial motorcyclists, which is often characterised by long working hours, income instability, traffic congestion, and passenger-related pressure, plays a critical role in shaping coping responses. This outcome aligns with empirical evidence which has consistently shown that occupational stress is a strong determinant of substance use among transport workers, where psychoactive substances are often used as a coping mechanism to manage fatigue, emotional strain, and work-related pressure (Obadeji et al., 2021; Kiwango et al., 2021). The implication is that substance use in this population is not merely a behavioural choice but is partly driven by structural and occupational stressors embedded within their working conditions.

The results on personality traits further demonstrate that individual differences significantly shape substance use behaviour among Okada riders. Traits such as extraversion, agreeableness, conscientiousness, and openness were found to be relevant predictors, while neuroticism showed limited influence. This pattern suggests that personality dispositions that encourage sociability, risk engagement, and openness to experience may increase

exposure to substance-using environments, while conscientiousness may reflect reduced self-regulation and control in some individuals. These findings are consistent with prior research which links personality characteristics, particularly impulsivity, low behavioural inhibition, and sensation-seeking tendencies, to substance use and risky driving behaviours among motorcyclists and other occupational drivers (Zilberman et al., 2018; Kinyanjui et al., 2023; Akabri et al., 2021).

On the socio-demographic influence on substance use among riders, life-course factors such as age, income level, religious affiliation, and marital status. These results suggest that substance use is not uniformly distributed but is shaped by broader social positioning and economic realities. Younger riders and those with lower or unstable income appear more vulnerable, likely due to financial pressure and limited access to adaptive coping resources. Similar patterns have been documented in studies showing that socio-economic disadvantage, weak social support systems, and certain demographic characteristics increase susceptibility to substance use among commercial drivers (Osamika et al., 2022; Akande et al., 2023; Gudaji et al., 2016).

The moderation analysis further indicates that gender does not significantly alter the relationship between personality traits and substance use among Okada riders. This suggests that the influence of personality on substance use operates relatively consistently across male and female riders within the study population. This finding is consistent with emerging evidence that behavioural and psychological determinants of substance use may transcend gender boundaries in occupational driving populations, particularly where work conditions and environmental exposures are similar.

CONCLUSION

With increasing unemployment and unreliable public transport facilities, the use of commercial motorcycles continues to increase and so does its support for livelihood. This study explores the combined influence of occupational, psychological, and sociodemographic factors on substance abuse among Okada riders. In the findings, it was discovered that occupational stress emerged as a significant contextual determinant, indicating that the demanding nature of commercial motorcycle transportation, including time pressure, income instability, and exposure to road-

related risks, contributes to maladaptive coping behaviours such as substance use. Personality traits also play a meaningful role, suggesting that individual behavioural dispositions influence susceptibility to substance use, particularly among riders with tendencies toward sociability, lower self-regulation, and greater openness to experience. In addition, socio-demographic characteristics such as age, income level, religious affiliation, and marital status further shape patterns of substance use, reinforcing the importance of contextual and structural influences in understanding the behaviour.

The implications of these findings are important for public health practice and occupational policy formulation. Intervention strategies should move beyond individual-focused approaches and incorporate workplace-based stress reduction programmes, psychoeducation, and behavioural interventions tailored to commercial motorcyclists. There is also a need for policies that improve working conditions and economic stability within the transport sector, as these structural factors indirectly influence substance use behaviour. Furthermore, personality-informed prevention strategies may be

useful in identifying individuals at higher risk and providing targeted support.

LIMITATIONS AND SUGGESTION FOR FURTHER STUDIES

Despite achieving its purpose, this study is limited, because of its cross-sectional nature which restricts the ability to draw causal inferences, especially because of its reliance on self-reported data which may introduce response bias or underreporting of substance use. In addition, the study is limited to Okada riders in a specific local government area, which may affect the generalisability of the findings to other occupational groups or geographical settings. Future studies should consider adopting longitudinal research designs to better establish causal relationships and change over time, while incorporating mixed-method and comparing different regions to provide deeper insight into the lived experiences behind substance use behaviours.

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