African Journal of Health Economics, December 2019, Volume 8 (2): 32-50

Print ISSN: 2006-4802; Online ISSN: 2504-86-86; Creative commons licenses/by/4.0/

Road transport workers willingness to quit psychoactive substances use in selected motor parks in Abeokuta, Ogun State, Nigeria.

Adekunle, C.P, Alarima, C. I, Akinbode, S. O, Oluwatusin, F.M

[1]Department of Agricultural Economics and Farm management, Federal University of Agriculture, P.M.B 2240, Abeokuta, Nigeria.
[2]Department of Agricultural Extension and Rural Development, Federal University of Agriculture, P.M.B 2240, Abeokuta, Nigeria.
[3]Department of Economics, Federal University of Agriculture, P.M.B 2240, Abeokuta, Nigeria.
[4]Department of Agricultural Economics and Extension, Ekiti State University, Ado-Ekiti, Nigeria

Corresponding author email: chiomaadekunle@gmail.com

Abstract

Background: Psychoactive substances particularly alcohol and tobacco are the important health hazards and known risk factors for non-communicable diseases especially among transport workers and are the leading cause of preventable death in Nigeria. The goal of this study was to assess the Willingness to Quit (WTQ) psychoactive substances (cigarette and alcohol) use among Road Transport Workers (RTWs). This study also highlight the factors influencing respondent's willingness to quit psychoactive substances.
Methods: A cross-sectional study was carried out among 232 RTWs in five selected major motor parks in Abeokuta. Data was collected by interview method using a pretested questionnaire. Contingent Valuation Method and Logit regression was used estimate the respondent's willingness to quit and its associated determinants.
Findings: About 43% of the respondents are willing to quit for the increase in price, while 48% were willing to quit cigarette consumption if 25% increment in prices were imposed. Over one-third of the smokers reported their willingness to quit. In the study, it was found that 43% of the respondents are willing to quit with a mean amount of ₦450.5 (US$1.2) per pack of cigarette and mean amount of ₦525.5 (US$1.4) per bottle of alcohol respectively.
Conclusion: The study conclude that previous attempts to quit were significantly associated with the willingness to quit smoking and drinking. This suggest non – tax policy measure of non-smoking/drinking environment with a view to seriously banning their use in public places especially in motor packs in order to achieve better psychoactive substances cessation outcomes.

Keyword: Willingness to quit, Psychoactive Substance, Contingent Valuation Method, Logit Regression.

Introduction

A psychoactive drug, psycho-pharmaceutical, or psychotropic drug is a chemical substance that changes brain function and results in alterations in perception, mood, consciousness, cognition, or behavior [1]. Based on their common effects, psychoactive substances can be classified as stimulants (nicotine present in tobacco, caffeine contained in coffee, cocaine, amphetamine, khat, etc.), depressants (alcohol, barbiturates, benzodiazepines, chloral hydrate, rohypnol, etc.), narcotics (heroin, morphine, codeine etc), hallucinogens (alpha-methyltryptamine, ketamine, phencyclidine, D-lysergic acid diethylamide etc), and cannabis (marijauna, hashish, hash oil etc) [2]. Psychoactive drugs that are used for recreational purposes include alcohol, tobacco, caffeine, cocaine, Lysergic Acid Diethylamide (LSD), and cannabis [3]. Psychoactive drugs are used not only to enhance pleasure but also to achieve social, religious, and ritualistic goals [4]. However, caffeine, tobacco, and alcohol are legally available while the rest are not legally available [3].

It is estimated that 1 in 20 adults, or a quarter of a billion people between the ages of 15 and 64 years, used at least one drug in 2014 according to 2016 world drug report [5]. Globally, over 29 million people suffer from drug use disorders, and of those, 12 million are people who inject drugs (PWID) of whom 14.0% are living with HIV [6]. The impact of drug use in terms of its health consequences continues to be devastating. The global disease burden attributed to alcohol and illicit drugs is estimated at 5.4% while 3.7% is attributed to tobacco use alone [6].

Makanjuola *et al.,* [7] pointed out that the use of psychoactive substances, especially alcohol, was really common among long distance vehicle drivers in Nigeria. However, Abiona *et al.* [8] revealed that all the respondents (commercial vehicle drivers) engaged in the use of commonly available alcoholic beverages in various motor parks. The sale of marijuana, cannabis and the likes go along side with the alcoholic beverages in various motor parks in Ogun State.

Substance use is very common among Nigerians which of course include the public vehicle drivers across the country. According to Iwerimie-Jaja [9] Nigerians are a substance/drug-using society. He further affirms that in the market are consciousness-altering substance such as marijuana, heroin and cocaine. The public safety in the excessive use of these drugs is that it can influence their users to commit crime and delinquency [9]. Moreover, it is a common thing to find people selling several kinds of substance ranging from alcohol, India hemp and the likes in public places particularly at motor parks across the country. This has created avenues for the commercial vehicle drivers and their assistants to patronize substance vendors at the parks and feel high at any time. With this observation, substance abuse is a common phenomenon among the commercial vehicle drivers in Nigeria especially Lagos State. Oluwadiya *et al.,* [10] stated that “paraga”, an alcoholic herbal preparation that comes in different varieties had been shown to be commonly available to commercial vehicle drivers in southern Nigeria.

Studies from different fields have shown a long-standing interest in studies related to the consumption of alcohol and tobacco for

two reasons. First, because of the social and health related challenges' associated with the abusive consumption of these two commodities, and secondly, because of the need to evaluate the impact of different tax schemes on these goods in promoting government revenues, improving general welfare and controlling consumption [4]. For instance, the Spanish government in September 2005 increased the tax rates on tobacco and alcoholic beverages once more, and is expecting increased revenues and reduction in consumption of these products. From this perspective, it is no wonder that the consumption of alcohol and tobacco are often considered as two related matters by policy-makers, health officials and social scientists.

