# Driving Behaviour of Taxi Drivers towards Sustainable Public Road Transport in Ogun State, Nigeria

Bashir Olufemi Odufuwa*[1]

Umar Obafemi Salisu[1]

Simeon Oluwagbenga Fasina[1]

Nathaniel Oluwaseun Ogunseye[1]

Sunday Samuel Omoniyi [2]

## Abstract

*Driving is a psychomotor activity that requires combination of mental concentration and good visual functions. Regrettably, incessant deviant driving behaviour of commercial taxi drivers is worrisome. This study examines the driving behaviour of taxi drivers towards sustainable public road transport in Ogun State, Nigeria. Seven hundred and fifty (750) copies of questionnaire were distributed using multistage and random sampling techniques. Multiple Regression and Analysis of Variance (ANOVA) were used to test postulated hypotheses at 0.05 level of significance. More males (94%) are involved in commercial taxi driving than female (6%); and 91% had driving experience of more than two years. Factors influencing deviant driving behaviour of taxi drivers are intake of alcohol (72%); intake of drugs and other local substances before and while driving (65%); attitudes of traffic officers (96%); traffic situation (90%); demand for services (96%) and vehicle condition (88%). There is statistically significant relationship between years of driving experience and driving behaviour of taxi drivers ($F^{14}_{735}$ 17.118= P<0.05). Meanwhile, nine (9) out of the fourteen (14) predictors best predict driving behaviour of commercial drivers. This study recommends adherence to road safety driving rules and enforcement measures.*

**Keywords:** Driving Behaviour, Taxi, Motorist, Cities, Public Road Transport

[1]Department of Urban and Regional Planning, Olabisi Onabanjo University, Ago-Iwoye, Nigeria.

[2]Department of Architecture, Olabisi Onabanjo University, Ago-Iwoye, Nigeria.

*Corresponding author's email: odufuwabashir@yahoo.com

## Introduction

Efficient public transport system is a reflection of a healthy nation capable of enhancing spatial interactions. In other words, functionality of cities lies within the realm of quality transport infrastructure and services (Odufuwa, Ogunseye, Salisu & Fasina, 2018). This is based on the fact that, transportation is an indispensable component of the economy (Odufuwa, Salisu & Fasina, 2017). Hence, the need to provide efficient transportation service that is accessible to all categories of people. This justified the views emphasized by Owen (1964), Bruton (1975) and Armstrong-Wright (1987) that, transportation is a "derived demand" and there is "no escape from transport." It is imperative to note that increasing urban population, prevailing economic and political situation partly necessitated the use of unconventional or paratransit modes of public road transportation in most developing countries (Armstrong-Wright, 1987; Adesanya, 2002; Odufuwa, 2006; Schalekamp, Minanga, Wilkinson & Behrens, 2008; Odufuwa, 2014).

Studies show that, use of taxi is widespread in most African cities, like Nigeria, Ghana, South Africa, etc. and they dominate the urban transport market (Khosa, 1997; Schalekamp et al., 2008; van Zyl, 2009). To corroborate the importance of this industry, Fourie (2003) emphasized that taxis constitute about 65% or more of all passengers' journeys and render mobility service to about 3 to 5 million people on a daily basis. Examining the importance of this mode in transport market, the National Survey posits that 46% of Africans in urban areas of South Africa travel by taxis, followed by bus (20%) and train (13%) (Khosa, 1997). Similar to this is the fact that, there are over 7,000 taxis operating in Ogun State (Ogun State Vehicle Inspection Office, 2018). Indeed, in Abeokuta, the state capital, taxi is the dominant mode of travel among residents. Despite its pivotal role, it is displeasing to note that the industry, specifically the drivers, are noted for different deviant driving behavior. Meanwhile, considering safety and security issues, taxis in the state are nothing but death trap for most users and other road users. In addition, it is disheartening to note that the industry has disturbing history with hundreds of drivers being reckless and involved in road crashes and crime (Parker, Reason, Manstead & Stradling, 1995; Odufuwa, Ademiluyi & Adedeji, 2008; Odufuwa et al., 2017). In recent time, however, concerns have been raised on the increasing rate of unsafe, poorly-managed and prone- to-crashes taxis in the state. Furthermore,

deviant driving behaviour of taxi operators, prevalent road traffic accidents of taxis and repelling use of the taxi mode for criminal activities in Ogun State is rapidly evolving, and beckoning on government for necessary interventions. Indeed, regulation of this mode of transport requires understanding of the operational pattern.

Public transport is an integral backbone of urban life and one of the factors that determines the forms and socio-economic development of cities (Santhakumar, Gokuldas & Partheeban, 2003). It creates and maintains livable communities by reducing congestion and assuring long term sustainability of resource consumption (Adesanya, 2002; Odufuwa, 2006; Kruger & Landman, 2007; Ogunkoya, 2008). It was reiterated that, it is an essential means of moving large number of people with considerable flexibility in order to meet individual needs (Armstrong-Wright, 1987). Akinlade and Brieger (2004) observed that road traffic accidents have been increasing in developing countries such as Nigeria and Tanzania due to several factors, including drivers' driving behaviour. In their findings, it is revealed that there is a correlation between driving behaviour and road accidents. Thus, road traffic accidents have been recognized as important public health problem in both developed and developing countries.

