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EFFECT OF GENDER AND DRIVER BEHAVIOR IN ROAD TRAFFIC CRASHES IN LAGOS STATE, NIGERIA

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ABSTRACT

Driver's behaviour is more complex when they are using the road. There are no universal guidelines for such behaviour. The research studied the effect of gender on driver behaviour in road traffic crashes in Lagos State. For data collection, a cross sectional research design was adopted. The data used in this study were collected from drivers in Lagos state through the use of a Driver Behaviour Questionnaire (DBQ) and Driver Skill Inventory (DSI), Survey between February, 2021 and March, 2022. Three thousand seven hundred (3,700) questionnaires were administered and 3,270 questionnaires were retrieved. The data generated were analysed using Chi-square tests, student't' test, analysis of variance (ANOVA) and the mann-whitney 'U' test statistics. These techniques were used to test the differences between male and female drivers on the driver behaviour (DBQ) and driver skill inventory (DSI) items. The study revealed that more than half of the studied drivers in Lagos State (66%) were men whereas (44%) were women. Also among the studied drivers, young drivers of the age group below 30 years (37.2%) were involved in accident crashes with a higher risk of involving in an accident. The analyses also showed that women reported a higher number of violations, and lapses. However, no significant association was found between male and female drivers in terms of errors. The results also showed that six (6) items of violations, three (3) items of lapses and three (3) items of error had significant association among male drivers as compared to female drivers in Lagos State. Based on the findings preventive measures are suggested to reduce the road accident crashes such as training and retraining of drivers, driver education, enforcement, seatbelts, speed limits etc.

Keywords: Gender; driver behaviour; accidents; socio-demographic; safety; preventive measures

Introduction

Road trashes is in 8th place among the causes of death in the world and remain a significant public health issue, where the role of gender is undeniable. Males are more often involved in road crashes than females while females represents 51% of the world's population, but only 24% of road deaths (WHO, 2009, 2019; European Commission, 2019). In addition, gender differences in the risk of fatal crashes are highly dependent on age. Young men under the age of 25 account for 73% of all road deaths and are three times more involved in road crashes than women (WHO, 2018). However, this gender gap decreases with age, being greater for drivers aged 16 to 39 (with male drivers 1.6 to 25 times more likely to be at risk than females drivers) than for drivers aged 40 to 59 (with an increased risk of 1.2 to 1.3 times for males) (WHO, 2018; Massie, et al, 1995). This gender gap disappears even among drivers over 60 years of age (Massie et al, 1995; Granie et al, 2019; Granie el al, 2021).

Road crashes are identified as one of the leading causes of death in Nigeria, especially among age groups 5 to 29 years. Though unfortunate, road accidents have become a normal and recurring incident in the country. In fact, hardly a day goes by without the news of a road traffic crash resulting in loss of lives and/or permanent disability (FRSC, 2020; Atubi, 2023). This road traffic crash, apart from insurgency and banditry, is among the leading causes of death in Nigeria. Again the year 2020 saw the highest death toll from road traffic accident (FRSC, 2020; NBS, 2020) (See Fig. 1).

