

*Full Length Research Paper*

# **Alcohol use and compliance with road safety rules among commercial motorcyclists in Southwest Nigeria**

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**Alcohol has been identified as one of the major causes of traffic accident as those driving under the influence of alcohol barely comply with road safety rules and regulations. This study investigated the influence of alcohol use on compliance with road safety rules among commercial motorcyclists in Southwest Nigeria. Cross sectional descriptive research of the survey type was used to conduct the study. The sample size comprised 660 registered commercial motorcyclists selected through multi stage sampling techniques. A self-developed and validated questionnaire was used to elicit information from the respondents. The reliability of the instrument was determined through Cronbach's alpha with a reliability coefficient of 0.82. The data analysis was done using SPSS software version 19.0. The research questions were answered using descriptive analysis and correlation matrix was used to determine the association between alcohol use and factors influencing alcohol use at 0.05 level of significance. Findings showed that majority of the motorcyclists 236 (39.4%) were regular users of alcohol and a significant negative correlation ( $r = -0.174$ ,  $p < 0.05$ ) was found between alcohol use and compliance with road safety rules and regulations. It was recommended that government under the auspices of Federal Road Safety Corps should organize sensitization through on dangers of alcohol use on safe driving to commercial drivers through motorcycle parks rallies, workshops and regular health talks.**

**Key words:** Alcohol, commercial, motorcyclists, rules, compliance.

## **INTRODUCTION**

Commercial motorcycles have been identified as the most common form of informal transport system in major cities of Nigeria (Johnson and Adebayo, 2011). Scholars have adduced reasons for the introduction of commercial motorcycles in Nigeria. For instance, Adetunji and Aloba

(2014) gave two factors that could have been responsible for the high proliferation of commercial motorcycles. One was the economic situation of the country which made purchase of cars for commercial cabs unachievable and thus made people resort to motorcycles which are

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Cheaper to invest in. The second issue is the creation of new states which led to rapid expansion of cities with the attendant problem of rural-urban migration. The growing population put more pressure on the need for more transportation facilities which emerged in the form of motor vehicles. In addition, motorcycles are found to be good for navigating through side streets and beyond the limits of motorable roads.

To ensure road safety, uninterrupted traffic flow and reduced road accidents, the Nigeria highway codes were revised in 2016. The highway codes were to conduct human activities on the road by helping road users to use the road in a safe and civilized manner non-compliance was to go with sanction and penalties. In the revised codes, it was revealed that alcohol, even when taken below the legal limit has the ability to reduce driving stability, affects vision, judgement, reduces co-ordination and slows down action hence, the code limited maximum alcohol level of drivers to 0.5 g/L or 0.05% Blood Alcohol Concentration (BAC) and motorcyclists should not drive after consuming alcohol. Other items in the Highway Code include, motorcyclists are to protect their heads with safety helmet, put on thick gloves and riding boots. In addition, they are to carry only one passenger and not to carry out sized persons or objects or ride too close to vehicles. Motorcyclists are to slow down at intersections, keep within speed limit and when the need to turn arises should make use of trifactor (Highway Code, 2016; Naijaauto, 2017).

In recent times, significant rise in injuries from severe crash involving commercial motorcyclist has been recorded (Oyeleke and Bada, 2015). Fatal consequences resulting from motorcycle accidents occur frequently as a result of the relationship between the host, the agent and the environment (Lawal et al., 2018). Sufiyan and Ahmad (2012) discovered that 25% of road crashes in Nigeria involve motorcycles while Ogunkeyede and Osunyande (2019) adjudged motorcycle to be the second most common cause of road traffic injuries. Many of such motorcycle accidents could be linked with the fact that the motorcyclists were not complying with road safety rules and regulations. Most especially, many of the riders lack adequate basic knowledge about safety, protective devices and road traffic codes (Owoaje et al., 2005) while many motorcycle riders on impulse would suddenly abandon their menial jobs and take to motor cycle riding without adequate training that the job entails thus predisposing them to accidents (Ogunkeyede and Osunyande, 2019).