Gudaji and Dankishiya (2016) observe that crashes have implications on quality of life, social and economic activities of individuals and the nation at large. Studies have shown that traffic accidents can be traced to human, mechanical and environmental factors (Geerlings, van Ast & Ongkittikul, 2005; Odufuwa, et al., 2017). Indeed, the human factor, which is the focus of this study, entails an array of drivers' attributes that include age, medical fitness, mental status, alcohol consumption, educational level among others (Evans, 1991; Parker et al., 1995; De Waard & Brookhuis, 1997; Elliott, Armitage & Baughan, 2005; Yan, Radwan & Guo, 2007; Eiksund, 2009). More so, Drummer et al. (2003) report a prevalence of 26.7% psychoactive substance use among fatally injured drivers; and Lasebikan and Baiyewu (2009) have also reported that road accidents among others are consequences of drivers' driving behaviour with a prevalence of 26.8% alcohol use disorders among drivers. However, it is noted that physical conditions of automobiles including taxi, age and mileage covered also have a direct impact on its operational productivity, maintenance costs as well as road traffic safety (Oosthizen, Kilian & Boshomane, 2001; Governder & Allopi, 2006). Nevertheless, many people all over the world are killed and severely injured in

road traffic crashes due to incessant deviant driving behaviour of drivers particularly, commercial drivers. Deviant driving behaviour contributes not only to number and outcome of traffic crashes, but a major cause of socio-economic losses on roads (Summala, 1985; Shinar, 1998; Comte, 2000; Peden, Scurfield, Sleet, Mohan, Hyder & Jarawan, 2004; Wallen Warner & Aberg, 2006).

Wallen Warner (2006) have studied factors influencing drivers speeding behaviour using Theory of Planned Behaviour (TBA). The behavioural data from Intelligent Speed Adaptation (ISA) and Speed Reducing Potentials (SRP) on a field trial system was used. Results show that most drivers exceed speed limits. Also, results reveal that the ISA (speed warning devices) serves as a check and balance of drivers' speed. This study focuses on drivers' speed behaviour without investigating other possible factors influencing driving behaviour. Bifulco, Galante, Pariota, Russo Spena and Del Gais (2014) conducted a survey on naturalistic observation of driving behaviour with the view of obtaining microscopic data for single vehicles on long road segments and for long time period using Instrumented Vehicle (IV) equipped with GPS, radar, cameras, and other sensors for data collection. The behaviour of more than 100 drivers were observed using the IV in active mode and Kolmogorov-Smirnov test to analysis. Findings show that the driving speeds are not dispersed across drivers and along the road stretches concerned, but they are similar both in average and deviation for active and passive observations.

Road Safety Authority (2015) investigates drivers' attitudes and behaviour among Irish motorists using face-to-face home interview guide to sample 1,000 motorists aged above the national car licensing age (17 years +). The study investigates errant driving behaviour among Irish motorists with focus on speeding to determine the attitudes of Irish motorists to a series of road safety measures including safety cameras. The study also reveals that records of speeding fines and punishments are more among motorists; most sampled respondents have been fined for speeding in the past three years; and about 55% motorists considered low level speeding acceptable and exceed 50km limit by 10km on transit. The study further reveals that 1% motorists were involved in more than one collision in the past five years due to lack of drivers' full concentration, passengers' distraction and use of mobile phone on the wheel.

Hussin, Yahia, Shaban, Aldukali and Mohd (2014) investigate attitudes and awareness of traffic safety among 384 drivers in Tripoli, Libya. It was discovered that drivers' age and gender have significant influence on attitudes and knowledge of traffic law. However, male drivers (74%) were found to have better knowledge on traffic law than their female counterparts (61%). By implication, the study suggests further knowledge and investigation of driving behaviour of commercial drivers and traffic safety campaign. Schechtman, Shinar and Compton (1999) establish statistical relationship between drinking habits (frequency and amount) and its effect on driving behaviour and traffic safety. It was reported that no evidence of statistical relationship between drinking habits and the use of seat belt, speed limit obedience of driving behaviour factors.

Shinar, Schechtman and Compton (2001) also investigate relationship between demographic characteristics of drivers and driving behaviour using prevention magazine data from 1994 to 1995 on four-way ANOVA model. Study shows that only female drivers were more law-abiding compared with the male. Furthermore, age and educational level strongly influence use of seat belt, while higher education and income level were significantly associated with speeding. The research, however, shows that severity of punishment and consistent penalty to offenders substantially impact driving behaviour. Iversen and Rundmo (2004) observe the relationship between risky driving behaviour, attitudes and accident involvement. The study notes that attitudes of drivers contribute significantly in predicting driving behaviours and involvement in accident. McHugh (2011) investigates road safety and older drivers' behaviour in Monaghan. The study reports that although habits such as drunk driving and speeding, which are major risk behaviour on roads are common among older drivers, but they still drive more carefully on roads than young drivers.

From the reviewed literature, it is imperative to state that there is a paucity of empirical study on the deviant driving behaviour among commercial taxi drivers towards sustainable public transport operational services in the third world countries. Sequel to the foregoing, this study examines relationship between driving behaviour and level of safety of commercial taxi. Stemming on this, the study aims at analyzing the need to regulate driving behaviour and operational patterns of taxi towards sustainable public road transport in Ogun State, Nigeria. It identifies and discusses factors influencing driving behaviour of taxi drivers.