Cigarette and alcohol policies in Nigeria face a dilemma. A large number of studies have shown that cigarette consumption and excessive alcohol consumption are very harmful to health [11]. Globally, tobacco use and the harmful consumption of alcohol have been identified as two important shared risk factors for 80% of diseases [11-12]. According to World Health Organization, [12], tobacco use is the second leading cause of death while the harmful use of alcohol is the third leading cause of morbidity. In many cases, there is a synergy between tobacco and alcohol use. Studies in high income countries have found that people who smoke are much more likely to drink, and vice versa [13]. Dependence on alcohol and tobacco may also be correlated; people who were dependent on alcohol were three times more likely than those in the general population to be smokers, and people who were dependent on tobacco were four times more likely than the general population to be dependent on alcohol [14].

The use of these psychoactive substances by vehicle drivers is a common occurrence globally [15-17]. This practice involves the use of virtually all substances known today. Concerns are growing over the incidence of road traffic accidents in drivers who drive under the influence of these substances, especially alcohol and cigarette as reported by WHO [18]. Although road crashes may have multiple interacting causal factors, some accident culpability and responsibility analysis had demonstrated that serum levels of substances use correlates positively with road traffic accidents [19]. Substance use could be a regular activity in a driver who then takes the substance while driving as is observed in day-to-day vehicle drivers [20-21] or it could be a routine behavior related to the occupation of driving [16]. Studies [22-26] have shown the use of substances by drivers and its association with road traffic accidents.

Prevalence of cigarette smoking and alcohol consumption among RTWs in Nigeria continues to increase despite the role that government is playing in controlling the consumption. Motor vehicle accident (MVA) is a significant cause of mortality and morbidity in Nigeria, and driving under the influence of alcohol and cigarette have been implicated in the occurrence of MVAs [27]. In Nigeria, majority of the RTW are self-employed and owners of the vehicles they drive, while some drivers make daily or weekly monetary delivery to the owners of the vehicle they drive and some are conductors. They face the highway on top speeds on a daily basis, sometimes making more than one trip on their usual route. In order to reduce or minimize this stress, some of the drivers believe that, the use of substances such as alcohol, cigarette, kola nut, marijuana, and other central nervous

system (CNS) agents such as amphetamines will significantly improve their performance and keep sleep at bay for as long as possible [28]. Some even use heavy episodic drinking as means of constructing social identity. These substances are also frequently taken for social reasons. Ability of these substances to affect the Central Nervous System (CNS) will impair driving performance, and a high possibility of contributing to the occurrence of motor vehicle accidents (MVAs).

Because of the high morbidity and mortality associated with regular cigarette and alcohol consumption and with involuntary exposures to environmental tobacco smoke, smoking represents a significant health risk to both smokers and nonsmokers and places a significant economic burden on modern health care systems and on society as a whole [16]. Providing support to quit smoking is one of the areas of intervention in the fight against tobacco established by the World Health Organization Framework Convention on Tobacco Control [19]. Raising cigarette and alcohol taxes is an important policy tool to reduce cigarette and alcohol use, as recommended in the WHO MPOWER strategy for tobacco control.

There is very strong evidence that higher tobacco taxes and prices lead to significant reductions in tobacco use. These reductions are larger in low- and middle-income countries than in high income countries Framework Convention of Tobacco Control [29]. It is estimated that a tripling of excise tax on tobacco in most low- and middle-income countries would double cigarette prices, reducing consumption by about 40% [30]. In China, home to one third of the global population of smokers and where smoking kills 1 million people a year – it has been estimated that raising tobacco taxes so that they account for 75% of retail cigarette prices (up from 40% of the share of price in 2010) would avert nearly 3.5 million deaths from cigarette smoking [31]. Total taxes on cigarettes rose from 32% to 52% of retail price between 1993 and 2009 in South Africa. This contributed to a halving of tobacco consumption from about four cigarettes per adult per day to two cigarettes per day over a decade [32] and a nine-fold increase in government tobacco tax revenues [31].

Higher taxes imply increases in the sale price of cigarette and alcohol, which in turn reduces the demand for the goods, following the well-established economic relationship between price and demand for consumer goods. Price increases contribute significantly towards reducing consumption, increasing the number of attempts to quit, promoting cessation, and preventing initiation [33-34].

The Nigerian government is trying to adopt policies of Taxes (tariffs) recommended as a tool to reduce alcohol and cigarette consumption. It is widely often recommended that taxes are tools used to reduce alcohol and cigarette consumption. Tauchmann *et al.,* [35], posited that a reduction in tobacco consumption results in a moderate reduction in alcohol consumption. Theoretically, this implies that alcohol and tobacco are complements. Hence, increase in the price of either alcohol or cigarette will therefore reduce the consumption of both. In fact, there is strong empirical evidence that smoking and drinking are not independent activities [36-39]. Therefore, taxing one will reduce the consumption of both and thus, achieve a double public health dividend. However, if

they are substitutes, taxing one will induce consumers to increase consumption of the other, offsetting the public health benefits of the tax.

The Nigerian government has approved an amendment to the excise duty rates for alcoholic beverages and tobacco with effect from June 4, 2018 and the new e6cise duty rates were spread over a three-year period from 2018 to 2020 in order to moderate the impact on prices of the products. The Federal government stated that the upward review of the excise duty rates for alcoholic beverages and tobacco was to achieve a dual benefit of raising the government's fiscal revenues and reducing the health hazards associated with tobacco-related diseases and alcohol abuse.