Compliance with road safety rules and regulations has been thrown up as a factor to prevent and significantly reduce road crashes (Johnson and Adebayo, 2011). Ogunkeyede and Osungbade (2019) defined compliance as a state of being in accordance with established guidelines or legislations. Avalanche of studies have revealed that majority of the commercial motorcyclists do

not usually comply with road safety rules and regulations. Oginni et al. (2007) in a similar study discovered that only 10.3% of commercial drivers ever received training on riding motorcycle while almost half of the respondents admitted carrying more than one pillion to the extent that some claimed to carry two to four passengers at a time. The findings added that only negligible number of the participants used helmet or supplied helmet to their passengers. Another in-depth study recorded that of the numerous risk-taking actions discovered among commercial motorcyclists, disobedience to road signals was remarkable while over half of the respondents picked over speeding as a cause of motorcycle accidents (Ogunmodede et al., 2012).

Compliance with road safety rules and regulations could be determined by various factors ranging from environmental situations to the lifestyles of the motorcyclists. The involvement of alcohol in various road crashes has been reported in extant literature and scholarly articles. Oginni et al. (2007) revealed that majority of the road crashes among motorcyclists are attributable to the use of alcohol among commercial motorcyclists. On the other hand, Makinde et al. (2016) significantly associated alcohol use with the occurrence of road crashes while Ogunmodede et al. (2012) recorded that majority of the drivers with history of accident involvement indicated that they drink-drive before the accident. Likewise, Efoh et al. (2018) posited that alcohol being readily available encouraged the high prevalence of alcohol use among all age groups in Africa and the use of alcohol encourages users to take more risks on the road or to behave more aggressively while driving. The factors influencing the consumption of alcohol according to Omumu et al. (2017) include to keep awake, peer pressure, for mood elevation and to suppress fatigue. In addition, free access to alcohol is an important contributory factor to alcohol consumption. The presence of alcohol retailers in or around most okada (motorcycle) parks predisposes them to easy access and patronage.

Non-compliance with traffic laws has been observed to be a major factor impeding the safety of the road traffic system. Motorcyclists have been identified to have poor safety record when compared with other road user groups (Johnson and Adebayo, 2011). Many of the recorded road traffic accidents among commercial motorcyclists have been traced to non-compliance with road safety rules and regulations such as driving under the influence of alcohol, dangerous overtaking, reckless and speedy driving of vehicles, overburdened or overcapacity hauling of public transport vehicles and poor maintenance of vehicles (Gopalakrishnan, 2012; Gana and Emmanuel, 2014). In addition, Talib (1991) recorded that 92% of traffic accidents are preceded by at least one traffic law violation. Studies have shown that commercial motorcyclists abuse alcohol (Ogundipe et al., 2019;

**Table 1.** Demographic characteristics of alcohol users and abstainers of commercial motorcyclists in southwest Nigeria.

Demographic characteristics	Grouping	Sample	Alcohol use responses				$\chi^2$	Sig.
			Yes	%	No	%		
Age	≤20 years	81	42	51.9	39	48.1	29.34	0.000
	21 - 30 years	304	220	72.4	84	27.6		
	31 - 40 years	158	112	70.9	46	29.1		
	≥40 years	56	28	50.0	28	50.0		
Marital status	Divorce	57	46	80.7	11	19.3	14.31	0.006
	Married	261	188	72.0	73	28.0		
	Single parent	84	54	64.3	30	35.7		
	Single	179	112	62.6	67	37.4		
	Widow	18	7	38.9	11	61.1		
Educational status	Non formal education	103	81	78.6	22	21.4	47.81	0.000
	O' Level	166	128	77.1	38	22.9		
	NCE/ND	189	125	66.1	64	33.9		
	First Degree/HND	118	50	42.4	68	57.6		
	Other	23	18	78.3	5	21.7		

Omumu et al., 2017; Makinde et al., 2016; Ogunmodede et al., 2012). Various reasons were identified by scholars to determine alcohol use by commercial motorcyclists. The identified reasons include suppression of cold, relieve fatigue, availability, keeping awake and peer group influence (Omumu et al., 2017; Ogunmodede et al., 2019).

Studies have been conducted on alcohol abuse among commercial motorcyclists but no focused study on alcohol use and compliance with road safety rules and regulations. It is on this background that the study aimed to investigate the prevalence of alcohol use, compliance with road safety rules and regulations and association between alcohol use and factors influencing it as well as relationship between alcohol use and compliance with road safety rules and regulations.