## Materials and Methods

*Study Area*

Ogun State (the gateway state) is located in the south-western part of Nigeria. It lies within latitude $6^o$ N and $8^o$ N and longitudes $2.5^o$ E and $5^o$ E. The State covers about 16,762 square kilometers and approximately 1.82 percent of Nigeria landmass, Abeokuta being the capital city with land area of about 125,593.26 hectares. The population of the State is approximately 6 million in 2017 with an increase of about 2 million from the last census conducted in 2006. The Gateway State is subdivided into four geopolitical zones comprising Egba, Ijebu, Remo and Yewa, and located between two fast-growing states in the country, Lagos, with population of about 15 million in 2017, and Oyo, with a growing population of about 8 million (Salisu, 2017). However, the State capital is with other local government areas are identified and mapped in Figure 1.
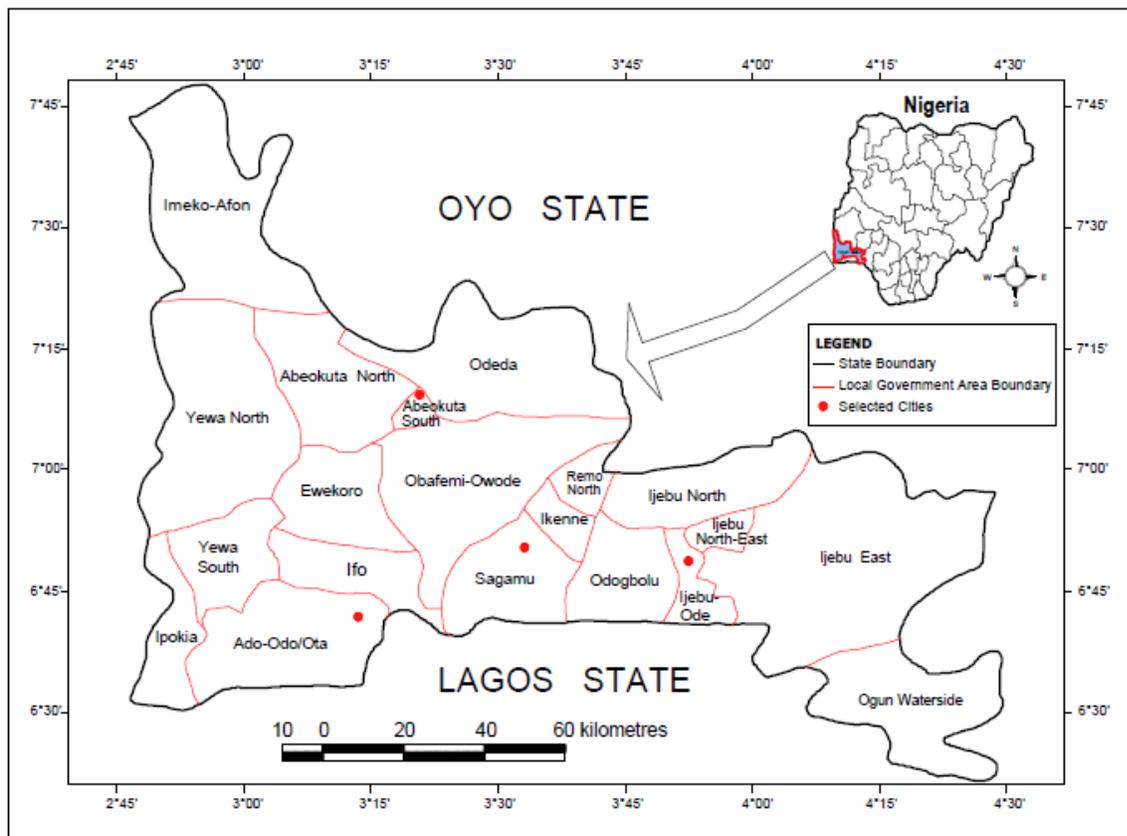


Figure 1: Map of Ogun State showing the Local Government Areas

## *Methods*

In this study, a cross-sectional survey of both qualitative and quantitative (empirical evidence) was adopted. The study derives its authority majorly from primary data (questionnaire, field observations, and interview), while information from various published and unpublished materials (books, articles, newspaper, theses, dissertations, reports, etc.) augmented the primary data. Towards getting a representative sample, multi-stage and random sampling techniques were used to administer seven hundred and fifty (750) structured questionnaires to elicit information from commercial drivers out of over 7,000 registered taxi operating drivers, in selected motor parks in the State. However, random sampling technique was used to administer questionnaires in selected motor parks within selected cities (Abeokuta, Ijebu-Ode, Sango-Ota and Sagamu).

The questionnaire as survey instrument developed, was divided into three sections. The first section sought for information relating to motorist or driver's socio-economic profile including gender, marital status, years of driving, vehicle ownership, vehicle type, license type, route frequently used, and average monthly income; while the second section probed into determinant or factors influencing driving behaviour of taxi drivers including driving fatigue, usage of mobile phone while driving, drivers carefree attitude and excesses, driving after consuming alcohol, usage of drug and other local substances before or while driving, passenger attitude and excesses, poor state of road, traffic congestion and delay, poor vehicular condition, lack of licenses and other vehicle document, traffic officers' attitude and excesses, and absence of traffic light and symbols. The third section contained questions on three main features that measures operational pattern and drivers' behaviour including length of operation; safety and security issues particularly on speed violation, collision, traffic light and symbol violation, alcohol consumption, and usage of mobile phone and suggestions on the means to regulate and improve the service.

Data collected were analyzed using simple descriptive statistics such as, frequency distribution and percentage tables. The regression analysis was used to examine relationship between determinants of driving behaviour of taxi drivers and drivers' experience profile. This was used to determine the influence of driver's years of driving and driving experience variable on the determinants of driving behaviour of taxi drivers; and to identify the most significant factors.

Invariably, regression analysis was used to test postulated hypothesis. The independent variables are the determinants of driving behaviour of respondents as presented in Table 1, which consists of fourteen (14) variables. The dependent variable is the years of driving. The variable labels and operational definition of each of the variable are also presented in Table 1. It is important to note, however, that while some of the variables are dichotomously defined, that is, operationally expressed as dummy variables, others are continuous variables.

Table 1: Variables Source, Label Code and Operational Definition for Years of Driving Experience and Factors Affecting Driving Behaviours of Taxi Drivers Relationship Analysis

| | Variable (Data Source) Description | Label in Model | Variable Operational Definition |
|---|---|---|---|
| 1 | Years of driving | $Y$ | continuous |
| 2 | Driving fatigue | $X1$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 3 | Age of drivers | $X2$ | continuous |
| 4 | Drivers' carefree attitude and excesses | $X3$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 5 | Passengers attitudes | $X4$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 6 | Drunk driving/ driving after intake of alcohol | $X5$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 7 | Usage of mobile phone while driving | $X6$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 8 | Intake of drug and other local substances while driving | $X7$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 9 | Road condition (poor situation of roads) | $X8$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 10 | Traffic situation (traffic congestion & delay) | $X9$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 11 | Vehicle condition | $X10$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 12 | Demand for services | $X11$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 13 | Lack of license & other vehicle documents | $X12$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 14 | Absence of traffic light, road signs and symbols | $X13$ | Dichotomous (dummy): 0 = Yes; 1 = No |
| 15 | Traffic officers' attitudes and excesses | $X14$ | Dichotomous (dummy): 0 = Yes; 1 = No |

