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Alcohol Consumption and Road Rage among Commercial Tricycle Riders in South-South, Nigeria

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Abstract. This study examines the relationship between alcohol consumption and road rage experience among commercial tricycle riders in south-south Nigeria. Using expectancy theory of motivation as theoretical framework, a sample of 360 subjects was selected in a multi-stage sampling technique utilizing a structured questionnaire to elicit information about socio-demographic variables, alcohol consumption and road rage. Descriptive statistics and multiple regressions were used as method of data analysis at 0.01 and 0.05 significance level. The results showed that commercial tricycle riders were dominated by males and those who had attained secondary school education. It was further revealed that respondents consumed palm wine, spirit, beer, Goldberger, Gulder, stout, wine and *Ogogoro* at least once in a week. Other intoxicant substances that were consumed by respondents included marijuana, cannabis, cocaine, cigarettes, tobacco and tobacco snuffing. Further findings revealed that there is significant relationship between alcohol consumption and road rage especially for spirit (OR = 0.158, $p<0.01$) and *Ogogoro* (OR = 0.116, $p<0.01$) consumption. Association also exists between road rage and road traffic crashes. The study concluded that riding tricycle under the influence of alcohol consumption should be discouraged through policy formulation in order to curb the perpetration of road rage and road traffic crashes in the country.

Keywords: Alcohol use, road rage, road crash, commercial tricycle riders, Nigeria

1. Introduction

Road rage has emerged as one of the major causes of road crashes yet remain a neglected pandemic issue in sociological inquiries in Nigeria especially among the commercial tricycle riders. Earlier studies have shown that one of the major causes of this pandemic is the consequence of the changing patterns of alcohol consumption which was hitherto moderately and traditionally consumed as symbol of traditional ceremonial celebrities (Dumbili, 2013). Pludenmann, Parry, Donson and Sukhai (2004) observed that the use of alcohol contributes to road traffic injuries by impairing driving capabilities and thus increasing the risk of crash involvement by commuters.

Several studies have examined the relationship between alcohol consumption and the experience of road rage. For example, Fierro, Morales and Álvarez (2011) examined the relationship between alcohol consumption and the experience of road rage victimization and perpetration among drivers and non-drivers among the people living in Castile and Leon (Spain). It was found that drivers driving under the influence of alcohol and/or cannabis during the previous year that preceded the survey were associated with being a perpetrator of road rage. Further studies have also revealed that heavy drinkers and consumers of illicit drugs are often perpetrators and victims of aggressive behaviour on the road, as well as being "at fault" in traffic crashes (Chipman, Macdonald, & Mann, 2003; Macdonald, Anglin-Bodrug, Mann, Erickson, Hathaway, Chipman, & Rylett, 2003). Indeed, studies have consistently revealed that aggressive driving and road rage simultaneously influenced each other (Yu, Evans, & Perfetti, 2004), and thus resulting to road crashes. In their study as an instance, Drummer and colleagues (2004) noted that the involvement in drugs among drivers of vehicles results to killing of people in Australia.

Among the consequences of road crashes that result from road rage in global reports include loss of lives and income due to the increase in the cost of medical care for the victims of road crashes (Peden, 2004; Ogden, & Moskowitz, 2004; WHO, 2005). Peden (2004) documented that about 1.2 million people die in road accidents with 50 million people being injured annually. Further estimates have also shown that there may be an increase of these figures by 65% in 2030, except policies are put in place to prevent the causes of road accidents globally (WHO, 2005). According to Ukoji (2016), among the less-developing countries of the world, state capitals and larger metropolitan in Nigeria where commuters spend more time in vehicles has been found to be more vulnerable to road crashes. Relative to the costs of road traffic crashes, there is a loss of income accruable to those whose lives were lost to road crashes as well as increase in the cost of medical care on the families of injured people from road crashes. For instance, WHO (2005) reported that the annual costs incurred on road traffic crashes and injuries globally ranged between $65 billion to $100 billion.