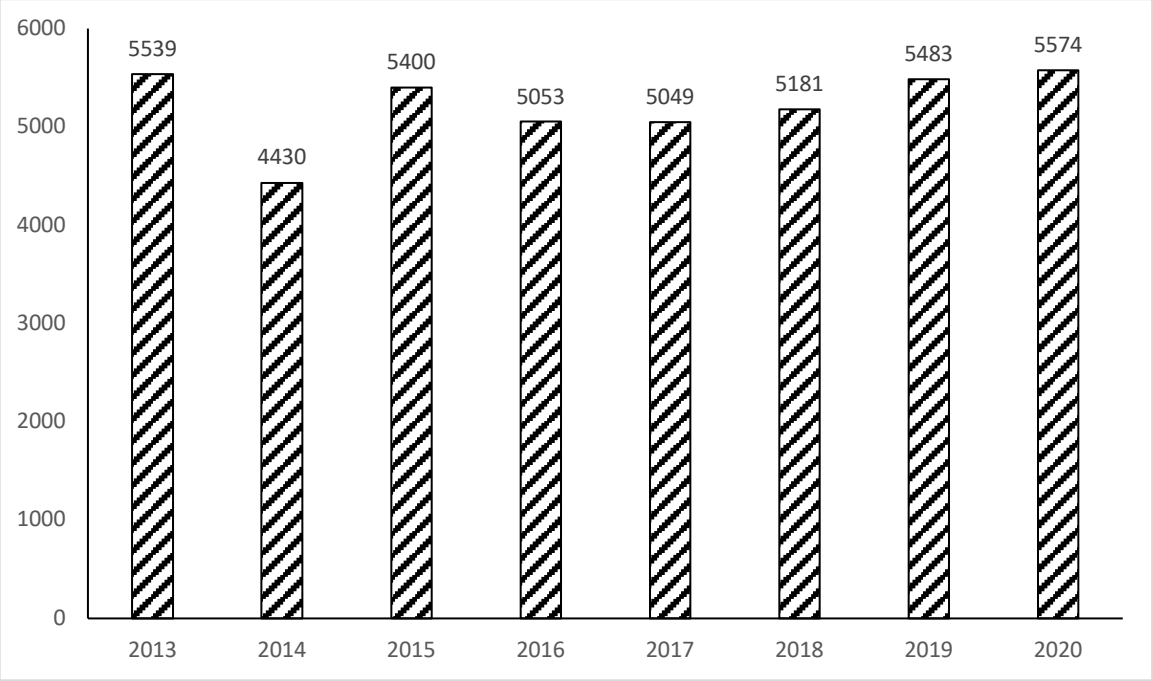

Fig. 1: Number of people killed by road accidents (2013-2020)
Sources: FRSC and NBS, (2020)

An analysis of the data shows that except for 2014, all other years recorded a minimum of 5,000 deaths annually in the period. It is well established in the literature that there exists a considerable difference in driving behaviour between male and female drivers (Santamarina et al, 2014; Mercier et al, 1997; Ma and Yan, 2014; Castro Nuno and Valpuesta, 2023). The notion that male drivers take more risk on the road and commit more driving infractions has consensus by researches and respondents as well. Female drivers, on the other hand, have been found to be more cautious in their driving behaviour (Massie et al, 1995; Akersted and Kecklund, 2001). Even with this difference in behaviour, a few researchers have concluded that the female drivers are more prone to harmful injuries and fatalities than the male drivers (Evans and Gerrish, 2001; Youssef et al, 2023).

Furthermore, according to other authors, men are involved in road accidents as a consequence of their violation of traffic laws (i.e. violations of speed limits and driving after drinking; Storie, 1977; Simon and Corbett, 1996; Harre et al, 1996; Sang et al, 2021) whereas women were involved in road accidents due to judgment errors (Storie, 1977). Gender has been considered in relation to risky driving behaviour in young drivers (Ulleberg and Rundmo, 2003; Teese and Bradley, 2008; Billah, 2022) and in general, it has been found that, in terms of risk behaviour in road traffic, males are more willing to take risks than female (Whissel and Bigelow, 2003; Oltedal an Rundmo, 2006), Yagil (1998) has reported that the rate of men's involvement in fatal road accidents is twice as high as women's.

Among demographic factors, age is another negative predictor of risky driving behaviour. It has been well established by studies and accident data bases from various countries that young novice drivers are more frequently involved in traffic accidents than drivers in other age groups (WHO, 2015; OECD, 2016, Islam and Mannering, 2021). In general, a variety of factors, such as inadequate skills and/or a greater propensity to assume more risk, have frequently been indicated as the main causes of accidents in this age group (Deery, 1999; Underwood, 2007; Giannini et al, 2013). Some studies found that young male drivers are more involved in road accidents (Arnett, 2002), aggressive driving (Simon and Corbett, 1996), and violation of traffic and road laws (Jonah and Dawson, 1987; Fletcher, 1995). However, more recent studies reports that females drivers are now over-represented in crashes compared to male, due to errors in yielding, gap acceptance, and speed regulation (Classen et al, 2012). Laapotti et al, (2001, 2003) found that although females have a greater safety orientation than males, young female drivers show more problems in vehicle handling and mastering traffic situations.

Road traffic accidents statistics in Nigeria reveal a serious and growing problem with absolute fatality rate and casualty figure rising rapidly. The majority of developing countries, accident occurrence and released deaths are relative to either population or number of vehicles. Ironically, in Nigeria, studies have indicated that an increasing number of accidents (Onakomaya, 1988; Gbadamosi, 2003; Atubi and Onokala, 2009; Atubi 2022) has accompanied better facilities in terms of good quality and standardized roads. This is contrary to the trends in countries where even the level of the sophisticated road network and the volume of vehicular traffic are higher

(Atubi, 2010a and 2015a). Nigeria loses about 80 billion naira annually to road accidents; of all subjects that are involved in road traffic accidents in Nigeria, 29.1 percent suffers disability and 13.5 percent are unable to return to work (Labinjo et al, 2010; Atubi, 2012a; 2020a and 2020b)