## RESEARCH METHODS

The study population comprised registered commercial motorcyclists that operate in Southwest Nigeria. Cross-sectional descriptive research design of the survey type was used to conduct the study among 660 commercial motorcyclists. The respondents were randomly selected using multistage sampling techniques. Using simple random sampling, three states were selected from the six states in Southwest Nigeria, followed by the selection of two towns from each state and 10 motorcycle parks from each town. In addition, eleven registered commercial motorcyclists were selected from each park. Self-developed questionnaire was used to gather information from respondents. The reliability of the research instrument was determined using Cronbach Alpha with a coefficient of 0.82. The administration of the research instrument was done with the aid of four Research Assistants. The data collected were collated and analyzed using SPSS software version 19.0. Only 599 copies of the questionnaire were found usable having a response

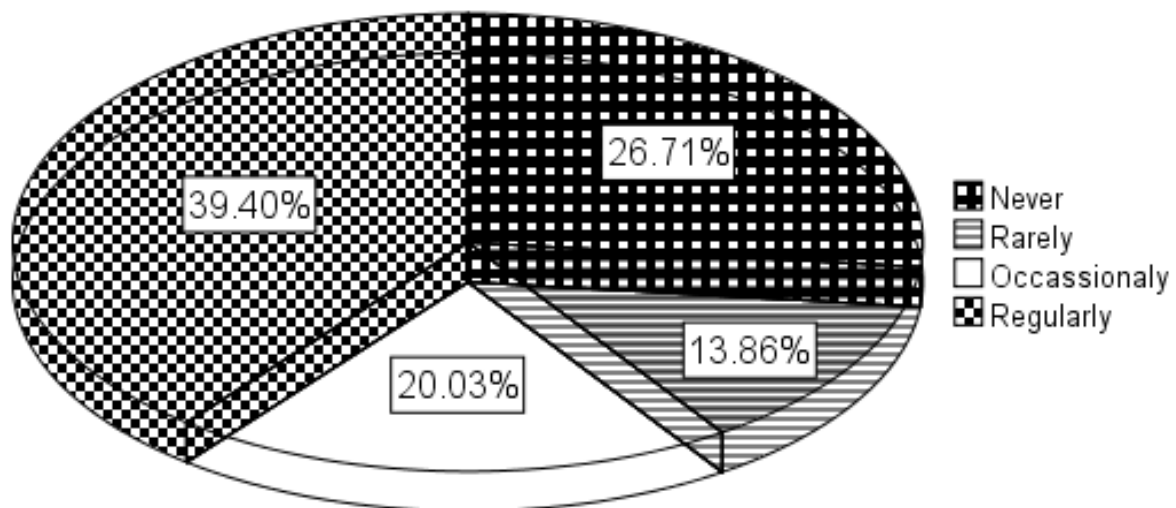
rate of 90.8%. The descriptive aspects of the analysis were done through the use of frequency counts, percentages and Chi square were presented with tables and bar chart. The hypothesis formulated was tested using Analysis of Variance and further subjected to Scheffe Post Hoc to determine the area of statistical difference. The significant value was determined at p-value less than 0.05.

## FINDINGS

Table 1 shows the demographic characteristic and the prevalence of alcohol use. The table clearly shows that at 0.05 level of significance, commercial motorcyclists irrespective of the age ( $\chi^2=9.34$ ,  $p=0.000$ ), marital status ( $\chi^2=14.31$ ,  $p=0.006$ ) or educational status ( $\chi^2=47.81$ ,  $p=0.000$ ) do consume alcohol. The table further revealed that with 72.4, 70.9, 51.9 and 50.0% of commercial motorcyclists of age 21 - 30, 31 - 40, ≤20 and ≥40 years, respectively involved in alcohol use. On marital status, percentage use of alcohol varies from 38.9% among the widow commercial motorcyclists to 80.7% among the divorce commercial motorcyclists. From the strata of education status, alcohol use varies with 42.4% among first degree and HND holder to 78.6% among commercial motorcyclists who received no more than primary school education. Figure 1 shows the regularity of alcohol consumption among commercial motorcyclists.