Apart from these costs, Adekunle (2010) argued that the socio-economic costs of road crashes especially in Nigeria are enormous, which may include decrease in the nation's GDP due to labour loss and persons injured in road crashes who are no longer active in making meaningful contributions to the economic mainstream of the nation and their families because of the severity of the injuries sustained such as spinal cord injury, amputated legs and arms. Furthermore, statistics has it that out of the global total deaths recorded as a result of road traffic crashes, about 1.2 million deaths were from the low and middle-income countries (Nnabugwu, 2014) where Nigeria is situated. As Agbonkhese, Yisa, Agbonkhese, Akanbi, Aka and Mondigha (2013) pointed out, among the 193 countries in the world, Nigeria has been ranked second-highest in the rate of road crashes. WHO (2009) report also revealed that one out of four road crash deaths in Africa occur in Nigeria. Therefore, there is a strong likelihood that these consequences are associated with the relationship between alcohol consumption, road rage and road crashes.

Despite the efforts of the Federal Road Safety Corps (FRSC) since its establishment in 1988 to ensure safety of lives on Nigeria roads, the rate with which road traffic crashes occurs on service roads within the cities particularly among commercial tricycle riders have not been empirically investigated in the south-south Nigeria where it has become the most used means of road transport within the cities in about few decades ago. As a result of this, it is desirable that the relationship between alcohol consumption and road rage among commercial tricycle riders is examined in the region. This will help to mitigate the potentials for high rates of road traffic crashes among commercial tricycle riders in Nigeria at large.

2. Theoretical Framework

This study adopted expectancy theory as a theoretical framework. As proposed by Victor Vroom, it is used as theoretical basis for explaining motivation for doing something in given social phenomenon. It is also a framework that explains why an individual behaves or acts in a certain way due to the motivation that the action selected will yield the desired outcomes (Oliver, 1974). Within the purview of behavioural process, however, the theory proposes that individuals in a social setting choose one behavioural option over the other because they are motivated towards a particular goal which they believe to be positively correlated with their efforts and performance (rewards) that will satisfy an important need.

From the perspectives of Subba (2000) who contributed to expectancy theory, three components (expectancy {E}, instrumentality {I}, valence {V}) are important in explaining the rationales behind the selection of one element over the other by an actor. As further discussed:

- Expectancy (effort → performance {E→P}): Expectancy is the perception that individual's effort (E) will yield the desired performance (P) goals based on his/her experience, self-confidence and perceived difficulty of the performance goal (s) (Chiang, & Jang, 2008).
- Instrumentality (performance → outcome {P→O}): Instrumentality on the other hand, is the perception that an individual will achieve his/her rewards if all performances' expectations are met.
- Valence (V): Valence is the perception that the value placed on the rewards of an outcome by individuals will result to its value based on his/her needs, goals, and sources of motivation.

With respect to alcohol consumption, expectancy theory sees individuals consuming it with the expectation that it will deliver the effects of being 'high' or be more energetic than when it is not consumed in order to derive maximum satisfaction from the outcome expectations. Although Jones,

Corbin and Fromme (2001) argued that whether the outcome expectations are valid or validly derived is unimportant; the outcome expectations resulting from alcohol consumption would in one way or the other result to *direct* and *indirect* experience with alcohol paraphernalia.

Fromme and D'Amico (2000) viewed the theory of expectancy from the viewpoint of drinking behaviour. The duo further referred to it as a self-reported drinking behaviour that is significantly and positively associated with positive expectancies and inversely associated with negative expectancies. Putting it differently, while commercial tricycle riders are motivated to consume alcohol by its positive expectancies of stimulating them into 'action' to work more in order to increase their profits at servicing commuters within the cities, the negative expectancies that are not always taken into account may also result to the impairment of break reactions time, speed control as well as lane control thereby increasing the risks of being involved in road rage, which consequently lead to road traffic crashes.

3. Methods and Data

3.1 Study Design

This study adopted a cross-sectional survey design due to the fact that it was a study conducted at one point in time with minimum costs without compromising its evidenced-based and systematic procedures. However, since there was no accurate statistical database for commercial tricycle riders in Nigeria, the Conchran's (1977) sample size determination formula was used to arrive at the sample size.

