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DISTRACTED DRIVING BEHAVIOUR AS INFLUENCED BY GENDER, VEHICLE DRIVER TYPE, TIME OF DAY, AND PRESENCE OF TRAFFIC OFFICER AMONG DRIVERS IN ABUJA, NIGERIA

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ABSTRACT

This study investigated the influence of Gender, Vehicle Driver Type, Time of Day and Presence of Traffic officers on Distracted Driving Behaviour in Abuja. A Naturalistic non-participatory observational design was used with a multi-stage sampling technique. Purposive sampling technique was used to select two area councils and two sites due to the traffic dynamics of Abuja territory, and convenience sampling technique was utilized to select 385 drivers. The characteristics of the participants include; 358 (92.99%) males, 27(7.01%) females. 100(25.97%) Commercial vehicle drivers, 285 (74.03%) private vehicle drivers. rush-hour periods represented 278(72.21%),107(27.79%) non-rush-hour periods, Presence of Traffic officers 242 (62.86%) and absents was 148(37.14%). The instrument used for data collection was a Recording sheet. Five hypotheses was generated and tested using chi-square contingency table and Binary Logistic Regression Analysis. Results revealed Time of day significantly predicted distracted driving behaviour, $B = 2.133$, $SE = 0.755$, $Wald \chi^2 = 7.976$, $p = .005$, $OR = 8.444$, 95% CI [1.921, 37.117]. Likewise, the presence of traffic officers significantly predicted distracted driving behaviour, $B = 2.220$, $SE = 0.675$, $Wald \chi^2 = 10.820$, $p = .001$, $OR = 9.212$, 95% CI [2.453, 34.587]. Most importantly, the interaction between time of day and the presence of traffic officers was statistically significant, $B = -1.149$, $SE = 0.478$, $Wald \chi^2 = 5.770$, $p = .016$, $OR = 0.317$, 95% CI [0.124, 0.809]. Based on these findings, it is recommended that Traffic authorities should ensure adequate officer presence during times of the day that have been determined to have higher distraction risk.

Keywords: *Gender, Vehicle Driver Type, Time of Day, Presence of Traffic officers, Distracted Driving Behaviour, Abuja*

INTRODUCTION

Background to the Study

Road traffic accidents continue to pose as a substantial global public health concern and socioeconomic challenge. According to the World Health Organization (WHO, 2023) report, estimated 1.35 million deaths results from road traffic accidents, while another 20 to 50 million suffer non-fatal injuries, many of which result in long-term disability, trauma, and socioeconomic burden. These statistics reveal not only the magnitude of the problem but also the urgent need for multidimensional strategies to mitigating road traffic crashes worldwide. While high-income countries have made commendable progress in reduction of road traffic incidents through stringent laws, public awareness campaigns, and advanced vehicle technologies, low- and middle-income countries (LMICs), including those in sub-Saharan Africa, continue to contend with inadequate enforcement, limited public education, and infrastructural deficits (Goel et al., 2025).

In addition, previous studies have emphasized the importance of human factors in road safety (Jafarzadeh Ghouschi et al., 2023; Uzundu et al., 2022). In particular, researchers have identified driver behaviour and driver performance as two critical components in understanding traffic safety outcomes (Akande, 2021; Labbo et al., 2025; Malik, 2022; WHO, 2011; Scanlon et al., 2021). Among the wide array of risky driving behaviours, distracted driving has been singled out as a major cause of reduced performance and increased accident risk (Strayer, 2011; Okenwa et al., 2021). Distracted driving as used here is seen as carrying out a secondary undertaking that takes away one's attention from driving. These distractions can arise from within the vehicle (internal) to the driver, or from outside (external) the vehicle and they can be either intentional (volitional) or unintentional (Regan & Oviedo-Trespalacios, 2022).

Gender differences in distracted driving behaviour have attracted considerable global research attention with mixed conclusions. Gender may significantly affect distracted driving behaviour, with studies indicating different risk profiles. For example, previous research suggested that male drivers tend to exhibit riskier behaviours, such as faster driving and frequent lane changes, while female drivers were perceived as more cautious. Males have higher mobile phone use, 30% found that males have higher mobile phone use, while 46% of the studies found no gender difference. Shajari et al. (2023) found differences in distraction levels based on gender and vehicle type, with males and four-wheeler drivers exhibiting higher distraction rates.

The vehicle driver type, has also been identified as a likely variable influencing distracted driving behaviour, as commercial drivers, including taxi, bus, and motorcycle operators, often face unique pressures including the need to communicate with passengers, handle payments, and respond to business calls while driving (Razaghi et al., 2024). The study of Mekonnen et

al. (2019) analysed driving behaviour among professional drivers in Ethiopia, showing that beyond individual factors, demographic and socioeconomic factors may contribute to driving behaviour. Many drivers in their study, especially those with performance-based pay, engaged in risky behaviours such as speeding and running red lights to increase their income, which in turn increased their accident risk. This is supported by the studies by Taiwo et al. (2024) demonstrating that professional drivers, despite extensive driving experience, frequently engage in distracted driving a form of risky behaviour due to workplace demands and the perception of enhanced driving skills.