### Question 1: To what extent is the use of alcohol among commercial motorcyclists in Southwest Nigeria?

Figure 1 shows the regularity of alcohol use among



**Figure 1.** A Pie chart showing the regularity of alcohol use among commercial motorcyclists.

**Table 2.** Frequency and percentages on compliance with road safety rules and regulations.

Compliance with road safety rules and regulations	Yes		No	
	F	%	F	%
Careful overtaking of vehicles or motorcycles	463	77.3	136	22.7
Would not receive phone calls	458	76.5	141	23.5
Comply with road signs (slows down at intersections and crossing signs)	445	74.3	154	25.7
Obey traffic lights	400	66.8	199	33.2
Received training before starting commercial motorcycling	344	57.4	255	42.6
Use protective gadgets (helmet, goggle) while driving	323	53.9	276	46.1
Have current driving license	311	51.9	288	48.1
Carry one passenger per time	217	36.2	382	63.8
Passenger uses crash-helmet	190	31.7	409	68.3
Drive motorcycle within speed limit	189	31.6	410	68.4

commercial motorcyclists. Out of 599 commercial motorcyclists sampled, only 26.71% (160) were reported of not taking alcohol at all. The remaining 73.9% (439) alcohol users constitute 39.4% (236) regular users, 20.0% (120) occasional users and 13.9% (83) rarely use alcohol.

### Research Question 2: Do commercial motorcyclists in Southwest Nigeria comply with road safety rules and regulations?

Table 2 shows responses on compliance with road safety (77.3% maximum and 31.6% minimum). Highest compliance was seen in careful overtaking of vehicles or motorcycles 463 (77.3%), followed by would not receive phone calls when riding motorcycle 458 (76.5%) and

comply with road signs such as slow down at zebra/children crossing signs 445 (74.3%). Low compliance was demonstrated in carry one passenger per time 217 (36.2%), passenger uses crash-helmet 190 (31.7%) and the least is drive motorcycle within speed limit 189 (31.6%).

### Hypothesis testing

**Hypothesis 1: There is no significant association between factors influencing alcohol use and the use of alcohol among commercial motorcyclists**

Table 3 shows association between factors influencing alcohol use and the use of alcohol among commercial motorcyclists. The result indicated that desires of

**Table 3.** Correlation matrix of association between alcohol use and factors influencing alcohol use (N=599).

Variable	Mean	Std. D	1	2	3	4	5	6	7
Alcohol use (1)	2.72	1.235	1						
Ward off stress (2)	2.64	1.280	0.247*	1					
Enhance sleep (3)	2.40	1.240	0.253*	0.821*	1				
Relief fatigue (4)	2.49	1.236	0.210*	0.816*	0.771*	1			
Social interaction (5)	2.50	1.237	0.212*	0.812*	0.747*	0.795*	1		
To be alert (6)	2.51	1.285	0.199*	0.769*	0.722*	0.772*	0.810*	1	
Increase performance (7)	2.54	1.285	0.225*	0.804*	0.728*	0.750*	0.828*	0.803*	1

**Table 4.** Pearson moment correlation showing the relationship between alcohol use and compliance with road safety rules and regulations

Variable	Mean	SD	R	Sig.
Alcohol use	2.72	1.235		
Compliance with road safety rules and regulations	14.47	2.35	-0.174*	0.000

commercial motorcyclists to ward off stress ( $r=0.247$ ), enhance sleep ( $r=0.253$ ), relief fatigue ( $r=0.210$ ), social interaction ( $r=0.212$ ), be alert ( $r=0.199$ ) and increase performance ( $r=0.225$ ) had positive and significant association with the use of alcohol. Thus, there is significant association between factors influencing alcohol use and the use of alcohol among commercial motorcyclists. This implies that the more commercial motorcyclists want to ward off stress, enhance sleep, relief fatigue, maintain social interaction, be alert and increase performance, the more tendency to use alcohol.

**Hypothesis 2: There is no significant relationship between alcohol use and compliance with road safety rules and regulations.**

Table 4 shows a significant negative correlation between alcohol use and compliance with road safety rules and regulations ( $r = -0.174$ ,  $p < 0.05$ ). The null hypothesis was rejected; hence, there is significant relationship between alcohol use and compliance with road safety rules and regulations. It means that when alcohol use increases compliance with road safety rules decreases while increase in compliance with road safety rules and regulations occurs with decrease in alcohol abuse.