3.2 Sampling Procedure

A sample of 360 subjects was selected using a structured questionnaire. A multi-stage sampling technique was used to sample respondents for the study. The first stage involved the purposive selection of south-south zone of Nigeria out of the six geo-political zones existing in the country due to the recent cancellation of the use of commercial motorcycle as means of shuttling in most states by the state governments and the adoption of commercial tricycles as means of transportation in the zone. Because of the homogeneity of the study population in the south-south states (Nigeria) as well as Bayelsa State being the most recent state that passed into law the use of commercial tricycles as means of commuting, the state was purposively selected among the six states existing in the zone as the second stage of the sampling procedure.
Since most commercial tricycle riders are more prevalent in the capital city (Yenagoa) of Bayelsa State, the city was purposively selected as the third stage of the sampling procedure. In the process of selecting the respondents for the study, the researchers divided the city into 28 clusters based on the major streets/bus stops where commercial tricycle riders await passengers. Thereafter, 15 major streets/bus stops were randomly selected ranging from Clifford Melford, Hospital Junction, Swali Market, Tombia Roundabout, Samphino Junction, Okaka Junction, Akenfa 1 & 2 Junction, Agudama-Epie Junction, Ebi Sam Road Akenfa, Opolo Roundabout, Nikton-Kpansia Junction, Azikoro Roundabout, Igbogene Junction, Bay Bridge Junction, and Gwegwe Junction.

However, after the selection of these clusters, a sample of 360 subjects were selected as the fourth stage of the sampling procedure where 24 commercial tricycle riders were randomly selected using a time cluster technique in each of the 15 randomly selected clusters where commercial tricycle riders queue to await passengers before take-off. The time cluster technique was adopted in order to administer the study instrument to the subjects simultaneously in each of the clusters with the aid of 15 research assistants, one for each cluster. This was adopted in order to achieve easy access to the respondents at minimum costs as well as avoiding the likelihood of double-response, while giving utmost attention to objectivity.

3.3 Measurement of variables

The dependent variable of this study is road rage. In this study, road rage is defined as an intention to damage other drivers' vehicles or attempt to injure passengers or other drivers' passengers, which have a significantly higher risk of becoming involved in road traffic accidents (Mann, Zhao, Stoduto, Adlaf, Smart, & Donovan, 2007). It was measured as a continuous variable achieved through the sum of the responses coded as "No" (meaning disagreed "0") or Yes (meaning agreed "1") such that respondents were asked whether they have or they have not: had quarrel with any passenger, had quarrel with other tricycle riders on the road, had quarrel with any car drivers, had quarrel with hawkers on the road or parks, had shouted at any of the road users (riders, drivers, pedestrians), had cursed any of the road users for any reason, and had threat of damage to any tricycle or car in the last 12 months respectively. These gave a total of seven (7), with road rage being

re-categorized into: (1) LOW ROAD RAGE = 0-2; (2) MEDIUM ROAD RAGE = 3-4; (3) HIGH ROAD RAGE = 5-7. The independent variables for the study are types of alcohol consumed (measured at nominal level), other stimulants consumed (nominal variable), and socio-demographic variables.

3.4 Methods of Data Analysis

The study adopted quantitative method of data analysis using Statistical Package for Social Sciences (SPSS v. 20). The data gathered from the structured questionnaire was analysed at bivariate and multivariate regression levels. At bivariate level, cross-tabulation was used to determine the likely association that existed between two variables whether they are statistically significant or not. At multivariate regression level, there were predictions of the effects of the independent variables on the dependent variables at significant levels of 0.01 and 0.05 using hierarchical multiple linear regressions.

MODEL 1 $= \beta_0 + \beta_1X_{1i} + \beta_2X_{2i} + \beta_3X_{3i} + \beta_4X_{4i} + \beta_5X_{5i} + \beta_6X_{6i} + \beta_7X_{7i} + \beta_8X_{8i} + \beta_9X_{9i.}$

MODEL 2 $= \beta_0 + \beta_1X_{1ii} + \beta_2X_{2ii} + \beta_3X_{3ii} + \beta_4X_{4ii} + \beta_5X_{5ii} + \beta_6X_{6ii} + \beta_7X_{7ii} + \beta_8X_{8ii} + \beta_9X_{9ii} + \beta_{10}X_{10ii} + \beta_{11}X_{11ii} + \beta_{12}X_{12ii} + \beta_{13}X_{13ii} + \beta_{14}X_{14ii} + \beta_{15}X_{15ii}.$

Where the variables included in ***MODEL 1*** are all demographic variables ranging from Gender + Age + Marital Status + Level of education + Ethnic group + Average income per month + Family type + Religion + Years of experience.

At ***MODEL 2,*** Gender + Age + Marital Status + Level of education + Ethnic group + Average income per month + Family type + Religion + Years of experience + Drink wine + Drink Beer, Stout, Goldberger, Gulder , etc. + Drink sprit (gin) + Drink *Ogogoro* (local gin) + Drink palm wine + Frequency of alcohol consumption in a week.