## Results and Discussions

### *Drivers' Socio-Demographic Characteristics*

Of the 750 respondents, 93.9% are male while 6.1% are female. It is worth noting that commercial taxi business is more dominated by male. This, according to interaction with respondents, was attributed to unfriendly or harsh operational characteristics of taxi in the state, the reason for which most women do not want to be part of this sector. On the age group of respondents, findings reveal that majority of commercial taxi drivers are matured (age-wise) as none of the sampled respondents are below 18years. It was observed that majority (over 60%) are age 18–40 years, 25% are within 41-60 years while less than 10% are those above 60 years. Also, about 82% are married and are expected to display high sense of responsibility. Almost half (47.1%) of the respondents owned vehicle used as taxis, 26.8% owned the vehicle on a partnership arrangement, 22.7% hired the vehicle from private owner and 3.5% hired from the government. Majority (over 70%) of the respondents do not have drivers' license (Table 2). By implication, it is worth mentioning that most commercial taxi drivers operate without being licensed and however, offenders/violators of road traffic safety regulations.

Results on driving experience of respondents reveal that about 37% has over 10 years driving experience, about 54% have been driving for 2 to 10 years and about 9% have less than 2 years driving experience. However, findings from Table 2 confirmed that most of the sample commercial taxi drivers have reasonable years of driving experience (Table 2).

Table 2: Drivers' Socio-Demographic Characteristics

|  | Frequency | Percentage |
|---|---|---|
| **Gender** | | |
| Male | 704 | 93.9 |
| Female | 46 | 6.1 |
| *Total* | *750* | *100.0* |
| *Age* | | |
| *Below 18 years* | *0* | *0* |
| *18-40 years* | *493* | *65.7* |
| *41-60 years* | *189* | *25.2* |
| *Above 60 years* | *68* | *9.1* |
| *Total* | *750* | *100.0* |
| **Marital Status** | | |
| Married | 614 | 81.9 |
| Not married | 136 | 18.1 |
| *Total* | *750* | *100.0* |
| **Vehicle Ownership** | | |
| Individual owner | 353 | 47.1 |
| Hire service | 170 | 22.7 |
| Government | 26 | 3.5 |
| Partnership | 201 | 26.8 |
| *Total* | *750* | *100.0* |
| **License Type** | | |
| Learner Permit | 55 | 7.3 |
| Full license | 152 | 20.3 |
| Not license | 543 | 72.4 |
| *Total* | *750* | *100.0* |
| **Years of Driving** | | |
| Under 2 years | 65 | 8.7 |
| 2-5 years | 244 | 32.5 |
| 6-10 years | 164 | 21.9 |
| 11-15 years | 95 | 12.7 |
| 16-20 years | 88 | 11.7 |
| Above 20years | 94 | 12.5 |
| *Total* | *750* | *100.0* |

Source: Field Survey (2018)

### Factors Influencing Driving Behaviour among Taxi Drivers

Table 3 presents the perception of drivers on factors influencing driving behaviour. Table 3 shows that about 60% of respondents attested to the fact that drivers' fatigue, and drivers' carefree attitude and excesses as factors influencing drivers' driving behaviour. Also, majority (over 60%) of respondents linked drivers' driving behaviour to passengers' attitude and excesses; use of mobile phone while driving; and the intake of drugs and other local substances while driving respectively. Larger proportion of the respondents attested to drunk driving or driving after the intake of alcohol (72.4%); road condition (71.7%); traffic situation, congestion and delay (89.9%); vehicle condition (88.3%); and lack of driver's license and vehicle documents (96.4%) greatly influences drivers' driving behaviour.

Again, 96.4% respondents attested to available demand for services; absence of traffic light, roads signs and symbols (71.7%); and traffic officers' attitude and excesses (96.4%) as reasons for deviant drivers' driving behaviour. However, it is evident from findings that commercial taxi drivers attested to all identified influential factors of deviant driving behaviour. By implication, driving policy supports for drunk driving, use of mobile phone, lack of driver's license and vehicle documents, traffic officers' attitudes, and demand for services requires urgent attention of relevant authorities for appropriate intervention towards reducing its consequential effect on socio-economic loss, human loss and public health. It can also be deduced from the results that, issue of enforcement with respect to vehicles condition, traffic situation and safety are weak and requires urgent intervention with better approaches.

The impact rating of factors influencing driving behaviour among commercial taxi drivers was further investigated using Relative Index Measured (RIM) on 5-point Likert scale with gradation value that consist of Very low (VL=1), Low (L=2), Fair (F=3), High (H= 4) and Very high (VH=5). Findings revealed 3.81 as Mean Index Value (MIV) (Table 4). It was also observed from the analysis that demand for services (4.73), traffic officers' attitudes (4.58), use of drug and other local substances while driving (4.32) and traffic situations (traffic congestion and delay) (4.16) were ranked first, second, third and fourth among the factors, while drivers' carefree attitude (2.89) and age (2.62) were rated the thirteenth and fourteenth, that is, the least positions respectively.

More so, it is worth knowing that most of these factors rated above the MIV, indicating that driving behaviour of taxi drivers is best explained by these evaluated factors. However, driving fatigue, drivers' carefree attitude, passenger attitudes, driving after the intake of alcohol, absence of traffic light, road signs and symbols, and age of drivers were less-pronounced factors as they have Relative Index Mean (RIM) lower than the Mean Index Values (MIV) in the analysis (Table 4). It can be deduced from this analysis that there are variations in the RIM of the influencing factors among sampled commercial drivers.