## DISCUSSION

The findings of this study revealed that 73.9% of commercial motorcyclists in Southwest Nigeria are alcohol abusers. This means alcohol use is high among

commercial motorcyclists in the study area which agreed with the findings of Salako et al. (2013) that reported 62.7% of commercial motorcyclists taking alcohol during work hours. On the contrary, a lower number of participants (28.6%) admitted to early morning alcohol consumption in a similar study conducted by Ogundipe et al. (2019). Comparing the alcohol consumption of commercial drivers with general population, a much higher prevalence was discovered among motorcycle drivers in Iran (Heydari et al., 2016).

Self-reported road safety rules and regulations compliance among motorcyclists revealed above 60% in obeying traffic lights, have knowledge of road safety rules and comply with road signs. The compliance with the specified mandatory training before starting commercial motorcycle business and having current driving license had a little over 50% compliance. Carrying more than one passenger, using protective gadgets, giving crash-helmet to passenger, driving above speed limit and receiving phone calls during driving had below 50% compliance. The 51.9 discovery on possession of current diving license was the closet to the 61.2% of motorcyclists having a driving license as reported by Amoran et al. (2005). Other findings on compliance were far below the current findings. For instance, Amoran et al. (2005) discovered that 100% of their respondents did not use crash helmet whereas 53.9% attested to using crash helmet in the current study.

Another key finding of this study showed a significant association between factors influencing alcohol use and the use of alcohol among commercial motorcyclists. This connotes that the more commercial motorcyclists want to ward off stress, enhance sleep, relief fatigue, maintain

social interaction, be alert and increase performance, the more tendency to use alcohol. In consonance with this finding, scholars such as Omumu et al. (2017) and Ogundipe et al. (2019) identified reasons including suppression of cold, relieve fatigue, availability, keeping awake and peer group influence as determinant of alcohol use by commercial motorcyclists.

The findings further revealed that there was a significant relationship between alcohol use and compliance with road safety rules and regulations. It means that when alcohol use increases compliance with road safety rules and regulations decreases and when there is increase in compliance with road safety rules and regulations, alcohol abuse decreases. Thus, in agreement with this finding, Johnson and Adebayo (2011) found compliance with road safety rules and regulations as a factor to prevent and significantly reduce road crashes.

## Conclusion

Based on the findings of the study, it was concluded that majority of the motorcyclists were regular users of alcohol. Most motorcyclists access to alcohol in order to ward off stress, enhance sleep, relief fatigue, maintain social interaction, be alert and increase performance. Meanwhile, exposure to alcohol use and abuse by motorcyclists contributed to their non-compliance with road safety rules and regulations.

## Recommendations

The following recommendations were made:

- (1) Specified mandatory training where commercial motorcyclists would be educated on road safety rules and regulations.
- (2) Law enforcement agents should periodically conduct blood alcohol concentration test on commercial motorcyclists to ascertain the eligibility of motorcyclists to convey passengers. Defaulters should be apprehended and sanctioned appropriately to serve as deterrents to other commercial motorcyclists.
- (3) The government should partner with health educators regularly in order to organize educational programme for commercial motorcyclists on the dangers of alcohol use.
- (4) Government under the auspices of Federal Road Safety Corps should organize sensitization through on dangers of alcohol use on safe driving to commercial drivers through motorcycle parks rallies, workshops and regular health talks.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