3.5 Ethical Considerations

The informed consents of the respondents were first sought verbally with the understanding that the study was meant to unveil the causes of road rage among commercial tricycle riders in the south-south zone. Respondents were also assured of their rights to participate in the study voluntarily and anonymously with utmost confidentiality without being coerced or induced. They were no form of intimidation or undue dehumanization for not participating in the study. In view of this, there were assurances communicated to them that their rights to withdraw, if not comfortable to continue with the study, are guaranteed.

4. Results/Findings

Socio-Demographic Variables of the Respondents

Table 1 shows the socio-demographic characteristics of the respondents. The table further revealed that all socio-demographic variables were found significantly associated with alcohol consumption at $p<0.01$ except for gender which was found not to be significant. The reason could be adduced to the fact that more than half of the respondents were males while only a few of them were female respondents. This suggests that there were more males in commercial tricycle riding in the zone when compared to those who were females.

The association of other demographic variables with alcohol consumption are also revealed in the table ranging from the age of the respondents with larger percentage of the age bracket 30-34 ever-consumed alcohol (39.9%), followed by age group 45-49 with 25.0% and age group 25-29 with 16.7% among others. The marital status of the respondents is also reported in the table, where most of the respondents were indicated ever-married (never-consumed alcohol 68.1%; ever-consumed alcohol 51.0%); while 31.9% of them (never-consumed alcohol) and 32.3% of them (ever-consumed alcohol) signifying that they were unmarried.

Table 1: Socio-demographic variables of respondents (*n=360)*

Demographic variables		Consumed Alcohol		X^2	DF	P-value
		No (Never-consumed alcohol)	Yes (Ever-consumed alcohol)			
Gender	Female	1 (10.0)	9 (90.0)	0.643	1	0.372
	Male	71 (20.3)	279 (79.7)			
Age	20-24	-	5 (1.7)			
	25-29	24 (33.3)	48 (16.7)			
	30-34	-	115 (39.9)	160	5	0.000**
	35-39	48 (66.7)	24 (8.3)			
	40-44	-	24 (8.3)			
	45-49	-	72 (25.0)			
Marital status	Single	23 (31.9)	93 (32.3)			
	Ever-married	49 (68.1)	147 (51.0)	15.065	2	0.001**
	Widowed/widower	-	48 (16.7)			
Education	No formal education	-	94 (32.6)			
	Primary	-	24 (8.3)			
	Secondary	71 (98.6)	95 (33.0)	100.68	4	0.000**
	Tertiary	-	69 (24.0)			
	Others	1 (1.4)	6 (2.1)			
Ethnic group	Ijaw	46 (63.9)	43 (14.9)			
	Ogbia	-	24 (8.3)			
	Akwa-Ibom	26 (36.1)	5 (1.7)			
	Isoko	-	24 (8.3)	194.886	6	0.000**
	Uhrobo	-	24 (8.3)			
	Hausa	-	120 (41.7)			
	Igbo	-	48 (16.7)			
Average	10000-19999	-	48 (16.7)			
Income	20000-29999	24 (33.3)	48 (16.7)			
	30000-39999	48 (66.7)	-	260	5	0.000**
	40000-49999	-	96 (33.3)			
	50000-59999	-	48 (16.7)			
	60000 and above	-	48 (16.7)			
Family type	Monogamy	48 (66.7)	168 (58.3)	1.667	1	0.123
	Polygamy	24 (33.3)	120 (41.7)			
Religion	Traditionalist	-	81 (28.1)			
	Christianity	72 (100.0)	159 (55.2)	50.26	2	0.000**
	Islam	-	48 (16.7)			
Experience	1-4 years	24 (33.3)	96 (33.3)			
	5-9 years	48 (66.7)	144 (50.0)	15	2	0.001**
	10 and above	-	48 (16.7)			

Significant at p≤ 0.01** DF= Degree of Freedom

In terms of the educational attainment of the respondents, majority of the respondents have attained secondary educational certificates (never-consumed alcohol 98.1%; ever-consumed alcohol 33.0%) when compared to those below or above secondary education. This implies that majority of the commercial tricycle riders in the zone are holders of secondary school certificates when compared to those of higher educational attainment. On the ethnic groups of the respondents, although Ijaw ethnic group constituted the highest percentage of respondents (never-consumed alcohol 68.1%; ever-consumed alcohol 14.9%); Hausa ethnic group seems to be the largest consumer of alcohol as indicted by 41.7% being consumers of alcohol when compared to all other ethnic groups. This is indicative that ethnic group membership is strongly associated with the magnitude and patterns of alcohol consumption in Nigeria.