Time of day represents another significant factor influencing distracted driving behaviour. Yan et al. (2022) indicate that evening and late-night distracted driving increased during COVID-19 lockdowns and has remained higher than pre-pandemic levels. Sajid Hasan et al. (2022) has shown that distracted driving incidents tend to peak during certain hours when drivers are pressed for time and attempting to multitask while commuting. Odusola et al. (2023) revealed that road traffic accidents in Lagos were high across peak commuting hours of (07:00-12:59 and 13:00-18:59) highlighting the need to consider time of day as a variable in understanding and addressing distracted driving behaviour in other cities like Abuja because of shared characteristics.

Traffic officers are expected to serve as a deterrent to distracted driving, though enforcement effectiveness varies by context. Based on the Theory of Planned Behaviour (Ajzen, 1991), the perceived risk of being caught influences driver behaviours. Dairo (2023) found that habits emerged as the strongest predictor of cell phone-related distractions, and that subjective norms and perceived behavioural control are strongly associated with mobile phone use while driving. Thus, explaining why drivers may likely engage in distracted driving on Nigerian roads. Research indicates that when drivers are aware of law enforcement presence, they tend to be more compliant with traffic rules, including refraining from mobile phone use while driving (Nakano et al., 2019). It is however important to know whether drivers in Abuja (administrative seat of Government and the capital of Nigeria) are more compliant with the traffic rules and whether the presence of enforcement encourages compliance.

Statement of Problem

Road traffic injuries remain a major public health and development challenge globally and in Nigeria, undermining progress toward the Sustainable Development Goals (SDGs), particularly the target of reducing road traffic fatalities and injuries. In response, the United Nations has set an ambitious goal of achieving a 50% reduction in global road traffic deaths by 2030. Aligning with this global commitment, Nigeria adopted the Nigeria Road Safety Strategy II (NRSS II) for the period 2021–2030, which sets a national target of at least a 15% reduction in annual road traffic fatalities. Central to the NRSS II is the mitigation of key behavioural risk factors that significantly contribute to crashes and fatalities, including excessive and inappropriate speed, driving under the influence of alcohol and drugs, riding

motorcycles without helmets, non-use of seatbelts and child restraints, and distracted driving, particularly the use of mobile phones while driving.

Despite these policy commitments, Nigeria continues to experience high rates of road traffic crashes and fatalities. For example there was an increase in the number of crashes between 2015-2020 from data published, suggesting a persistent gap between strategic objectives and on-road realities (Uhegbu, 2021). Distracted driving has emerged as a growing and particularly concerning risk factor due to the rapid increase in mobile phone ownership and use, especially in urban centres. However, compared with other behavioural risk factors such as speeding and alcohol use, distracted driving have not been extensively explored in the Nigerian context, this may likely influence enforcement and intervention efforts.

In Abuja, Nigeria's federal capital territory, rapid urbanisation, high traffic volumes, diverse driver populations, and varying traffic control conditions may further exacerbate the impact of distracted driving. Yet, there is limited systematic data on the demographic characteristics of drivers who engage in distracted driving, the temporal patterns under which it occurs, and the situational factors that influence this behaviour. This lack of disaggregated and context-specific evidence constrains the ability of policymakers, road safety agencies, and enforcement authorities to design targeted, effective, and sustainable interventions aligned with the NRSS II and the SDGs.

Against this backdrop, the problem addressed by this study is the insufficient empirical understanding of distracted driving behaviour in Abuja, particularly with respect to the drivers gender, time of day, vehicle driver type, presence of enforcement associated with mobile phone use while driving and talking with a passenger.

This study therefore seeks to address this gap by generating data-driven insights on distracted driving in Abuja, thereby contributing to evidence-based road safety policies aimed at reducing road traffic fatalities in Nigeria.

Purpose of Study

The aim of the study is to examine the influence of gender, vehicle driver type, time of day and presence of traffic officer on distracted driving behaviour in Abuja. The specific objectives are

1. To naturally explore the occurrence of distracted driving behaviour in the real life situation, that is without limitations of experimental control or stimulated conditions.
2. To examine whether gender influences the engagement in distracted driving activities in Abuja.

3. To determine the vehicle driver type who engages in distracted driving activities in Abuja.
4. To examine if the time of day influences the engagement of distracted driving activities in Abuja.
5. To determine whether the presence of traffic officer will influence the engagement of distracted driving activities.
6. To examine, interactive/joint association of gender, vehicle driver type, time of day and presence of traffic officer on distracted driving behaviour, especially in Abuja, Nigeria.