The contingent valuation method was developed as a method of eliciting WTP. This method was originally used for measuring the benefits of pure public goods and services without markets. In these circumstances, the WTP methodology was used to identify the monetary value that individuals attributed to certain goods and services to approximate the level of demand for those services. Initially used by environmental economists to value public goods and thus to define property rights, this technique has more recently been adopted by health economists to conduct prospective evaluations of health interventions and medical technologies. Interestingly, very few studies on cigarette smoking and alcohol cessation have used the WTP methodology in their estimations.

Ross [40] demonstrated the feasibility of using this technique to value a hypothetical studied of the impact of cigarette prices on young smokers' behaviour by presenting hypothetical price increases ranging from US$0.50 to US$4.00 per pack. The expected behavioural response was stronger with higher increase. More recently, Ross *et al.,* [41] observed consistent results among adult smokers in the ITC Four Country Survey data. Smokers were asked how they would respond to a 50% increase in cigarette price. The percentage of smokers who would try to quit ranged from 58% in the UK to 73% in Canada. Guillaumier *et al.,* [42] also obtained the price to quit among Australian socioeconomically disadvantaged smokers, finding that half of smokers would try to quit at a 20% increase in price. Among those who would not try to quit at such increase of price, the median of the price needed to quit was about 150% of the usual price. It is usually desirable to combine diverse policies to reduce smoking prevalence, in addition to raising tax.

Smokers may respond to cigarette price increases in a number of ways. Firstly, they may quit smoking, which is the primary aim of the strategy. This response is evident in reduced prevalence rates [43-44], as well as in increases in quit attempts, quit intentions and motivation to quit following price increases (45, 40]. Increases in tobacco excise taxes that increase product prices can effectively demonstrate a reduction in overall tobacco consumption and prevalence of use by promoting cessation, preventing initiation and lowering consumption [43]. Findings from the International Tobacco Control Four-Country Survey (ITC-4) suggest that smokers living in areas with higher cigarette prices and taxes are significantly more motivated to quit [40] and are also more likely to report quit intentions in response to hypothetical price increases [46].

Non-tax policies are expected to enhance the effects of tax increase, based on an

assumption that smokers exposed to non-tax policies would be motivated to quit at a lower price level. However, to our knowledge, no previous studies in Nigeria have comprehensively evaluated predictors of the willingness to quit smoking and drinking among RTWs in the Nigeria. Identifying these factors in specific cultural and socioeconomic settings is vital to developing appropriate intervention programs. Studies conducted in different countries have reported age, marital status, income, addiction level, past attempts to quit, social pressure, number of smoker friends, smoking status of family members, and antismoking media messages as significant predictors of the willingness to quit cigarette smoking and alcohol drinking.

Because the prevalence of smoking and drinking in Nigeria are seen more among transport workers either motor pack worker or commercial motorcyclists (*Okada riders*) and there is an exponential rise in smoking and drinking behaviour, the objective of this study was to estimate the Willingness to Quit (WTQ) Psychoactive substances use especially cigarette and alcohol using hypothetical 25% cigarette pack and alcohol bottle price rises. Specifically, the study attempted to (i) assess self-reported reactions to hypothetical price rises, as measured by Contingent Valuation Method (CVM), intention to quit and intention to make no changes to smoking/drinking behaviour and (ii) identify socioeconomic and smoking/drinking behavior characteristics among smokers/drinkers in response to hypothetical price rises. Generally, the WTQ was aimed at obtaining what increase in cigarette price per pack and price increase in per bottle of alcohol that would make RTWs try to quit ('price to quit'). Furthermore, attempts were made to identify non-tax policies and socioeconomic factors affecting WTQ.

Methods

This study was conducted in Abeokuta the largest and capital city of Ogun state in southwest Nigeria. As of 2006, Abeokuta and the surrounding area had a population of 449,088. It is located between latitude 7°9'39"N and 7.16083°N and Longitude 3°20'54"E and 3.34833OE. The respondents for the present study were the commercial intercity vehicle drivers in the five major motor parks in the city namely Kuto, Lafenwa, Ijaye, Asero and Panseke. Permission was obtained from the transport unions (National Union of Road Transport Workers (NURTW) and Road Transport Employers Association of Nigeria (RTEAN) of each of the selected motor park. Multistage sampling technique was used for this study. The first stage involves random selection of five (5) major motor parks in the study area. Second stage involved random selection of sixty (60) RTWs in each of the selected motor parks targeting a total of 300 RTW. However, out of a total of 300 drivers, 232 consenting drivers participated in the study. Informed consent was also obtained from each of the transport workers. Structured interview guide was administered at the motor parks to obtain information about socioeconomic characteristics as well as alcohol consumption and cigarette smoking.

WTQ (smoking and drinking cessation) were defined by answering "Yes" to the question: "Have you ever tried to quit smoking or drinking? The number of smoked cigarettes per week and the purchased cigarette price per pack of 20 cigarettes was self-reported. Also, the number of bottle of consumed alcohol per week and the purchased alcohol

price per bottle was self-reported. These were to ascertained cigarette and alcohol consumption.

A payment scale format was used for this study, and respondents were shown a list of prefixed and ordered values from which they were asked to choose their answers. Using this format, the WTQ was explored in an innovative way: as the questionnaire progressed, the questions were gradually preceded by additional information about the potential benefits of the WTQ with a view to reducing the MVAs and risk acquiring a drinking/smoking-related and to assess incrementally whether a respondent's WTQ value would change with the introduction of additional information. This was applied only to those who had expressed a willingness to quit.

To elicit consumers' WTQ the study applied contingent valuation method (CVM), which helps to find out how much an individual would be willing to pay by using hypothetical survey questions. Double bounded dichotomous choice contingent valuation method (DBDC-CVM) was used for this study because it has more efficiency as well as more information than single bounded approach [47].