Table 3: Factors Influencing Driving Behaviour among Taxi Drivers

|  | *Frequency* | *Percentage* |
|---|---|---|
| ***Driving Fatigue*** | | |
| *Yes* | *438* | *58.4* |
| *No* | *312* | *41.6* |
| *Total* | *750* | *100.0* |
| ***Drivers' carefree attitude*** | | |
| *Yes* | *443* | *59.1* |
| *No* | *307* | *40.9* |
| *Total* | *750* | *100.0* |
| ***Passengers attitudes*** | | |
| *Yes* | *493* | *65.7* |
| *No* | *257* | *34.3* |
| *Total* | *750* | *100.0* |
| ***Drunk driving/driving after taken alcohol*** | | |
| *Yes* | *543* | *72.4* |
| *No* | *207* | *27.6* |
| *Total* | *750* | *100.0* |
| ***Usage of mobile phone while driving*** | | |
| *Yes* | *484* | *64.5* |
| *No* | *266* | *35.5* |
| *Total* | *750* | *100.0* |
| ***Intake of drug and other local substances before and while driving*** | | |
| *Yes* | *484* | *64.5* |
| *No* | *266* | *35.5* |
| *Total* | *750* | *100.0* |
| ***Road Condition (Poor situation of roads)*** | | |
| *Yes* | *538* | *71.7* |
| *No* | *212* | *28.3* |
| *Total* | *750* | *100.0* |
| ***Traffic Situation (Traffic congestion & delay)*** | | |
| *Yes* | *674* | *89.9* |
| *No* | *76* | *10.1* |
| *Total* | *750* | *100.0* |
| ***Vehicle Condition*** | | |
| *Yes* | *662* | *88.3* |
| *No* | *88* | *11.7* |
| *Total* | *750* | *100.0* |

| | | |
|---|---|---|
| ***Demand for services*** | | |
| *Yes* | *723* | *96.4* |
| *No* | *27* | *3.6* |
| *Total* | *750* | *100.0* |
| ***Lack of license & other vehicle documents*** | | |
| *Yes* | *733* | *97.7* |
| *No* | *17* | *2.3* |
| *Total* | *750* | *100.0* |
| ***Absence of traffic light, road signs and symbols*** | | |
| *Yes* | *538* | *71.7* |
| *No* | *212* | *28.3* |
| *Total* | *750* | *100.0* |
| ***Traffic Officers Attitudes*** | | |
| *Yes* | *722* | *96.4* |
| *No* | *27* | *3.6* |
| *Total* | *750* | *100.0* |

Source: Authors' Field Survey (2018)


Table 4: Relative Index of Factors Influencing Driving Behaviour

| | VH-5 | H-4 | F-3 | L-2 | VL-1 | TWV | RIM | MIV | % | RK |
|---|---|---|---|---|---|---|---|---|---|---|
| Driving Fatigue | 560 | 916 | 291 | 424 | 100 | 2291 | 3.05 | | 5.73 | *12* |
| Drivers' carefree attitude | 280 | 1004 | 408 | 334 | 140 | 2166 | 2.89 | | 5.42 | *13* |
| Passenger attitudes | 500 | 1352 | 447 | 300 | 13 | 2612 | 3.48 | | 6.53 | *11* |
| Driving after taken alcohol | 1565 | 1120 | 270 | 8 | 63 | 3026 | 4.03 | | 7.57 | *7* |
| Use of mobile phone while driving | 1720 | 816 | 336 | 180 | 0 | 3052 | 4.07 | | 7.63 | *6* |
| Use of drug and other local substances before and while driving | 2095 | 740 | 336 | 68 | 0 | 3239 | 4.32 | | 8.10 | *3* |
| Road Condition (Poor situation of roads) | 850 | 1472 | 426 | 140 | 0 | 2888 | 3.85 | | 7.22 | *9* |
| Traffic Situation (Traffic congestion & delay) | 990 | 1904 | 228 | 0 | 0 | 3122 | 4.16 | | 7.81 | *4* |
| Vehicle Condition | 230 | 2464 | 234 | 20 | 0 | 2948 | 3.93 | | 7.37 | *8* |
| Demand for services | 2865 | 600 | 75 | 4 | 0 | 3544 | 4.73 | | 8.86 | *1* |
| Lack of driver's license & other vehicle documents | 415 | 2600 | 51 | 0 | 0 | 3066 | 4.09 | 3.81 | 7.67 | *5* |
| Absence of traffic light, road signs and symbols | 480 | 1768 | 0 | 366 | 29 | 2643 | 3.52 | | 6.61 | *10* |
| Traffic officers attitudes | 2315 | 1040 | 75 | 4 | 0 | 3434 | 4.58 | | 8.59 | *2* |
| Age of drivers | 325 | 384 | 753 | 334 | 171 | 1967 | 2.62 | | 4.92 | *14* |

*VH-Very High; H-High; F-Fair; L-Low & VL-Very Low*

Source: Authors' Field Survey (2018)

### *Driving Behaviour of Motorists with respect to Operational Issues*

#### a. *Road Design Speed Limit*

Data on drivers' behaviour with respect to operational issues including driving speed violation, collision, traffic light and symbol violation, alcoholic consumption and the use of mobile phone while driving were captured. Results from Table 5 revealed that about 28% of respondents exceed road speed limits, about 56% occasionally exceed limit and 16% never exceeded the limits. Results also indicated that approximately 24% of respondents exceed 50km speed limits by less than 10km, majority (61%) does occasionally but 15% never exceeded 50km speed limits by less than 50km. Furthermore, results show that 26% of respondents do often exceed 100km speed limits by less than 10km, 66% occasionally exceed the speed limit while 8% never exceeded the limit.  On the other hand, 28% of respondents often exceed speed limits by more than 10km, 66% occasionally exceed the limit but 6% never exceeded the limits.