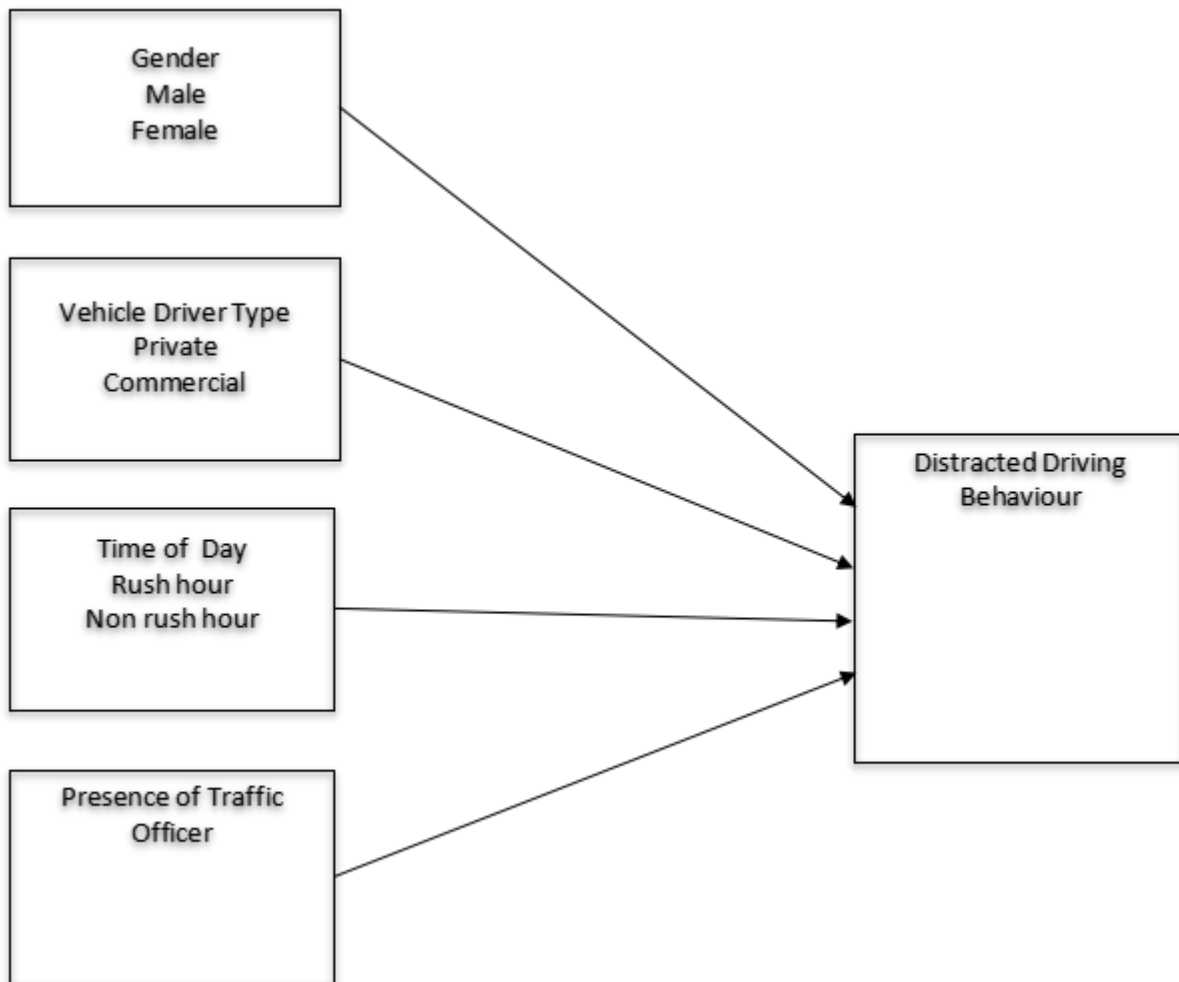
Relevance of Study

The findings of this study are of significant relevance to a wide range of stakeholders involved in road safety, transportation planning, and public welfare in Nigeria. For government and policy makers, particularly the Federal Road Safety Corps (FRSC), Federal Capital Territory Administration (FCTA), and legislative bodies, the study will provide empirical, location-specific evidence on how gender, vehicle driver type, time of day, and traffic officer presence influence distracted driving behaviour. This evidence can inform the formulation, review, and enforcement of traffic safety policies, targeted regulations, and time-specific enforcement strategies aligned with national road safety goals and the United Nations Sustainable Development Goal 3.6.

For researchers and academics, the study fills a gap in Nigerian road safety literature by using observational methods and examining the combined effects of multiple contextual factors in an under-researched urban setting, thereby providing a foundation for future studies and comparative analyses. Overall, the study contributes to safer roads, informed decision-making, and sustainable urban mobility in the Federal Capital Territory and Nigeria at large.

LITERATURE REVIEW

This study is anchored on three theoretical perspectives that provide a comprehensive understanding of distracted driving behaviour. The Theory of Planned Behaviour explains the cognitive processes underlying drivers' intentions and actions, Deterrence Theory addresses the role of enforcement and punishment in modifying behaviour, while Social Cognitive Theory examines how observational learning and environmental factors shape driving conduct.