In this study, designing hypothetical prices (bid amoint) to apply double bound dichotomous bid was based on the questionnaire pretest and the prices of cigarette and alcohol in the markets (₦ 350($0.96)/bottle and ₦250($0.68)/packs for alcohol and cigarette respectively). Bidding system was used in Table 1. Each RTW was asked for answering one of four random bids set below to minimize the bias of starting bids.

Using double bounded approach, respondents were asked two questions. Two questions were used from the survey: "How much of a cigarette price increase would it take to make you try to quit smoking or drinking?" "Would that be an increase in the cost per pack or per single cigarette and per bottle?" The study included the following clarification to avoid respondents' confusion: "the study does not want to know how much the difference in price would be, not how much the higher price would be." Question format was "Are you willing to quit consumption of alcohol and cigarette in public places during your work hours. Each question has two choices: yes or no. If saying "yes" in the first question, higher amount of bid will be given in the second question; otherwise, lower amount with saying "no". Therefore, one of four abilities of a respondent can be: 1. Yes–Yes (YY), 2. Yes–No (YN), 3. No–Yes (NY), 4. No–No (NN).

In order to elicit WTQ, standard double bounded model Hanemann *et al.,* [47] was used. Therefore, WTQ is generally expressed by function:

$$WTQ_{ij} = \alpha + \beta Bid_{ij} + \lambda Z_i + \varepsilon_{it} \quad (1)$$

Where:
α = intercept of the model
Bid = proposed price (hypothetical price) given to respondents
B = the coefficient of Bid
Z_i = the vector of socioeconomic variables of consumer ith and the non-tax policy variables
λ = the coefficients of Zi
i = individual consumer (ith)
j = kind of substances abuse (cigarette/ alcohol)

Results

Socio-economic Characteristics, Pattern of Alcohol and Cigarette consumption among Respondents.

Result of the socioeconomic characteristics (Table 1) show that all the respondents were male and aged between 25 and 45 years with mean age of 38years. Most of them were married (85.34%) and had primary education or less (74.1%). However, 59.48% had been engaged in road transport work for 5 – 10 years. Table 2 shows that majority (72.4%) of the respondents currently consumed both alcohol and cigarette with 24.14% and 53.5% of these having their first initiation at less than 18 years. Eleven to twelve bottle of alcohol was consumed by 66.38% of the respondent and 1 to 40 sticks of cigarette was consumed by 53.45% of the respondent in the 7 days memory recall. Smoking stage was defined using Lloyd-Richardson [48] definition. It classified smoking stage on the basis of smoking frequency and present smoking status; Never smokers (2.6%) were defined as those adolescents who denied ever trying a puff or two of cigarettes; experimental smokers (18.1%) were defined as those who endorsed trying cigarettes, although denied smoking within the past week or ever smoking regularly i.e. intermittent smokers (23.3%) were defined as those who reported smoking between 1 and 10 sticks per week; addictive smokers (53.0%) were defined as those who reported smoking on a daily basis within the past week. The most common patterns of alcohol use in this study are binge drinker (76.7%) and social drinker (23.3%). Binge drinking is a pattern of alcohol use where people episodically drink excessively. Social drinkers are those who only drink occasionally and rarely go above the recommended levels. Weeks may go by without them even thinking about alcohol if they are advised to stop for health reasons they will have no problem doing so.

Willingness to Quit Psychoactive Substance Use

Table 4 indicates that about 43% of the respondents are willing to quit for the increase in price, while 48% were willing to quit cigarette consumption if 25% increment in prices were imposed. Findings from the International Tobacco Control Four-Country Survey (ITC-4) suggested that smokers living in areas with higher cigarette prices and taxes are significantly more motivated to quit and are also more likely to report quit intentions in response to hypothetical price increases [46]. Kim and Lee [49] stated that in the cohort study of 700 Korean male adults conducted from 2004 to 2005, 11.0% of smokers stopped smoking and 22.2% of smokers reduced smoking in 6 months after the price increase. However, Kim [50] found that price increase influenced the decision of 26.5% adolescent to quit and 38.2% willing to reduce smoking. The respondents were later asked to respond to the double-bounded dichotomous choice questions with two bid prices: a starting bid and a follow-up bid.

Distribution of the Double-Bounded Willingness to Quit Psychoactive Substance Use Responses

Table 5 presents the distribution of the double-bounded WTQ responses for each of the substance. In terms of the different structure of bid prices, the proportions of respondents were distributed equally to the bid structure of versions A, B, C and D respectively. The bid designs in table 4 captured the WTQ ranges quite well. The proportion of the respondents who wereWTQ

Table 1: Respondents' Socio-economic Characteristics,

Characteristics	Frequency	Percentage
Age (years)		
18 - 25	67	28.88
25-45	98	42.24
46 and above	45	19.40
Education		
None	66	28.44
Primary	106	45.69
Secondary	44	18.97
Tertiary	16	6.70
Marital Status		
Single	34	14.66
Married	198	85.34
Years of work experience		
>5	43	5.60
5-10	138	59.48
11-15	28	12.09
15+	23	9.91
Religion		
Muslim	164	70.69
Christian	53	22.84
Traditionalist	15	4.47

decreases as the bid increases in price. This is confirmed by the fact that the lower starting bid price was more likely to generate a "Yes/Yes" response and more likely to produce a "No/No" response. Ross [40] and Ross [46] suggested that the magnitude of a price increase is the most important predictor of quit intentions. Guillaumier *et al.,* [42] posited that larger hypothetical price increases resulted in significantly fewer smokers choosing to make no change and more endorsing quit attempts evident from cross-sectional survey of Australian socioeconomically disadvantaged smokers. In this study, larger cigarette and alcohol bid price rises motivated more smokers/drinkers to consider quitting, while price-resistant smokers appeared to have a more entrenched smoker status. Price increases large enough to see a pack of cigarettes in Nigeria cost ₦450.5 (US$1.2) would prompt over 36% of smokers to quit while price increases large enough of a bottle of alcohol in Nigeria cost ₦525.5 (US$1.4) would also prompt 41% of drinkers to quit.