Relative to the average income earned (in naira) on monthly basis by the respondents, there is significant association between average income and alcohol consumption among the study population. As the table revealed, higher percentage of the category of respondents that ever-consumed alcohol earned above 40000 as depicted by 33.3% of the respondents who earned an average income between 40000 – 49999, followed by those who earned between 50000 – 59999 (16.7%), 60000 and above (16.7%), as well as only 16.7% of those categories of respondents who earned between 10000 and 19999. This is suggestive that the higher the average income of respondents, the more he/she is likely to consume alcohol.

The family type of the respondents shows that majority practice monogamous family type (never-consumed alcohol 66.7%; ever-consumed 58.3%) when compared to those who signified polygamous family type (never-consumed alcohol 33.3%; ever-consumed alcohol 41.7%). In religious affiliation of the respondents, majority seems to be Christians (never-consumed alcohol 100.0%; ever-consumed alcohol 55.2%) when compared to other religious affiliations. This is by implication suggesting that Christianity dominates the domicile of our study. Finally, with the exploration of the years of experience of the respondents, it was shown that those who have experience of riding tricycle between 5- 9 years has the highest percentages both at never-consumed (66.7%) and ever-consumed alcohol (50.0%), followed by those who have experience of riding tricycle between 1 – 4 years (never-consumed alcohol 33.3%; ever-consumed alcohol 33.3%). This means that the number of years of riding tricycle and alcohol consumption is also significantly associated.

Patterns of alcohol consumption

Table 2 shows the various patterns to which respondents consumed alcohol substances. The reports reveal the types of alcohol drinks consumed, how frequently they were consumed in a week, consumption of other intoxicants, as well as how frequently they were consumed. These are indicated by gender, which also showed significant association between these variables at $p<0.05$.

Table 2: Distribution of respondents by types of alcohol consumed by commercial tricycle riders *(n=360)*

	Gender				
Alcohol consumption	**Female**	**Male**	X^2	***Df***	***P-value***
Types of alcohol drinks consumed					
Wine	8 (3.6)	214 (96.4)			
Beer, Stout, Goldberger, etc.	8 (3.2)	240 (96.8)			
Spirit (gin)	4 (3.0)	131 (97.0)	-	-	-
Ogogoro (local gin)	8 (6.2)	120 (93.8)			
Palm wine	5 (2.3)	211 (97.7)			
How frequent they are consumed in a week					
Once in week	-	24 (8.6)			
Twice in a week	8 (88.9)	112 (40.1)	8.602	3	0.035*
More than three times	1 (11.1)	119 (42.7)			
Others	-	24 (8.6)			
Consumption of intoxicants					
Marijuana (*Indian hemp*)	5 (6.2)	76 (93.8)			
Cannabis	1 (3.0)	32 (97.0)			
Cocaine	2 (3.3)	59 (96.7)			
Cigarettes	3 (2.9)	101 (97.1)			
Tobacco	4 (4.7)	81 (95.3)			
Others	2 (2.6)	76 (97.4)			
How frequent they are consumed in a week					
Once	1 (1.3)	78 (98.7)			
Twice	8 (6.2)	122 (93.8)	7.504	4	0.112
Three times	-	49 (100.0)			
Others	-	8 (100.0)			

Significant at $p\leq0.05$* DF= Degree of Freedom

However, when respondents were asked the types of alcohol drinks they consumed, the highest percentage of the respondents consumed palm wine (male 97.7%; female 2.3%), followed by those who consumed spirit (gin) (male 97.0%; female 6.2%), beer, stout Goldberger, etc. (male 96.8%; female 3.2%), wine (male 96.4%; female 3.6%), and *Ogogoro* (local gin) (male 93.8%; female 6.2%). On how frequent these drinks were consumed, it was revealed that the highest percentage of the respondents indicated that they were consumed more than three times in a week (male 42.7%; female 11.1%), followed by respondents who said twice in a week (male 112; female 8). This implies that although there was no significant association between patterns of alcohol consumption and gender; there seems to be more male respondents in the consumption of alcohol in the zone when compared to their female counterparts.