Conceptual framework

Figure 1: Conceptual Framework in the study

Research Hypotheses

1. Female drivers would significantly be more involved in distracted driving behaviour than Male drivers in Abuja
2. Commercial Drivers would be more significantly involved in distracted driving behaviour than drivers of private vehicles in Abuja
3. Drivers would be less significantly involved in distracted driving behaviours during rush hour than during non-rush hour in Abuja
4. Drivers would be less significantly involved in distracted in driving behaviour where there is the presence of Traffic officers than when there is no traffic officers in Abuja

5. There would be a significant independent and interactive association between gender, vehicle driver type, time of day and presence of traffic officer on distracted driving behaviour. in Abuja

METHODS

Design

Naturalistic non-participatory observational design was used for this study

Setting

Abuja, popularly known as the Federal Capital Territory (FCT), is located in the center of the country. Two sites are Herbert Macaulay Way, which links entry for populations who commute to Wuse District, the central business district, and Garki District in AMAC, while Lokoja-Abaji-Dawliko Road in Gwagwalada is one of the gateways for populations of commuters to other villages and the Kwali area council in Abuja.

Participants

The participants in the study were 385 drivers. The socio-demographic characteristics of the participants. The include; male, 133 (94.3%), while females were 8(5.7%). Commercial vehicle drivers were 40(28%) of the sample, compared with 101 (71%) private vehicle drivers. Observations conducted during rush-hour periods represented 91(64.5%) of the total sample, while 50(35.5%) were conducted during non-rush-hour periods. Furthermore, 72(51.1%) of the observations occurred in the presence of traffic officers, while the remaining were undertaken in their absence. Regarding the outcome variable, 141 drivers exhibited distracted driving behaviour, whereas 244 drivers were not observed engaging in distracted driving behaviour.

Sample size determination

Cochran's formula for estimating sample size for large populations was used to determine the number of observations: Cochran (1977); $n_0 = z^2 \cdot p \cdot (1-p) / e^2$

Substituting into the formula:

$$n_0 = Z^2 \cdot p \cdot (1-p) / e^2 = (1.96)^2 (0.5)(1-0.5) / (0.05)^2 = 385 \text{ Drivers}$$

Where:

$Z = 1.96$ (standard normal deviate at 95% confidence)

p = estimated prevalence of distracted driving (0.5 for maximum variability)

e = margin of error (0.05)

Sampling technique and sampling procedure

The study employed a multi-stage sampling technique

Inclusion

Drivers of private vehicles with blue lettering number plates, even if used for commercial purposes, was categorized as private, using the number plate as officially recognized by Nigerian law

Drivers of commercial vehicles were identified by the red lettering on their license plates. In addition to this criterion, taxi cabs with FCT coloring on their vehicles were eligible and were included, as were passenger vehicle or bus operators.

Instrument

Recording sheet (Pheko 2013)

Binoculars: This is an optical instrument with a lens for each eye, used to view distant objects.

Reliability of the Measures

Cohen's kappa coefficient was used to assess inter-observer reliability. The result showed substantial to perfect agreement across all checklist variables, with overall mean reliability of $k = .87$, indicating almost perfect agreement.

Ethical Consideration

This study was ethically screened and approved by the Social Sciences and Humanities Research Ethics Committee (SSHRC) at the University of Ibadan before it began.

Procedure for Data Collection

An advertisement was placed to recruit volunteers willing to serve as recorders/observers. The observers were trained and various round of trials was conducted to ensure that the observers were fully conversant with what was expected of them. The pilot study was used to ensure the checklist measured what it was intended to measure. Results were analyzed Cohen Kappa coefficients with a mean reliability of .87. The result showed agreement to ensure a proper understanding of the process and the expectations of the task for the observers. The main study commenced on the 18th of March 2026 and ended on 27th of March 2026.

Statistical Analyses

Quantitative data were analyzed using SPSS version 27. Descriptive statistics (frequencies and percentages) will summarize observed behaviours, while chi-square contingency table and Binary Logistic Regression Analysis was used for the inferential statistics.

RESULTS

The participants observed in this study were 385 drivers. The socio-demographic characteristics of the participants reveal that the majority of the observed drivers were male, 133 (94.3%), while females were 8(5.7%). Commercial vehicle drivers were 40(28%) of the sample, compared with 101 (71%) private vehicle drivers. Observations conducted during rush-hour periods represented 91(64.5%) of the total sample, while 50(35.5%) were conducted during non-rush-hour periods. Furthermore, 72(51.1%) of the observations occurred in the presence of traffic officers, while the remaining were undertaken in their absence. Regarding the outcome variable, 141 drivers exhibited distracted driving behaviour, whereas 244 drivers were not observed engaging in distracted driving behaviour.

These descriptive findings provide an overview of the sample characteristics and set the context for the inferential analyses presented in the subsequent sections.

Hypothesis One

This hypothesis stated that female drivers will significantly be more involved in distracted driving behaviour than Male drivers. This was tested using Chi square and the result is presented in Table 1.