Mean/median Willingness to Quit Psychoactive Substance Use

The mean and median WTQ were calculated using the estimated parameters from the constant-only bid function, which restricts all the exploratory variables except the bid variable. Thus, the parameter estimates are contained in the constant (intercept) and bid variable in the model. In order to select the appropriate probability distribution with the WTQ data, which is one with the best goodness of fit to the sample data, the value of the restricted model of log-likelihood

Table 2: Pattern of alcohol and cigarette use among respondents

Characteristics	Frequency	%
Pattern of Abuse		
Concurrent (Alcohol & Cigarette)	168	72.4
Alcohol only	34	14.7
Cigarette only	30	12.9
Number of Alcohol bottle consumed per week		
10 and below	52	22.4
11 -20	154	66.4
21 - 30	22	9.5
31 and above	4	0.4
Non-tax policies		
Warning labels	93	40.1
Anti-smoking Information	87	37.5
Non-smoking/drinking environment	52	22.4
Self-rated health status		
Good	176	76.5
Bad	56	23.1
Awareness of cigarette warning labels	154	66.4
Smoking status		
Never smoker	6	2.6
Experimental smoker	42	18.1
Intermittent smoker	61	23.3
Addictive smoker	123	53.0
Time of substance use		
Before driving	188	81.0
After driving	21	9.1
Anything	23	9.9
Average age of drinking initiation (year)		
Less than 18	56	24.1
More than 18	176	75.9
Attempted alcohol and cigarette cessations	145	62.5
Level of drinking		
Within reference limits of 14 units of alcohol per week	78	33.6
Above reference limits	154	66.3
Number of cigarette sticks consumed per week		
1-20	78	33.6
21-40	46	19.8
41-60	53	22.8
61 and above	55	24.7
Age at smoking initiation (year)		
Less than 18	99	42.7
More than 18	133	57.3
Types of alcoholic beverages consumed		
Wine	18	7.8
Beer	146	62.9
Spirit (Brandy/Gin)	68	29.3
Pattern of Alcohol use		
Binge Drinker	178	76.7
Social Drinker	54	23.3

Source: Field Survey, 2018

function, leaving only the constant and bid terms, was employed [47].

The result of the mean/median WTQ in Table 6 shows that consumers were willing to quit with a mean amount of ₦450.5 (US$1.2) per pack of cigarette and mean amount of ₦525.5 (US$1.4) per bottle of alcohol respectively. This means that consumers would be willing to quit cigarette smoking and alcohol drinking with higher cigarette price per pack of 20 sticks which is approximate 80% increment and alcohol price per bottle approximate of 55% increment. Mean price to quit cigarette was higher than alcohol reflecting the level of addiction of the two psychoactive active with cigarette having a higher level than alcohol. Hence, the stronger the level of addiction, the less likelihood the RTWs are willing to quit, given the hypothetical price increase. Ross [40] and Ross [41] stated that the magnitude of a price increase is the most important predictor of quit intentions.

Determinants of Willingness to Quit Psychoactive Substance Use

Table 7 revealed the results of the logit regression model. The results show that the bid price, age, initiation age, marital status, perceived health status, level of addiction, ever attempt to quit, perceived exposures to non-tax policies especially anti-smoking and anti-drinking information were related to WTQ cigarette and alcohol use among RTWs.

Discussion

This study found all RTWs drivers to be males. A similar report had been documented by studies done among long distance commercial vehicle drivers in Nigeria [7,20,51]. Empirical evidence further shows that RTWs in Nigeria are essentially dominated by males. The mean age (38years) of the RTWs in this study was close to the findings from other studies [8, 20, 52]. This is a reflection of the age characteristics of commercial vehicle drivers in general. To be a RTW, it is must for one to meet some conditions which include a minimum age of 18 years. This may partly account for why young people in their second to third decade of life being the majority of those involved in Road Transport Work. Most of the subjects were married and had no formal or primary education. This finding is similar to studies done in other parts of this country [7, 51]. The prevalence of psychoactive substance use in this study is 72.4%.

Mean price to quit cigarette was higher than alcohol reflecting the level of addiction of the two psychoactive active with cigarette having a higher level than alcohol. Hence, the stronger the level of addiction, the less likelihood the RTWs are willing to quit, given the hypothetical price increase. The bid price was positive and this is in conformity with the a-priori expectation. The implication of this is that as the bid price increases, the respondents' willingness to quit increases. The higher purchased cigarette and alcohol price were related to a higher price to quit. In response to 10% and 20% hypothetical price rises, Guillaumier [42] found a significantly more participants endorsed trying to quit in response to the larger increase scenario ($P<0.001$), and fewer selected no change to their smoking ($P<0.001$).

Table 3. Bid System for alcohol and cigarette

Variables	Conventional prices (₦/pack/bottle)	First bid (₦/Bottle/pack) (25% increment)	Second bid (₦/Bundle)	
			Higher amount (75% increment)	Lower amount (50% increment)
Alcohol	350	437.5	700.0	525.0
Cigarette	250	312.5	500.0	375.0

Source: Field Survey, 2018

Table 4. Distribution of WTQ response of Consumers

Variable	Alcohol		Cigarette	
	Frequency	Percent	Frequency	Percent
Yes	99	42.67	112	48.28
No	133	57.33	120	51.72
Total	232	100	232	100

Source: Field Survey, 2018

Table 5. Double-Bounded WTQ Responses Distribution

Type of Substance	Percentage of Respondents				
	Yes– Yes	Yes–No	No–Yes	No–No	Total
Alcohol	15.52.%	28.88%	36.21%	19.40%	100%
Cigarette	9.480%	23.14%	41.38%	25.00%	100%

Source: Field Survey, 2018

Note: "Yes/Yes" indicates Yes and Yes response in the first and second bid, respectively.
"Yes/No" indicates Yes and No response in the first and second bid, respectively.
"No/No" indicates No and No response in the first and second bid, respectively.
"No/Yes" indicates No and Yes response in the first and second bid, respectively.