On the consumption of other intoxicants, the result shows similar patterns of consumption with that of alcohol drinks consumption. It very indicative that male respondents consumed other intoxicants more than doubled of their female counterparts ranging from marijuana (male 93.8%; female 6.2%), cannabis (male 97.0%; female 3.0%), cocaine (male 96.7%; female 3.3%), cigarettes (male 97.1%; female 2.9%), tobacco (male 95.3%; female 4.7%) and

others (male 97.4%; female 2.6%), which included tobacco snuffing. How frequently they were consumed still revealed that male respondents consumed these intoxicants more frequently than their female counterparts. These have implications on the subject of discourse (road rage) as its determinants.

Relationship between alcohol consumption and road rage

In a multiple regression analysis, table 3 shows the relationship between alcohol consumption and road rage, while controlling for the socio-demographic variables. Using a hierarchical multiple linear regression, there are significant relationships between all demographic variables and road rage except gender at MODEL 1 of the regression, which suggests that being a female or male does not have any relationship between road rage.

Table 3: Relationship between alcohol consumption and road rage *(n=360)*

	Regression 1	**Regression 2**
Predictor variables	**Coefficient B (Std. error)**	**Coefficient B (Std. error)**
(Constant)	3.904 (0.363)**	3.635 (0.394)**
Gender (Female "0", male "1")	-0.007 (0.088)	0.003 (0.086)
Age	0.125 (0.032)**	0.131 (0.048)**
Marital status	-0.586 (0.040)**	-0.565 (0.039)**
Highest level of education	-0.425 (0.027)**	-0.413 (0.027)**
Ethnic group	0.195 (0.009)**	0.185 (0.010)**
Average income per month	-0.092 (0.012)**	-0.077 (0.012)**
Family type	-0.330 (0.051)**	-0.235 (0.201)
Religion	0.292 (0.059)**	0.252 (0.065)**
Years of experience	-0.318 (0.056)**	-0.238 (0.107)*
Drink wine		-0.009 (0.035)
Drink Beer, Stout, Goldberger, Gulder		-0.053 (0.043)
Drink spirit (gin)		0.158 (0.036)**
Drink *Ogogoro* (Local gin)		0.116 (0.036)**
Drink palm wine		0.033 (0.033)
Frequency of alcohol consumption in a week		-0.018 (0.063)
R^2	0.896	0.908
F	(9, 278) = 265.0, p<0.05	(15, 272) =178.23, p<0.05

Significant at p≤0.01** p≤0.05*

Thus, while gender seems not to be related with road rage at MODEL 1 (Regression 1), age of commercial tricycle riders (OR=0.125), marital status (OR = -0.586), highest level of educational attainment of riders (OR=-0.425), riders' ethnic group membership (OR = 0.195), average income of riders per month (OR =-0.092), family type (OR =-0.330), religious affiliation of the riders (OR =0.292) and the years of experience of riders (OR =-0.318) were found significantly related with road rage.

At MODEL 2 (Regression 2) of the regression, while controlling for all demographic variables, gender and family type had no significant relationship with road rage, whereas age of the riders (OR =0.131), marital status (OR =-0.565), highest level of educational attainment (OR =-0.413), ethnic group membership of the riders (OR = 0.185), average income per month (OR =-0.077), religious affiliation of the riders (OR =0.252), and years of experience of the riders (OR =-0.238) were significantly related with road rage when alcohol drinks consumption were included in the model especially drinking of spirit (gin) (OR =0.158) and drinking of local gin popularly called *Ogogoro*. This suggests that even at the consumption of alcohol by the respondents, socio-demographic variables are equally important in determining the magnitude of road rage.

Effects of road rage among tricycle riders and other road users

Table 4 shows the effects of road rage among tricycle riders and other road users. The results are shown by ever-had an accident in the last 12 months that preceded this survey. However, when respondents were first asked whether they have ever-had quarrel with any passenger in the last 12 months, the result showed that those who had ever-had quarrel with any passenger were more vulnerable to traffic accidents (61.5%) compared to those who had not.