Table 1: Chi-square summary table for gender difference on distracted driving behaviour

Gender	Distracted n (%)	Non-Distracted n (%)	Total	χ^2	p-value	P
Male	133 (94.3)	225 (92.2)	358	0.612	.434	>.05
Female	8(5.7)	19(7.8)	27			
Total	141(100.0)	244(100.0)	385			

Result in Table 1 shows that there was no significant difference between gender and distracted driving behaviour, $\chi^2(1, N = 385) = 0.612$, $p = .434$. Based on this result, hypothesis 1 which stated that 'female drivers would significantly be more involved in distracted driving behaviour than Male driver' was therefore rejected. Therefore distracted driving is a behaviour engaged in by both females and males equally.

Hypothesis Two

This hypothesis stated that commercial drivers will be more significantly involved in distracted driving behaviour than drivers of private vehicles. This was tested using Chi square and the result is presented in Table 2

Table 2: Chi-square summary table for difference on Vehicle driver type on distracted driving behaviour

Vehicle Driver Type	Distracted n (%)	Non-Distracted n (%)	Total	χ^2	p-value	P
Private	101 (71.6)	184 (75.4)	285	0.664	.415	>.05
Commercial	40(28.4)	60(24.6)	100			
Total	141(100.0)	244(100.0)	385			

Result in table 2 showed that there was no significant association found between Vehicle driver type and distracted driving behaviour, $\chi^2(1, N = 385) = 0.664$, $p = .415$. Based on this result, hypothesis two which stated that 'commercial drivers would be more significantly involved in distracted driving

behaviour than drivers of private vehicles' was therefore rejected. Therefore distracted driving is a general behaviour engaged in by drivers, be it private or commercial drivers.

Hypothesis Three:

This hypothesis stated that drivers will be less significantly involved in distracted driving behaviours during rush hour than during non-rush hours. This was tested using Chi square and the result is presented in Table 3.

Table 3: Chi-square summary table for the difference between Time of Day and distracted driving behaviour

Time of Day	Distracted n (%)	Non-Distracted n (%)	Total	χ^2	p-value	P
Rush Hour	91 (64.5)	184 (75.4)	278	6.520	.011	<.05
Non-Rush Hour	50(35.5)	57(23.4)	107			
Total	141(100.0)	244(100.0)	385			

Result in table 3 shows that there was a significant association between time of day and distracted driving behaviour, $\chi^2(1, N = 385) = 6.520$, $p = .011$. Drivers were proportionally more distracted during non-rush hours than during rush hour. Based on this, hypothesis three which stated that drivers would be less significantly involved in distracted driving behaviours during rush hour than during non rush hours was therefore accepted.

Hypothesis Four:

This hypothesis stated that drivers will be less significantly involved in distracted driving behaviour where there is the presence of traffic officers than when there are no traffic officers, and the result is presented in Table 4.

Table 4: Chi-square summary table showing the difference between presence/absence of traffic officers and distracted driving behaviour

Presence of Traffic Officer	Distracted n (%)	Non-Distracted n (%)	Total	χ^2	p-value	P
Present	72 (51.1)	170 (69.7)	242	13.254	.001	<.05
Absent	69(48.9)	74(30.3)	143			
Total	141(100.0)	244(100.0)	385			

Result in table 4 shows that there was a significant association between the presence of traffic officers and distracted driving behaviour, $\chi^2(1, N = 385) = 13.254$, $p < .001$. Distracted driving was higher when traffic officers were absent. Based on this result, hypothesis 4 which stated that 'drivers would be less significantly involved in distracted driving behaviour where there is the presence of traffic officers than when there are no traffic officers' was therefore accepted.

Hypothesis Five:

This hypothesis stated that there will be a significant independent and interactive association between gender, vehicle driver type, time of day and presence of traffic officer on distracted driving behaviour. This was tested using binary logistic regression and the result is presented in Table 5. First, the main effects of the predictor variables were examined, followed by six separate two-way interaction models.

Table 5.1 Binary Logistic Regression Analysis showing the interaction between Gender and Vehicle Driver Type as Predictors of Distracted Driving Behaviour (N = 385).

Predictor	B	SE	Wald χ^2	p-value	Odds Ratio Exp(B)	95% CI for OR
						Lower Upper
Gender (Male vs Female)	20.351	40206.117	.000	1.000	689459978.260	.000
VehicleDriverType	20.774	40206.117	.000	1.000	1051718610.904	.000
Gender*VehicleDriverType	-20.774	40206.117	.000	1.000	.000	.000
Constant	-.770	.330	5.488	0.020	.463	

The interaction between gender and vehicle driver type was examined using binary logistic regression. The interaction effect was not statistically significant, $B = -20.774$, Wald $\chi^2 = 0.000$, $p = 1.000$. Therefore, vehicle driver type did not significantly predict the relationship between gender and distracted driving behaviour. Therefore there is no statistically significant interaction.