Table 6. Mean Bid Price of WTQ (₦)

	Alcohol			Cigarette		
Measures	WTP	Lower Bound	Upper Bound	WTP	Lower Bound	Upper Bound
Mean	525.5	375.7	655.5	450.5	255.2	575.5
Medium	502.0	330.5	625.0	415.0	225.5	550.7

Source: Field Survey, 2018

Age is a positive significant predictor of the willingness to quit smoking and drinking according to the result. This implies that older RTWs are more willing to quit than their younger counterpart. Osler and Prescott [53] found that older smokers may have higher cessation rates because they are more likely to experience health problems, which make the risks associated with smoking more apparent, and health problems were often reported as a reason for stopping smoking. Kaleta *et al.,* [54] found that in men adult tobacco Poland survey, the long-term quit rates increased with age. The quit rates were highest among the male subjects of 60 years of age or older compared to those aged 25–29 years. Also, age at first initiation was found to be significantly negatively associated with willingness to quit. It is important to note RTWs whose age at first initiation is above 18years of alcohol drinking are more willing to quit than those who were initiated earlier in life. Besides, RTWs who are married and have attempt quitting were willing to quit than their counterpart. This study found that education level seems not to be associated with willingness to quit cigarette smoking and alcohol consumption. Similar result was found in Georgiadou *et al.,* [55]. However, this is inconsistent with the findings of Kaleta *et al.,* [54] and Marti [56]. This difference may be attributed to different research. RTWs who perceived that their health status is poor are willing to quit. Also, the level of cigarette smoking and alcohol drinking addiction is negatively related to WTQ. This implies that nicotine dependent smokers have more difficulty quitting and are therefore less likely to quit successfully than non-dependent smokers. Breslau *et al.* [57], found that smokers with nicotine dependence was 40% less likely to quit than smokers who were not dependent. Marquese-Valdez *et al*. [58], stated that difficulty to quit increased with increasing nicotine dependence and the number of previous quitting attempts. The presence of a smoking family member has been reported to decrease the willingness to quit alcohol drinking. Kardia *et al.,* [59] stated that partner's support can help to combat anxiety and stress generated during the effort to quit smoking, and that the partner's opposition to smoking is a factor that acts positively towards quitting. The non –tax policy of non-drinking environment effect of WTQ was positively significant implying that RTWs who are aware of this non –tax policy of non-drinking environment was more willing to quit than their unaware counterpart.

Conclusion

Following the results of the analysis above, this study concludes that previous attempts to quit were significantly associated with the willingness to quit smoking and drinking. These findings suggest the necessity of identifying past unsuccessful strategies, re-evaluating smoking prevention programs, and focusing more on non –tax policy of non-smoking/drinking environment with a view to seriously ban psychoactive substance use in public places especially in motor parks with a view to achieving better psychoactive substances cessation outcomes. Also, it is recommended that enlightening programs should be developed for RTWs to assist them in their quest to quit smoking and maintain cessation.

Table 7. Estimated Double Bounded Logit Model for Determinants of WTQ

Cigarette (Model 1)			Alcohol (Model 2)		
Variables	**Coefficient**	**SE**	**Variables**	**Coefficient**	**SE**
Bid Price (₦)	.052**	.022	Bid Price (₦)	.087***	.033
Age (years)	.630**	.312	Age (years)	.849*	.434
Age at first initiation (≤18years=1, ≥18years=0)	-.832***	.274	Age at first initiation(≤18years=1, ≥18years=0)	-.494***	.183
Marital status (married=1, 0=single)	.776*	.435	Marital status (married=1, 0=single)	.327**	.158
Perceived Health status (Good =1, Poor=0)	-.119*	.039	Perceived Health status (Good =1, Poor=0)	-.502*	.296
Ever attempting quitting (Yes=1, No=0)	.776*	.437	Ever attempting quitting (Yes=1, No=0)	.496*	.276
Level of Education (years)	-.175	.349	Level of Education (years)	-.179	.299
Status of addiction (addictive =1, non-addictive)	-.496*	.276	Status of addiction (binge drinker =1, social drinker =0)	-.724**	.324
Monthly Income (₦/month)	.124	.324	Monthly Income (₦/month)	-.318	.288
Warning labels (Yes=1, No=0)	-.096	.353	Warning labels (Yes=1, No=0)	.011	.334
Non-smoking environment (Yes=1, No=0)	-.496*	.276	Non-drinking environment (Yes=1, No=0)	.357***	.096
Noticing anti-smoking advertising or information (Yes=1, No=0)	-.143	.318	Noticing anti-drinking advertising or information (Yes=1, No=0)	.324	.241
Smoking status of family members (Yes=1, No=0)	.257	.198	Drinking status of family members (Yes=1, No=0)	-.608*	.321
Constant	2.145	2.084	Constant	2.535	8.265
Number of Observation	232			232	
Log likelihood	206.12			188.75	
Wald χ^2	102.56***			87.23***	

Source: Field Survey, 2018

Author Contributions: This work was carried out in collaboration between all authors. Author CPA is the corresponding author who conducted the research with authors CIA, SOA and FMO. Author CPA, CIA, and SOA collected the data and drew up the econometric models while authors CPA and SOA did the necessary statistical analysis. FMO drew up the conceptual framework. Authors CIA, SOA, and FMO assisted in literature review and several editing done on this work. All the authors read and approved the manuscript.