Table 5: Exceeding Road Design Speed Limit

|  | Never | Rarely | Sometimes | Often | Very Often | *Percentage* |
|---|---|---|---|---|---|---|
| Exceed Road Design Speed Limits while Driving | 16.0 | 20.4 | 35.7 | 10.8 | 17.1 | *100.0* |
| Exceed 50km Speed Limits by Less Than 10km | 15.2 | 21.5 | 39.1 | 14.9 | 9.3 | *100.0* |
| Exceed 100km Speed Limits by Less Than 10km | 8.3 | 26.0 | 40.0 | 15.9 | 9.9 | *100.0* |
| Exceed 100km Speed Limits by More Than 10km | 6.3 | 20.5 | 45.1 | 19.7 | 8.4 | *100.0* |
| Break traffic rules to proceed faster | 7.2 | 8.8 | 28.7 | 21.3 | 34.0 | *100.0* |
| Drive faster to get to destination on time | 29.3 | 30.8 | 20.9 | 17.6 | 1.3 | *100.0* |

Source: Field Survey (2018)

#### b. *Speed violation*

Results further revealed that 55% of respondents often breaks traffic rules, 38% occasionally do and 7% adhere to traffic rules. Also, about 70% drives faster and exceed speed limit, while 29% never drive faster than the speed limit (Table 6).

Table 6: Violation of Speed Limit and/or Traffic Regulations and Penalty in Last Five Years

|  | Frequency | Percentage |
|---|---|---|
| No, I have never been caught | 186 | 24.8 |
| No, I have not broken speed limits and traffic rules | 135 | 18.0 |
| Yes, I was fined and received another penalty | 146 | 19.5 |
| Yes, I was fined | 283 | 37.7 |
| Total | 750 | 100.0 |

Source: Field Survey (2018)

Attempt was made to ascertain if respondents have been penalized in the last five years for violation of traffic regulation. About 38% confirmed they have been fined, 18% have not violated speed limit and traffic rules and 25% have never been caught but violated traffic rules. Overall, it can be deduced that most (82%) taxi drivers do violate traffic rules.

### c. Collision

Issues on collision involving respondents in the last five years were also considered. As shown in Table 7, 72% respondents affirmed that they experienced collision with vehicle or pedestrians, while less than 30% escaped collision with vehicle in the last five years with consequences of serious medical attention and disruption of business activities.

Table 7: Collision

|  | Frequency | Percentage |
|---|---|---|
| **Collision with vehicle or pedestrian in the last five years** |  |  |
| Yes | 543 | 72.4 |
| No | 207 | 27.6 |
| *Total* | *750* | *100.0* |
| **No accident/collision with vehicle in the last five years** |  |  |
| Yes | 212 | 28.3 |
| No | 538 | 71.7 |
| *Total* | *750* | *100.0* |

Source: Authors' Field Survey (2018)

### d. Reason for Collision

Various reasons were adduced for collision experienced by the respondents. Table 8 shows that majority (45%) blamed other drivers and 35% acclaimed distractions by passengers' attitudes and excesses. Other reasons identified were drivers exceeding safe speed limit (8%), pedestrian attitude and excesses along road corridors (6.1%), lack of concentration (3%) and non-usage of seat-belt and other safety devices while driving (1%).

Table 8: Reason for Collision

|  | Frequency | Percentage |
|---|---|---|
| Other driver was at fault | 340 | 45.3 |
| Distracted by a passenger attitude and excesses | 262 | 34.9 |
| Exceeding safe speed limit | 62 | 8.3 |
| Lack of concentration | 19 | 2.5 |
| Didn't wear belt or other safety device while driving | 13 | 1.8 |
| None of the above reasons | 54 | 7.2 |
| *Total* | *750* | *100.0* |

Source: Authors' Field Survey (2018)

### e. Violation/ Obeying of Traffic Light and Signals

Findings from Table 9 reveal that 71% of respondents observed that they do encounter speed breaker and other traffic control devices while on transit, 19% stated not very likely, about 9% were indifferent, while marginal proportion (1%) stated nothing of sort (Table 9). Furthermore, greater proportion (72%) of respondents do not obey traffic light and signal control devices at speed check points, 21% sometimes obey, while marginal proportion (7%) of commercial taxi drivers always obey traffic light and signal control devices (Table 9).

Table 9: Violation/Obeying of Traffic Signals and Control Devices

Likelihood of Encountering Speed Breaker by Traffic Symbols and Control Devices

|  | Frequency | Percentage |
|---|---|---|
| Very likely | 314 | 41.9 |
| Quite likely | 220 | 29.3 |
| Not very likely | 142 | 18.9 |
| Not at all | 10 | 1.3 |
| Don't know | 64 | 8.6 |
| *Total* | *750* | *100.0* |

Obeying Traffic Light and Signs at Speed Check Points

|  | Frequency | Percentage |
|---|---|---|
| Yes, I always | 54 | 7.2 |
| Yes, sometimes | 156 | 20.8 |
| No, I don't | 540 | 72.0 |
| *Total* | *750* | *100.0* |

Source: Field Survey (2018)

### f. Obeying Traffic Light and other Control Devices at Speed Check Points

Respondents' perceptions on effects of obeying traffic light and other control devices were captured in Table 10. Concerning road safety, about 86% respondents agreed that obeying traffic light and other control devices greatly make roads safer, while less than 15% disagreed and or could not decide. Also, regarding speeding, 72% of respondents believe that obeying traffic light and other control devices does not have effect on speeding but 16% thought otherwise. And with regards to traffic delay, the results obtained revealed 58% respondents believe that obeying traffic light and other control devices do cause traffic delay, while about 29% disagreed with the statement.