Table 5.2 Binary Logistic Regression Analysis showing the interaction between Gender and Time of Day

Predictor	B	SE	Wald χ^2	p-value	Odds Ratio Exp(B)	95% CI for OR
						Lower Upper
Gender (Male vs Female)	.110	1.311	.007	.933	1.116	.086 14.569
Time of Day	.984	1.005	.958	.328	2.674	.373 19.171
Gender*Time of Day	-.361	.914	.156	.693	.697	.116 4.181
Constant	-.454	.589	.595	.441	.635	

The interaction between gender and time of day was examined to determine whether the influence of gender on distracted driving differed between rush-hour and non-rush-hour periods. The interaction term was not statistically significant, $B = -0.361$, $SE = 0.914$, Wald $\chi^2 = 0.156$, $p = .693$, OR = 0.697, 95% CI [0.116, 4.181]. Similarly, neither gender ($p = .933$) nor time of day ($p = .328$) significantly predicted distracted driving behaviour within the interaction model. These findings indicate that the

relationship between gender and distracted driving behaviour does not vary according to the time of day.

Table 5.3 Binary Logistic Regression Analysis showing the interaction between Gender and Presence of Traffic Officer

Predictor	B	SE	Wald χ^2	p-value	Odds Ratio Exp(B)	95% CI for OR	
						Lower	Upper
Gender (Male vs Female)	-1.514	1.396	1.176	.278	.220	.014	3.393
Presence of Traffic Officer	-.216	1.048	.042	.837	.806	.103	6.287
Gender*Presence of Traffic Officer	.945	.973	.943	.331	2.572	.382	17.316
Constant	-1.547	.338	20.933	.000	.213		

The interaction between gender and the presence of a traffic officer was examined.

The interaction effect was not statistically significant, $B = 0.945$, $SE = 0.973$, Wald $\chi^2 = 0.943$, $p = .331$, OR = 2.572, 95% CI [0.382, 17.316]. Neither gender ($p = .278$) nor the presence of traffic officers ($p = .837$) remained statistically significant within this interaction model. Therefore, the effect of traffic officer presence on distracted driving behaviour did not differ significantly between male and female drivers.

Table 5.4 Binary Logistic Regression Analysis showing the interaction between Vehicle Driver Type and Time of Day

Predictor	B	SE	Wald χ^2	p-value	Odds Ratio Exp(B)	95% CI for OR	
						Lower	Upper
Vehicle Driver Type	-.262	.723	.131	.717	.769	.186	3.175
Time of Day	.683	.701	.948	.330	1.979	.501	7.819
Vehicle Driver Type*Time of Day	-.080	.512	.024	.876	.923	.338	2.520
Constant	-1.106	.617	3.209	.073	.331		

The interaction between vehicle driver type and time of day was examined. The interaction effect was not statistically significant, $B = -0.080$, $SE = 0.512$, Wald $\chi^2 = 0.24$, $p = .876$, OR = .923, 95% CI [0.338, 2.520]. Neither vehicle driver type ($p = .717$) nor Time of Day ($p = .948$) significantly predicted distracted driving behaviour within this interaction model. These findings indicate that the effectiveness of traffic officer presence in reducing distracted driving behaviour does not differ significantly between commercial and private vehicle drivers.

Table 5.5 Binary Logistic Regression Analysis showing the interaction between Vehicle Driver Type and Presence of Traffic Officer

Predictor	B	SE	Wald χ^2	p-value	Odds Ratio Exp(B)	95% CI for OR	
						Lower	Upper
Vehicle Driver Type	-.622	.752	.684	.408	.537	.123	2.344
Presence of Traffic Officers	.062	.668	.009	.926	1.064	.287	3.939

Vehicle Driver Type * Presence of Traffic Officers	.575	.501	1.317	.251	1.778	.666	4.748
Constant	-1.484	.380	15.264	.000	.227		

The interaction between vehicle driver type and the presence of traffic officers was examined. The interaction effect was not statistically significant, $B = 0.575$, $SE = 0.501$, Wald $\chi^2 = 1.317$, $p = .251$, OR = 1.778, 95% CI [0.666, 4.748]. Neither vehicle driver type ($p = .408$) nor the presence of traffic officers ($p = .926$) significantly predicted distracted driving behaviour within this interaction model. These findings indicate that the effectiveness of traffic officer presence in reducing distracted driving behaviour does not differ significantly between commercial and private vehicle drivers.

Table 5.6 Binary Logistic Regression Analysis showing the interaction between Time of Day and Presence of Traffic Officers

Predictor	B	SE	Wald χ^2	p-value	Odds Ratio Exp(B)	95% CI for OR	
						Lower	Upper
Time of Day	2.133	.755	7.976	.005	8.444	1.921	37.117
Presence of Traffic Officers	2.220	.675	10.820	.001	9.212	2.453	34.587
Time of Day * Presence of Traffic Officers	-1.149	.478	5.770	.016	.317	.124	.809
Constant	-2.143	.395	29.410	.000	.117		

The interaction between time of day and the presence of traffic officers was statistically significant. Time of day significantly predicted distracted driving behaviour, $B = 2.133$, $SE = 0.755$, Wald $\chi^2 = 7.976$, $p = .005$, OR = 8.444, 95% CI [1.921, 37.117]. Likewise, the presence of traffic officers significantly predicted distracted driving behaviour, $B = 2.220$, $SE = 0.675$, Wald $\chi^2 = 10.820$, $p = .001$, OR = 9.212, 95% CI [2.453, 34.587].