Conflict of interest: None declared
Funding: None
Acknowledgement: My sincere gratitude goes to the officials and the entire members of the National Union of Road Transport Workers, Abeokuta, Ogun State chapter for their cooperation and assistance during the period of data collection.

References

1. Alcohol and Other Drugs". The Public Health Bush Book: Facts & approaches to three key public health issues. ISBN 0-7245-3361-3. Chapter 1. Archived from the original on 2015-03-28.
2. World Health Organisation (WHO) Terminology and classification of psychoactive substances. 2015.
3. World Health Organization. Neuroscience of Psychoactive Substance Use and Dependence. 2007
4. McArdle P. Substance abuse by children and young people. Archives of Disease in Childhood. 2004; 89(8):701–704.
5. United Nations office on drugs and crime (2016) World Drug Report 2016.
6. World Health Organisation (2010) Atlas on substance use, resources for the prevention and treatment of substance use disorders. World Health Organization, Geneva, Switzerland.
7. Makanjuola BA, Oyeleke SA, Akande TM. Psychoactive substance use among long distance vehicle drivers in Ilorin. Nigerian Journal of Psychiatry. 2007, 5:14–18.
8. Abiona TC, Aloba OO, Fatoye FO. Pattern of alcohol consumption among commercial road transport workers in a semi-urban community in South Western Nigeria. East African Medical Journal. 2006, 83(9):494– 499.
9. Iwarimie-Jaja D. Criminology: The criminology's eye in reoccurring crime problems in Nigeria. 2013.
10. Oluwadiya SK, Faraoye FO. Taking alcohol by deception II: Paraga (alcoholic herbal mixture) use among commercial motor drivers in a South-Western Nigeria City. BMC Research Note. 2012, 5:301.
11. Manrique M, Jensen J. Consumption of Tobacco and Alcoholic Beverages among Spanish Consumers. Iowa State University Digital Repository Economics Publication *2004.*
12. World Health Organization. Global status report on non-communicable diseases. 2010. Available at www.who.int/nmh/publications/ncd_report_full_en.pdf. Accessed August 2012.
13. World Health Organization. From burden to best buys: Reducing the

impact of non-communicable diseases in low and middle-income countries. Available at www. w h o. i n t / n m h / p u b l i c a t i o n s / best_buys_summary.pdf. Accessed August 2012.

14. Bobo Jk, Husten C. Socio-cultural influences on smoking and drinking. Alcohol Research and Health 2000; 24(4):225–232.
15. Grant BF, Hasin DS, Chou SP, Stinson FS, Dawson DA. Nicotine dependence and psychiatric disorders in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. Archives of General Psychiatry 2004; 61:1107–1115.
16. Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. Format: Abstract PLoS Med. 2006, 3(11):e442.
17. Jürgen R, Benjamin T, Robin R. Global burden of disease from alcohol, illicit drugs and tobacco, Drug and Alcohol Review, 2006, 25(6):503-513, DOI: 10.1080/09595230600944453
18. Olaniyi DT, Substance abuse and criminal behaviours among commercial vehicle drivers in Lagos state, Forensic Research & Criminology International Journal. 2020, 8(1):42-50
19. World Health Organization MPOWER. A policy package to reverse the tobacco epidemic. 2008. FCTC. Parties to the WHO Framework Convention on Tobacco Control. Secondary Parties to the WHO Framework Convention on Tobacco Control. http://www.who. int/fctc/signatories_parties/en/
20. Okpataku CI. Sociodemographic correlates of substance use among long distance commercial vehicle drivers. Journal of Medicine in the Tropics 2016, 18:1:6-11
21. U.S. Department of Health and Human Services. The health consequences of smoking: a report of the surgeon general. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health 2004; 1-23.
22. Adenekan AK, Osigbogun A. Drug use and road traffic accident in Sagamu, Ogun State. Journal of Community Medicine and Primary Health Care, 1999, 11: 36-47.
23. Lowenstein SR, Koziol-McLain J. Drugs and Traffic Crash Responsibility: A Study of Injured Motorists in Colorado. Journal of Trauma- Injury, Infection, and Critical Care, 2000, 50(2):313-320.
24. Drummer OH, Gerostamoulus J, Batziris H, Chu M, Caplehorn J, Robertson MD. The involvement of drugs in drivers of motor vehicles killed in Australia road traffic crashes. Accident Analysis and Prevention, 2004, 36(2):239-248.
25. Movig KL, Mathijssen MP, Nagel PH, van Egmond T, De Gier JJ, Leufkens HG. Psychoactive substance use and the risk of motor vehicle accidents. Accident Analysis and Prevention, 2004, 36(4), 631-636.
26. Mir MU, Khan I, Ahmed B, Abdul Razzak J. Alcohol and marijuana use