An examination of the effects of road rage and ever-had accident was considered with those who had ever-had quarrel with other tricycle riders on the road, the result simply indicated that 61.5% of those who have had quarrel with other tricycle riders are more prone to having accident than those who had not in the last 12 months that preceded the survey. In another view, those who ever-had quarrel with drivers on the road and ever-had accident was also examined, it was indicated that 53.3% of those who had had quarrel with other drivers on the road are more vulnerable to having accident when compared with those who had not.
Further examination of the effects of road rage especially among those who had ever-had quarrel with hawkers on the road in the last 12 months that preceded the survey and ever-had accident showed that higher percentage of those (100.0%) who were more predisposed to road rage are more vulnerable to having accident than those who did not (22.2%). This implies that the consumption of alcohol especially by commercial tricycle riders in the zone do not only result to road rage, but also influence the occurrence of road crash among riders and other road users.

Again, ever-shouted at somebody on the road and ever-had an accident was examined among respondents, it was revealed that 53.3% of those who have ever-shouted at somebody on the road had accident in the last 12 months. Similar trend is reported among those who had ever-cursed on the road and ever-had an accident in the last 12 months, the percentage (88.9%) of those who had ever-cursed and had an accident is significantly higher than those who did not.

Table 4: Effects of road rage among commercial tricycle riders and road users

Effects of road rage	**Ever-had an accident**		X^2	*P-value*
	No	**Yes**		
Ever-had quarrel with any passenger				
No	48 (100.0)	-	63.297	0.000**
Yes	120 (38.5)	192 (61.5)		
Ever-had quarrel with other tricycle rider				
No	48 (100.0)	-	63.297	0.000**
Yes	120 (38.5)	192 (61.5)		
Ever-had quarrel with drivers on the road				
No	96 (100.0)	-	149.61	0.000**
Yes	72 (27.3)	192 (53.3)		
Ever-had quarrel with hawkers on the road				
No	168 (77.8)	48 (22.2)	210	0.000**
Yes	-	144 (100.0)		
Ever-shouted at somebody on the road			-	-
No	-	-		-
Yes	168 (46.7)	192 (53.3)	-	-
Ever-cursed on the road				
No	144 (100.0)	-	274.286	0.000**
Yes	24 (11.1)	192 (88.9)		-
Ever-had threat to damage cars on the road				
No	144 (66.7)	72 (33.3)	86.786	0.000**
Yes	24 (16.7)	120 (83.3)		

Significant at p≤0.01**

Finally, those who had-ever threaten to damage cars on the road and ever-had an accident in the last 12 months was examined, 83.3% of those who ever-had threat to damage cars on the road had ever-had an accident in the last 12 months, which is significantly double of those who ever-had threat to damage cars on the road and had an accident. This suggests that those who are addicted to drinking alcohol especially spirit and *Ogogoro* are more vulnerable to having road rage and road crashes than those who did not.

5. Discussion of Findings

The focus of this study is to examine relationship between alcohol consumption and road rage among commercial tricycle riders. Previous research findings have shown that the prevalence rate of lifetime alcohol users was 33.3% (males) and 20.0% (females), among which 60.1% consumed palm wine, 20.8% consumed beer, and 14.7% consumed local fermented wine (Fatoye, & Morakinyo, 2002). Findings from this study have also shown similar patterns of alcohol consumption whereby 97.7% of the male respondents had the highest percentage that consumed palm wine, followed by those who consumed spirit (gin) (97.0%), beer, stout Goldberger, etc. (96.8%), wine (96.4%) and *Ogogoro* (local gin) (93.8%). Indeed, the female respondents had lower prevalence rates when compared to the male respondents as previous research had shown. In

addition to this, the study found out that other forms of intoxicants are consumed by the respondents as revealed by the male respondents who consumed other intoxicants more than doubled of their female counterparts ranging from marijuana (male 93.8%; female 6.2%), cannabis (male 97.0%; female 3.0%), cocaine (male 96.7%; female 3.3%), cigarettes (male 97.1%; female 2.9%), tobacco (male 95.3%; female 4.7%) and others (male 97.4%; female 2.6%), which included tobacco snuffing. This could be attributed to the fact that female commercial tricycle riders are few in numbers among the study population.