Most importantly, the interaction between time of day and the presence of traffic officers was statistically significant, $B = -1.149$, $SE = 0.478$, Wald $\chi^2 = 5.770$, $p = .016$, OR = 0.317, 95% CI [0.124, 0.809].

The odds ratio of 0.317 indicates that the effect of one predictor depended on the level of the other. Specifically, the influence of traffic officer presence on distracted driving behaviour differed between rush-hour and non-rush-hour periods. The negative regression coefficient suggests that the reduction in distracted driving associated with the presence of traffic officers was greater during one time period than the other, indicating a significant moderation effect.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Discussion

Gender and Distracted Driving Behaviour

Earlier, there was a presumption that gender could significantly affect distracted driving behaviour, with studies indicating different risk profiles. For example, previous research suggested that male drivers tend to exhibit riskier behaviours, such as faster driving and

frequent lane changes, while female drivers were perceived as more cautious. These assumptions led to the hypothesis that misbehaviour could correlate differently by gender. However, evidence from this study demonstrates that such assumptions may not accurately reflect the current realities of driving behaviour in Abuja, Nigeria.

The results of this research indicate that there is no statistically significant difference between male and female drivers in engaging in distracted driving behaviour. This suggests that both genders are equally susceptible to distractions while driving in Nigeria, facing similar driving conditions and circumstances that contribute to unsafe practices. Consequently, addressing distracted driving in Nigeria requires a collective approach that considers all drivers, rather than focusing solely on gender differences. Therefore, distracted driving remains a critical issue that demands attention from policymakers, law enforcement, and the public in Nigeria. Promoting awareness campaigns that target all drivers, regardless of gender, can help mitigate the risks associated with distracted driving. By fostering a culture of responsibility and vigilance on the road, Nigeria can work toward reducing the occurrence of accidents attributed to distraction, ultimately improving road safety for all.

This aligns with Atubi (2023), who reported that although gender differences may exist in some driving outcomes in Nigeria, in-vehicle and other common situational factors affect this behaviour similarly for both genders. However, this result is at odds with Arca et al. (2022), who found psychophysiological differences in distraction response between male and female drivers. The result is more likely attribute explained by the Theory of Planned Behaviour (Ajzen, 1991), which suggests that attitude, subjective norm, and perceived behavioural control are more important than demographic factors, including gender, in predicting behaviour. This suggests that Abuja drivers may have similar attitudes toward distracted driving, similar levels of social acceptance of distracted driving, and similar levels of control over distractions while driving. This result is also corroborated by Maghelal et al. (2023), who found that self-efficacy and environmental conditions had a stronger influence than gender on driving behaviour among young adult drivers.

Vehicle Driver Type and Distracted Driving Behaviour

The results from showed no significant difference in distracted driving difference behaviour between commercial and private vehicle drivers in their distracted driving behaviour, suggesting that driving status does not significantly influence distracted driving behaviour. This implies that the likelihood of engaging in distracting activities while driving is not necessarily different between commercial and personal vehicle use. Instead, distracted driving seems to be a common behaviour problem shared by everyone, regardless of whether they are private , or whether they are a commercial drivers.

The results contradict the view in the literature that commercial drivers are more likely to be distracted because they need to meet daily financial targets and communicate with passengers or dispatch by phone. For example, Taiwo et al. (2024) found that commercial taxi drivers in Nigeria engaged in more risky driving behaviours related to economic pressures. However, this finding aligns with Dotse et al. (2019), who noted that shared behavioural norms, rather than the type of vehicle driven, influence distracted driving among commercial drivers in West Africa. Social Cognitive Theory (Bandura, 1986) may also help explain the result, as it

suggests that behaviours are learned and reinforced through observation and interaction with the social environment. Commercial and private drivers share the same road environment in Abuja and are constantly exposed to similar driving behaviours, such as other motorists using their mobile phones while driving, which makes them prone to similar distraction behaviours. Yan et al. (2022) also reinforced this, concluding that distracted driving behaviours were similar to those of the general driving population, not commercial drivers alone.

Time of Day and Distracted Driving Behaviour

The results of this study showed that drivers were much more likely to be distracted while driving during non-rush hours than during rush hours. This suggests that the time of day has an impact on drivers' distraction tendencies, as light traffic allows more time for secondary activities, like using a cell phone or performing other non-driving-related tasks. The high traffic volume and increased driving demands of rush hour, on the other hand, seem to demand more concentration and leave less time to engage in distracting behaviours.

This result aligns with the findings of Rendon-Velez et al. (2016), which found that time pressure and heavy traffic density enhance drivers' vigilance and reduce their involvement in other activities. Similarly, Song et al. (2021) determined that risky driving behaviours vary across times of day, and that lower traffic volume is associated with higher driver disengagement from driving. This finding can be explained by the Theory of Planned Behaviour (Ajzen, 1991), which states that perceived behavioural control varies depending on traffic situations. Under the pressure of rush-hour traffic, drivers may feel they don't have time for distracting activities. However, when there is less cognitive load, such as during non-rush-hour hours, multitasking may seem safe, which can increase the risk of distraction. Yao et al. (2026) also showed that drivers' behaviour varies depending on time pressure; when the driving task is less demanding, there are more opportunities to engage in secondary tasks.