Table 10: Obeying Traffic Light and other Control Devices at Speed Check Points

|  | Strongly Agree | Agree | Undecided | Disagree | Strongly Disagree | *Percentage* |
|---|---|---|---|---|---|---|
| Make road safer | 42.0 | 43.6 | 5.5 | 4.5 | 4.4 | *100.0* |
| No effect on speeding | 33.9 | 38.0 | 12.4 | 12.7 | 3.1 | *100.0* |
| Cause traffic delay | 19.2 | 39.1 | 13.3 | 22.8 | 5.6 | *100.0* |

Source: Field Survey (2018)

### g. *Alcohol Consumption*

Previous studies (Drummer at al., 2003; Eiksund, 2009; Lasebikan & Baiyewu, 2009) have shown the effects of alcohol consumption on drivers' attitude. Data have been collected in this regard and analysed for presentation. Results in Table 11 indicated 72% of respondents drive after taking alcoholic substances, while 28% are not involved in drunk-driving. Also, most respondents (55%) consume alcohol daily, 19% consume 4 to 5 days weekly, 21% consume 2 to 3 days weekly and less than 5% take alcohol once weekly (Table 11). While 4% confirmed alcohol consumption twice-a-month, 30% do not take any alcohol at all (Table 11). More so, the study probed into volume of alcohol intake by respondents. Results show that 12% settled for 1 bottle, 17% takes 2 bottles, 13% consume more than 3 bottles, while majority (about 60%) take 3 bottles (Tables 11). In other words, result further revealed that majority (over 70%) of sampled respondents noted that the government through traffic agency should always carry out test of alcohol intake on driver before driving, as this will provide a means of checkmating the motorist particularly, the public drivers conveying large numbers of commuters within the cities (Table 11).

Table 11: Driving after taken alcohol

|  | Frequency | Percentage |
|---|---|---|
| Yes | 540 | 72.0 |
| No | 210 | 28.0 |
| *Total* | *750* | *100.0* |

Frequency of alcohol consumption

|  | Frequency | Percentage |
|---|---|---|
| Everyday | 299 | 55.4 |
| 4-5days a week | 102 | 18.9 |
| 2-3days a week | 115 | 21.3 |
| Once a week | 24 | 4.4 |
| Twice a month | 0 | 0 |
| *Total* | *540* | *100.0* |

Volume of alcohol intake before driving

|  | Frequency | Percentage |
|---|---|---|
| 1 bottle | 67 | 12.4 |
| 2 bottles | 91 | 16.9 |
| 3 bottles | 311 | 57.6 |
| More than 3 bottles | 71 | 13.1 |
| *Total* | *540* | *100.0* |

Should the government through traffic agency test alcohol intake of driver

|  | Frequency | Percentage |
|---|---|---|
| Yes | 547 | 72.8 |
| No | 203 | 26.9 |
| Total | 750 | 100.0 |

Source: Authors' Field Survey (2018)

### h. Usage of Mobile Phone while Driving

Respondents' use of mobile phone while driving was examined and information gathered revealed that majority (64.5%) of respondents used mobile phone while driving, whereas 35.5% do not use mobile phone behind the wheel (Table 12). Regarding the reason for use of mobile phone whilst driving, majority (38%) respondents make and receive calls because of the presence of traffic officers/vehicle inspection officers (VIO) while, only 6% of respondents make and receive calls because of family emergencies. By implication, the use of mobile phones through enhanced facilities like earphone or by hand does not only cause great distraction but also heighten the risks for drivers and other motorists while on transit.

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Table 12: Use of Mobile Phone While Driving

| Use of mobile phone while driving | Frequency | Percentage |
|---|---|---|
| Yes | 484 | 64.5 |
| No | 266 | 35.5 |
| *Total* | *750* | *100.0* |
| Reasons for using mobile phone whilst driving | | |
| | Frequency | Percentage |
| Make or receive calls because of traffic gridlock/congestion | 100 | 13.3 |
| Make and receive calls because of road traffic officers/VIO | 283 | 37.7 |
| Make and receive calls because of family emergencies | 46 | 6.1 |
| Text/message because of consignment(s) for delivery | 135 | 18.0 |
| Make or receive calls because of demand for services | 186 | 24.8 |
| Total | 750 | 100.0 |

Source: Authors' Field Survey (2018)

## Hypotheses Testing

### Hypothesis One

Further investigations were further carried out to establish the degree of affinity between the dependent (years of driving experience) and independent variables (determinant of deviant driving behaviour of taxi drivers). This was examined through the use of multiple regression analysis (Table 13).

Table 13 shows the multiple regression result through the model summary, the analysis of variance table of test of significance of the model, and more importantly, the unstandardized coefficient as well as the T-values and their significance. The multiple regression coefficient, particularly the $R^2$ is 0.446, indicating that about 45% of the variation in driving experience is explained by the independent variables combined (predictors). This level of explanation has an analysis of variance of the model of F ratio value of 17.118, which is statistically significant at (sig.= 0.000). However,

the independent variables (predictors) combined to explain significantly, the driving experience of respondents.

In other words, in terms of the relative importance of individual predictors in the model used, nine (9) out of fourteen (14) predicting variables are statistically significant, namely: traffic situation congestion/delay (p=0.000), demand for services (p=0.000), vehicular condition (p=0.008), lack of licenses and other vehicle document (p=0.000), traffic offices attitude and excesses (p=0.030), driving after taking  alcohol (p=0.004), use of drug and other local substance while driving (p=0.000), use of mobile phone while driving (p=0.000), and passenger attitude (p=0.046).

Table 13: Regression Result (H$_0$: Years of Driving Does Not Influence the Driving Behaviour of Taxi Drivers)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .696[a] | .446 | .432 | 1.3416 |

a. Predictors: (Constant), driving fatigue, Usage of mobile phone while driving, drivers carefree attitude and excesses, driving after consuming alcohol, usage of drug and other local substance before or while driving, passenger attitude and excesses, poor state of road, traffic congestion/delay, poor vehicular condition, Lack of licenses and other vehicle document, age of drivers, demand for services, traffic offices attitude and excesses, absence of traffic light and other control devices.