while driving-an unexpected crash risk in Pakistani commercial drivers: a cross-sectional survey. BMC Public Health, 2012, 12:145.
27. Adekoya BJ, Adekoya AO, Adepoju FG. Driving under influence among long distance commercial drivers in Ilorin, Nigeria. International Journal of Biological & Medical Research. 2011, 2(4):870–873.
28. Khurshid AK. Relationship between sleep disturbances and addiction. Mental Health and Addiction Research. 2018, 3(3): 1-4
29. World Health Organization Parties to the WHO Framework Convention on Tobacco Control. 2015. [(accessed on 29 July 2015)]. Available online: http://www.who.int/fctc/signatories_parties/en/
30. Jha P. Deaths and taxes: stronger global tobacco control by 2025. Lancet. 2015; 385:966–976.
31. World Health Organization. Report on the global tobacco epidemic, 2015: Raising taxes on tobacco. Geneva: World Health Organization; 2015
32. Van Walbeek C. Tobacco control in South Africa. International Journal of Health Promotion and Education. 2015; 4:25–28.
33. World Health Organization Framework Convention on Tobacco Control, Updated reprint 2004. Geneva, Switzerland: WHO Press; 2004
34. Chaloupka FJ, Yurekli, A, Fong, GT. Tobacco taxes as a tobacco control strategy. Tobacco Control. 2012; 21(2):172–180.
35. Tauchmann H, Gohlmann S, Requate T, Schmidt CM. Tobacco and Alcohol: Complements or Substitutes? A Structural Model Approach. 2008 Discussion Paper No. 3412 iza@iza.org
36. Goel R, Morey M. "The interdependence of Cigarette and Liquor Demand." Southern Economic Journal 1995; 62: 451-59.
37. Jones A, Mazzi M. "Tobacco consumption and taxation in Italy: an application of the QUAIDS model." Applied Economics 1996; 28: 595-603.
38. Moore M. "Death and tobacco taxes." RAND Journal of Economics 1996; 27: 415-428.
39. Su S, Yen S. "A Censored System of Cigarette and Alcohol Consumption. Applied Economics *2000;* 32: 729-37.
40. Ross H, Powell LM, Tauras JA. New evidence on youth smoking behavior based on experimental price increases. Contemporary Economic Policy 2005; 23:195–210.
41. Ross H, Blecher E, Yan L, Hyland A. Do cigarette prices motivate smokers to quit? New evidence from the ITC survey. Addiction 2010; 106:609–619.
42. Guillaumier A, Bonevski B, Paul C, D'Este C, Doran C, Siahpush M. Paying the price: A cross-sectional survey of Australian socioeconomically disadvantaged smokers' responses to hypothetical cigarette price rises. Drug and Alcohol Review 2014; 33:177–185
43. Chaloupka FJ, Straif K, Leon ME, Effectiveness of tax and price policies in tobacco control. Tobacco Control 2011; 20: 235–238.
44. Scollo M, Younie S, Wakefield M, Freeman J, Icasiano F. Impact of tobacco tax reforms on tobacco prices and tobacco use in Australia.

Tobacco Control 2003; 12(Suppl. II):59–66

45. Dunlop SM, Perez D, Cotter T. Australian smokers' and recent quitters' responses to the increasing price of cigarettes in the context of a tobacco tax increase. Addiction 2011; 106:1687–695.
46. Ross H, Blecher E, Yan L, Cummings KM. Predictors of what smokers say they will do in response to future price increases. Findings from the International Tobacco Control (ITC) Four Country Survey. Nicotine Tobacco Research 2011; 13:419–425.
47. Hanemann M, Loomis J, Kanninen B. Statistical Efficiency of Double–Bounded Dichotomous Choice Contingent Valuation. American Journal of Agriculture Economics, 1991, 73(4): 1255–1263.
48. Loyd-Richardson EE, Papandonatos G, Kazura A, Stanton C, Niaura R. Differentiating Stages of Smoking Intensity Among Adolescents: Stage-Specific Psychological and Social Influences. Journal of Consulting and Clinical Psychology 2002, 70(4): 998 –100
49. Kim WN, Lee JS. A Study of the effectiveness of tobacco control policy. Seoul: Korea University. 2005
50. Kim HC, Cho KS, Kwon SM, Lim JY. The Effect of the Increase in Tobacco Price on Adolescent Smoking in Korea: Smoking Reduction and Brand Switching. Health and Social Welfare Review 2012; 32(3):429-460.
51. Lasebikan VO, Baiyewu O. Profile of problems associated with psychoactive substance us among long distance commercial automobile drivers in Ibadan. Nigerian Journal of Psychiatry, 2009; 7:9-13.
52. Bello S, Fatiregun A, Ndifon WO, Oyo-Ita A, Ikpeme B. Social determinants of alcohol use among drivers in Calabar. Nigeria Medical Journal, 2011; 52:244-9.
53. Osler M, Prescott E, Psychosocial, behavioural, and health determinants of successful smoking cessation: a longitudinal study of Danish adults. Tobacco Control *1998;* **7**:262–267
54. Kaleta D, Korytkowski P, Makowiec-Dąbrowska T, Usidame B, Bąk-Romaniszyn L, Fronczak A. Predictors of long-term smoking cessation: results from the global adult tobacco survey in Poland (2009–2010). BMC Public Health, 2012; 12:1020
55. Georgiadou C, Lavdaniti, M, Psychogiou M, Tzenalis A, Sgantzos M. and Sapountzi-Krepia, D. Factors Affecting the Decision to Quit Smoking of the Participants of a Hospital-Based Smoking Cessation Program in Greece. Journal of Caring Sciences, 2015; 4(1), 1-11
56. Marti J. Successful smoking cessation and duration of abstinence—analysis of socioeconomic determinants. International Journal of Environment Research Public Health 2010; 7(7):2789–2799.
57. Breslau N. and Peterson EL. Smoking cessation in young adults: age at initiation of cigarette smoking and other suspected influences. America Journal of Public Health 1996; 86(2):214–220.
58. Marques-Vidal P, Melich-Cerveira J, Paccaud F, Waeber G, Vollenweider P, Cornuz J. Prevalence and factors

associated with difficulty and intention to quit smoking in Switzerland. BMC Public Health. 2011, 11:227

59. Kardia SL, Pomerleau CS, Rozek LS, Marks JL. Association of parental smoking history with nicotine dependence, smoking rate, and psychological co-factors in adult smokers. Addictive Behaviour 2003; 28(8): 1447-52.