The findings from this study showed that there is significant relationship between alcohol consumption and road rage among commercial tricycle riders with spirit consumption having (OR=0.158) and *ogogoro* consumption with (OR=0.116). While these are found to be the outcome among riders, beer, palm wine and even the frequency of its consumption were not significantly related with road rage. The reasons for this outcome can be attributed to the high alcoholic content of spirit with 95% and *Ogogoro* as a clear liquid with 40% alcoholic content (Obot, 2000), in which its consumption at a very small quantity with lower price would intoxicate the users to a large extent when compared to beer drinks (Goldberger, Gulder and Stout) with alcoholic contents of between 4-6% and palm wine around 3-6% respectively (Gire, & Dimah, 2001). Of course, the consumption of small amount of beer products would cost the users more than spirit and *Ogogoro* before getting intoxicated. Therefore, there is strong likelihood that users of alcohol in this category would prefer the consumption of spirit and *ogogoro* to beer products because it is less expensive when compared to that of beer. This finding is found in tandem with Mann *et al.* (2004) and Fierro, Morales and Alvrez's (2011), who found that drinking and driving are significantly related to aggressive driving and road rage, and that is an association between drivers driving under the influence of alcohol and being perpetrators of road rage.

The literature has it that the involvement of drivers in alcohol consumption increased the likelihood of having road crashes, as well as road rage and error behaviours with increased risk of being involved in road crashes (Mir, Khan, Ahmed, & Razzak, 2012). Finding from this study is found in line with the previous studies that respondents who rode under the influence of alcohol drink in the last 12 months and had ever-had quarrel with passengers were more vulnerable to accident (61.5%) compared to those who had not; as well as those who had ever-had quarrel with other tricycle riders on the road (61.5%) being more vulnerable to having accident than those who had not in the last 12 months that preceded the survey. This also corroborates Fromme and D'Amico's (2000) contribution to expectancy theory of alcohol that self-reported drinking behaviour is significantly and positively associated with positive expectancies and inversely associated with negative expectancies.

Previous research has indicated loss of temper behind the wheel (Prakash, & Kansal, 2007), including shout, curse, rude gestures, threat to damage vehicles of other road users or personal injury by drivers under the influence of alcohol drinks (Smart, Mann, & Stoduto, 2003). The findings of this study showed similar trends by showing that respondents who ever-had quarrel with drivers on the road (53.3%) are at higher risk of having accident when compared with those who had not. Similarly, the effects of road rage especially among those who had ever-had quarrel with hawkers on the road in the last 12 months that preceded the survey revealed that those who drank alcohol in the last 12 months are at higher risk (100.0%) of being vulnerable to having accident than those who did not (22.2%).

Findings also showed that there is significant association between those who ever-shouted at somebody on the road and ever-had an accident (53.3%) and are more predisposed to having road crashes when compared to those who had not. It was also found that among those who had ever-cursed on the road and ever-had an accident in the last 12 months had higher percentage of risk (88.9%) than those who did not. The same effect was found among those who had-ever threatened to damage cars on the road and ever-had an accident in the last 12 months (83.3%), which significantly doubled those who ever-had threat to damage cars on the road and had an accident. These findings are found in consonant with Drummer *et al*. (2004) that alcohol use by drivers increases the risk of crash culpability since there is a relationship between drivers and intoxication, as well as being imbued with the potentials to developing impairment of break reactions time, speed control, steering responsiveness and lane control. These must have been the case for most respondents who used alcohol in the last 12 months that preceded this study.

6. Conclusion and Recommendations

This study has demonstrated that riding tricycle under the influence of alcohol is dangerous being that it predisposed the users to greater risk of road traffic crashes. Indeed, it increases the culpability of the occurrences of road crashes and injuries among other

negative effects it can expose the users to. This follows that all concerned authorities in the production, consumption and regulation of alcoholic drinks and other intoxicants such as National Drug Law Enforcement Agency (NDLEA), Federal Ministry of Health among other government agencies including the road union workers at all levels are required to come up with formidable policies towards curtailing the unbearable consequences of alcohol consumption especially by those who engage in commercial tricycle riding in the country. In view of this, it is recommended that every commercial tricycle rider should be encouraged not to drink or take any alcoholic substances before riding, otherwise take any but not to ride. The road union workers in collaboration with Federal Road Safety Corps (FRSC) and NDLEA should monitor the intake of alcohol drinks among riders/drivers at their various parks. This will reduce the risk of having road traffic crashes. As a matter of urgency, the sales of alcoholic drinks at parks/major streets and bus stops should be discouraged by the government in order that its abuse may be avoided by riders of commercial tricycle in Nigeria.

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