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| | Regression | 431.353 | 14 | 30.811 | 17.118 | .000[b] |
| 1 | Residual | 1322.925 | 735 | 1.800 | | |
| | Total | 1754.279 | 749 | | | |

a. Dependent Variable: Years of Driving

b. Predictors: (Constant), driving fatigue, usage of mobile phone while driving, drivers carefree attitude and excesses, driving after consuming alcohol, usage of drug and other local substance before or while driving, passenger attitude and excesses, poor state of road, traffic congestion/delay, poor vehicular condition, lack of licenses and other vehicle document, age of drivers, demand for services, traffic offices attitude and excesses, absence of traffic light and other control devices.

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| | (Constant) | 4.290 | .551 | | 7.782 | .000 |
| | Road condition | -.073 | .223 | -.011 | -.326 | .745 |
| | Traffic situation congestion | -.584 | .131 | -.147 | -4.467 | .000 |
| | Demand for services | .156 | .043 | .127 | 3.600 | .000 |
| | Vehicle condition | -.185 | .070 | -.092 | -2.647 | .008 |
| | Driving fatigue | .092 | .108 | .030 | .854 | .394 |
| | Lack of driver licenses and other vehicle document | -.294 | .051 | -.213 | -5.793 | .000 |
| 1 | Absence of traffic light and symbols | -.056 | .116 | -.018 | -.486 | .627 |
| | Traffic officers attitude | .178 | .117 | .055 | 1.514 | .030 |
| | Driving after taken alcohol | .131 | .108 | 143 | 3.216 | .004 |
| | Use of drug and other local substance while driving | -.524 | .112 | -.157 | -4.689 | .000 |
| | Use of mobile phone | .501 | .109 | .157 | 4.580 | .000 |
| | Drivers carefree attitude | -.087 | .060 | -.049 | -1.455 | .146 |
| | Passenger attitude | -.111 | .060 | -.061 | -2.844 | .046 |
| | Age of drivers | .132 | .122 | .039 | 1.080 | .280 |

a. Dependent Variable: Years of Driving

Source: Field Survey (2018)

The hypothetical decision rule is that $H_0$ should be accepted if calculated p. value is at or more than table value at specified alpha level (0.05). It is observed from Table 13 that the calculated model significant value (sig.=0.000) is less than table value at 0.05 alpha level. Hence, the alternative hypothesis ($H_1$) is accepted while the $H_0$ is rejected, indicating that driving behaviour of taxi drivers is statistically influenced by years of driving experience.

## *Hypothesis Two*

In a bid to establish the variations among the determinants of deviant driving behaviour of taxi drivers in Ogun State, Nigeria, Analysis of Variance (ANOVA) was used for statistical analysis. However, fourteen (14) variables used as determinants of deviant driving behaviour were also used for this analysis (Table 14).

Table 14: Summary of ANOVA Result on Variation among Determinants of Deviant Driving Behaviour of **Taxi Drivers**

Tests of Between-Subjects Effects

Measure: Determinant of Deviant Driving Behaviour of Taxi Drivers

Transformed Variable: Average

| Source | Type III Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | 26098.563 | 1 | 26098.563 | 56402.147 | 0.000 |
| Error | 346.579 | 749 | 0.463 | | |
| Total | 26445.142 | 750 | 26099.026 | | |

Source: Field Survey (2018)

Result of the Analysis of Variance (ANOVA) revealed the F-ratio is 56402.147 and observed significant value is 0.000 which is less than 0.05 confidence level while comparing the two values. Hence, alternative hypothesis ($H_1$) is accepted, while null hypothesis ($H_0$) is rejected. This implies that there is statistical variation among determinants or cause factors of deviant driving behaviour of commercial taxi drivers in Ogun State, Nigeria.

## Conclusion and Recommendations

Driving is a psychomotor activity that requires a combination of concentration and good visual and auditory functions. Commercial taxi drivers who render daily mobility services to most individuals in cities drive under the influence of psychoactive substances leading to increasing deviant driving behavior on roadways. Consequently, passengers are exposed to high level of risk, injuries and loss of lives and properties. No doubt, the unguided activities and excesses of commercial taxi drivers while on transit in cities are becoming worrisome and highly detrimental to safety of the nation's inhabitant and socio-economic growth. This study is important because it has filled the gap in literature in regard to deviant driving behaviour among taxi drivers in a typical fast-growing urban settlements in Ogun State, Nigeria. It is evident from the results that most of the commercial taxi drivers are not free from the consumption of psychoactive substances and therefore, they drive under the influence of alcohol, drugs, marijuana, gins, local concoctions usually called "*jedi*", "*gbokodoro*", "*gbelura*" etc., which are all psychoactive substances influencing deviant driving behaviour on roadways. Ironically, in the bid to understand the reasons behind these bad and unpleasant acts, commercial taxi drivers pass the buck of the blame influencing their driving behaviour and attitude on the passengers, though a good fraction still admitted being a deliberate act of choice while some attributed it to poor road condition, traffic congestion and activities and excesses of traffic officers and other security officers on roads.

 Furthermore, the effect of driving behaviour with respect to operational issues revealed that most drivers after consumption of psychoactive substances exceed road-driving speed limits and therefore, involved in speed violation and breaking of traffic rules. Findings also revealed that majority of sampled respondents affirmed that they experienced collision with vehicle or pedestrians in the last five years though they do not require serious medical attention due to collision, but collision experienced absolutely disrupted the day activities. Besides, further investigation conducted on the degree of affinity between the determinant of driving behaviour and years of driving experience of taxi drivers revealed that the deviant driving behaviour is statistically influenced by years of driving experience of taxi drivers as the examined independent

variables (predictors) combined together to explain significantly driving experience of respondents.

Sequel to the foregoing findings, the following are recommended. The formulation of effective transport policy for urban public road transport and driving behavior for safety assurance is very essential towards boosting urban mobility of major cities in Ogun State and cities in the country at large. Government should formulate policy for urban public transport operations with functional implementation strategies through traffic agency and local authorities to checkmate operations of motorist and carryout routine test of intake of drugs and alcohol before and while driving, as this would provide a means reducing deviant driving behaviour of motorists particularly of commercial drivers conveying large numbers of commuters within the cities for safe mobility.

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