Presence of Traffic Officers and Distracted Driving Behaviour

This study found that the presence of traffic officers in the car significantly reduced the likelihood of distracted driving behaviour. This suggests that traffic enforcement personnel are a key component of discouraging distracted driving. The findings indicate that drivers become more vigilant and less likely to engage in behaviours such as using a mobile phone or other distractions when they believe there is a higher chance they will be caught and punished for breaking traffic rules.

This result aligns with Sam (2022), who found that the presence of police officers had a positive effect on drivers' adherence to traffic laws in developing nations. It also aligns with Sam (2025), who noted that the presence of enforcement officers reduced the likelihood of distracted driving among Ghanaian drivers. This is well explained by Deterrence Theory (Gibbs, 1975), which holds that people will abide by rules if they believe there is a high chance of being caught and punished. The more visible traffic officers are, the more drivers feel confident they will be detected, which helps deter them from using their mobile phones and engaging in other distracting activities while driving. This is supported by the findings of Truelove et al. (2023), which showed that law enforcement and the public are aware of visible traffic enforcement as an effective strategy to reduce phone use while driving.

Joint and Interactive Association of Gender, Vehicle Driver Type, Time of Day and Presence of Traffic Officers on Distracted Driving Behaviour

Results of this research showed that, after controlling for gender, vehicle driver type, time of day, and traffic officers, the presence of traffic officers alone had a significant effect on distracted driving behaviour. The other variables were the only ones to contribute significantly to the model, independently of each other, with gender, vehicle driver type, and time of day not contributing significantly. However, there was a strong interaction between time of day and the presence of traffic officers, suggesting that traffic officers' effectiveness in reducing distracted driving varied across the day. This means that enforcement has either a stronger or weaker effect on drivers' behaviour depending on traffic conditions during rush hour and non-rush hour periods.

This result confirms the hypothesis that distracted driving is a multi-situational, multi-environmental phenomenon, not solely a function of individual factors. This aligns with Hasisi et al. (2024), who determined that the effectiveness of proactive traffic enforcement depends on context, including time and location. Likewise, Shajari et al. (2023) suggested that distracted driving is a complex behaviour shaped by the interaction of multiple behavioural and environmental factors. The observed interaction between time of day and traffic officer presence is also consistent with Social Cognitive Theory (Bandura, 1986), which states that behaviour is a product of the interaction between the individual and their environment. In this context, the deterrent effect of visible traffic officers is affected by situational factors such as traffic volume and driver vigilance at different times of day. This explanation is also corroborated by Hasan et al. (2022), who noted that factors contributing to distracted driving events include situational and enforcement-related factors, and by Zhang et al. (2023), who reported that drivers' self-regulatory behaviours are contingent upon the interaction between the demands of the driving task and external monitoring cues.

Conclusion

The aim of this study was to investigate how gender, vehicle driver type, time of day, and the presence of traffic officers influence drivers' distracted driving behaviour in Abuja. The results showed that distracted driving is not limited to any specific gender or driver type, as male and female drivers, commercial drivers, and private drivers had similar rates of distraction. Instead, situational and contextual factors, such as the time of day and the presence of traffic officers (who could be seen), seemed to have a more pronounced effect on the behaviour. Drivers were also more likely to be distracted when traffic officers were absent or when it was outside rush hour, highlighting the role of external and environmental cues in influencing driving behaviour.

The overall study results indicate that distracted driving behaviour in Abuja is more dependent on situational context and enforcement visibility than on specific demographic traits. The strong effects of time of day and traffic officer presence also suggest that enforcement strategies may not be equally effective across all conditions and should be targeted to specific times of day. The results contribute to extending the Theory of Planned Behaviour, Deterrence Theory, and Social Cognitive Theory to the study of distracted driving

in an urban setting in Nigeria and serve as an empirical basis for targeted road safety interventions.

Recommendations

1. Distracted driving is not a problem that affects only one gender, so road safety campaigns should not focus on one gender to the exclusion of the other.
2. Distraction has been identified among both commercial and private drivers, and enforcement and sensitization activities should be expanded to all types of drivers, not limited to commercial drivers.
3. Traffic authorities should step up monitoring and awareness campaigns, especially during non-rush hour, when congestion is less or road congestion lower and drivers are more likely to be distracted.
4. Traffic officers were clearly visible, and their presence deterred distracted driving, so more officers should be visible at strategic locations to maintain that deterrent effect.
5. Traffic officers' presence during the day varied in its deterrent effect, so the schedules should be adjusted to ensure adequate officer presence during times of day that have been determined to have higher distraction risk, especially during non-rush-hour periods.
6. Drivers and commuters should be educated more on safe driving practices.

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