## REFERENCES

- Adetunji MA, Aloba O (2014). The Level of Compliance of Commercial Motorcyclists to Traffic Rules on Urban Roads in South Western Nigeria. *Journal of Educational and Social Research* 4(3):345-351.
- Amoran OE, Owoaje E, Giwa OA, Gbolahan B (2005). Road safety practices among commercial motorcyclists in a rural town in Nigeria: Implications for Health Education. *International Quarterly of Community Health Education* 24(1):55-64.
- Gana AJ, Emmanuel JA (2014). Road Transportation and Traffic Law Enforcement in Nigeria: A case study of the Federal Road Safety Corps (FRSC). *West African Journal of Industrial Academic Research* 11(1):134-151.
- Gopalakrishnan S (2012). A public health perspective of road accidents. *Journal of Family Medicine and Primary Care* 1(2):144-150
- Heydari ST, Vossoughi M, Akbarzadeh A, Lankarani KB, Sarikhani Y, Javanmardi K, Akbary A, Akbari M, Mahmoodi M, Shirazi MK, Tabrizi, R. (2016). Prevalence and risk factors of alcohol and substance abuse among motorcycle drivers in Fars province, Iran. *Chinese Journal of Traumatology* 19(2):79-84.
- Highway Code (2016). Nigeria Highway code <http://www.highwaycode.com.ng/iv-the-motorcyclist.html>
- Johnson OE, Adebayo AM (2011). Effect of Safety Education on Knowledge of and Compliance with Road Safety Signs among Commercial Motorcyclists in Uyo, Southern Nigeria. *Ghana Medical Journal* 45(3):89-96.
- Lawal N, Oche MO, Isah BA, Yakubu A, Raji MO (2018). Knowledge, Attitude and Compliance with Safety Protective Measures and Devices among Commercial Motorcyclists in Sokoto Metropolis, Northwestern Nigeria. *Journal of Advances in Medical and Pharmaceutical Sciences* 16(1):1-9.
- Makinde B, Awomodu D, Oyerinde OO (2016): Prevailing factors influencing the use of Alcohol among Motor cycle Riders in Ikenne local Government in Ogun State. Nigeria. *IJRDO-Journal of Health Sciences and Nursing* 1(5):1-16.
- Naijauto (2017) Nigeria highway code Signs and fundamental rules for overtaking. <https://naijauto.com/safe-driving/nigeria-highway-codes-fundamental-rules-for-overtaking-157>
- Oginni FO, Ugboko VI, Adewole RA (2007). Knowledge, attitude and practice of Nigerian commercial motorcyclists in the use of crash helmet and other safety measures. *Traffic Injury Prevention* 8(2) <https://www.tandfonline.com/doi/abs/10.1080/15389580601058472?src=recsys&journalCode=gpci20>
- Ogundipe L, Omotola A, Alabi QK, Oluwadare T, Obawole A (2019). Prevalence on early morning alcohol consumption among commercial motorcyclists and its health consequences in Ado-Ekiti, Nigeria. *Journal of Public Health*, [www.researchgate.net](http://www.researchgate.net)
- Ogunkeyede OS, Osungbade K (2019). Compliance of commercial motorcyclists with road safety measures in a Nigerian metropolitan city. *Traffic Injury Prevention* 11:1-3 <https://www.ncbi.nlm.nih.gov/pubmed/31710254>
- Ogunmodede TA, Adio GO, Ebijuwu AS, Oyetola SO, Akinola JO (2012). Factors Influencing High Rate of Commercial Motorcycle Accidents in Nigeria. *American International Journal of Contemporary Research* 2(11):130-140.
- Omumu F, Tibi P, Chenube O (2017). Commercial Cyclists (Okada Riders) and Alcohol Related Problems in Delta State, Nigeria. *Covenant International Journal of Psychology* 2(1):63-74.
- Owoaje ET, Amoran OE, Osemeikhain OO, Ohnoferi OE (2005). Incidence of road traffic accident and patterns of injury among commercial motorcyclists in a rural community in south western Nigeria. *Journal of Community Medicine and Primary Health Care* 17(1):7-12.
- Oyeleke TJ, Bada BV (2015): Alcohol use and locus of control as predictors of accident proneness among commercial motorcycle riders in Abeokuta. *African Journal for the Psychological Study of Social Issues* 18(2):123-131.
- Salako A, Olumide A, Sholeye OO (2013). Risk behaviors for road traffic accidents and sever crash injuries among commercial motorcyclists in Sagamu, South west, Nigeria. Online

Journal of Medicine and Medical Science Research 19(2).  
[www.researchgate.net](http://www.researchgate.net)  
Sufiyan MB, Ahmad M (2012). Knowledge, attitude and compliance with safety protective devices among commercial motorcyclists in Tudun-Wada Zaria, North-Western Nigeria. *Annals of Nigerian Medicine* 6(2):80-86.

Talib R (1991). Automatic policing and information systems for increasing traffic law compliance. *Journal of Applied Behaviour* 24(1):85-87.