According to the latest WHO data publsihed in 2018; road traffic accidents deaths in Nigeria reached 40,061 or 2.07% of the total deaths. The age adjusted death rate 29.50 per 100,000 of population ranks Nigeria 41 in the world. Traffic situation in Lagos State is particularly chaotic; Lagos State is the business nerve centre of Nigeria. The traffic situation in Lagos is that bad because of the absence of effective transport planning, human – misuse, poor management route, inadequacy on the street parking, traffic congestion, delay and accident among other contributory factors. Metropolitan Lagos may be described as a major traffic attractor in Nigeria (Atubi, 2014, 2013b and 2013c). The trend of Nigerian female drivers has shown substantial increase over the past few years. So far, there has been no research carried out to study the differences in driving behavior, attitude and skills in Nigerian women when compared with men. Therefore, the objective of this research was to examine the differences in driving behaviour and performance with respect to gender and the effects on road traffic accident crashes.

Study Area

Lagos State is a suitable case study because it hosts metropolitan Lagos, Nigeria's major traffic centre, fastest growing city, and most heavily motorized urban area in the country. Consequently, the state has one of the highest accident and casualty rates in the country (Federal Republic of Nigeria, 1997, p. 6). Moreover, the traffic situation in Lagos State is bad because of the absence of effective planning, vehicle-misuse, poor management, inadequate street parking, traffic congestion, delays and accidents among other contributory factors.

Lagos State is situated in the South Western corner of Nigeria. This elongated state spans the Guinea Atlantic coast for over 180km, from the Republic of Benin on the west to its boundary with Ogun State in the east (figure 1), while Lagos State is the smallest in Nigeria, it has over 5 percent (i.e. 9,013,534) of the country's estimated 140 million people (National Population Census, 2006). Its rate of population growth has been in excess of 9 percent per annum, or 25,000 per month or 833 per day or 34 per hours in the last decade (Lagos urban Transport Project, 2002). This population increase has been accompanied by a corresponding increase in motor vehicles and traffic accidents. However, accident rates in Lagos State are still very much on the high side compared to other states in the federation. But, fatalities and non-survival indices for the state are on the decline. This is attributable to its high level of traffic congestion which reduces the probability of the high fatality accidents resulting from over speeding and accessibility to good post – crash medical care in the Lagos metropolitan area.

Method

Sampling Design

The study adopted a cross – sectional survey design of both qualitative and quantitative (empirical evidence). The design involves the use of the historical/archival data in road traffic crashes from the Federal Road Safety Corp (FRSC) and Lagos State general hospitals and administration of questionnaire. Data reported in this study were also collected from Lagos State drivers between February 2021 and March 2022. A multistage stratified cluster sampling was applied by using the established and recognized general hospitals in Lagos. The subjects were selected by a simple random sampling among patients who registered and attended the general hospitals. A total of 3,700 drivers were asked to participate in this study. These drivers were drawn from the population visiting the Lagos State general hospitals irrespective of the past history of road traffic crashes. In doing this, participants were assured of confidentiality.

Research Instrument

Driver Behaviour Questionnaire (DBQ) was used to measure deviant driver behaviours. Driver Behaviour Questionnaire (DBQ) have been validated in studies conducted by Nigerians (Arisabo and Atubi, 2023; Uzondu, 2019). The version includes aggressive and ordinary violations (12 items) lapses (7 items) and errors (8 items). Respondents were asked to indicate how often they committed each of the 27 behaviours in the previous year in a six – point scale (0 – never, 1 – hardly ever, 2 – occasionally, 3 – quite often, 4 – frequently and 5 – nearly all the time).

Method of Data Collection and Analysis

This method involves the driver skill inventory (DSI) in a 15 item self – reported measure of perception – motor developed by Lajunen et al (1998) and Arisabor and Atubi (2023). DSI was previously translated into English and had been shown to have good reliability and predictive validity in different western cultures. (Natulya and Reich, 2002). This instrument asked drivers to rate how weak or strong they were on the driver skills by using a five – point scale following carefully that of Bener and Crundall (2008). The DBQ and DSI along with socio-demographic

information such as (age, gender, marital status, educational level, occupation and income); driver history such as (driving experience, category of vehicle, frequency of seatbelt usage, reasons for not wearing seatbelt always, speed choice on different roads, traffic offences, history of crash and injury involvement) and other activities while driving like (eating, use of mobile phone, drinking alcohol and playing laud music) were collected by face to face interview. The analyses were performed using the statistical package for the social sciences (version 16). Chi-square tests, student't' test, analysis of variance (ANOVA) and mann-whitney 'u' test were used to test the differences between male and female drivers on the driver behavior (DBQ) and Driver Skill Inventory (DSI) items.

Findings and Discussions

A total of 3,270 drivers expressed their interest and consent to participate giving a response rate of 88%. The gender distribution of the participants was 1,120 women and 2,150 men and ages ranged from 18 to 65 years, with a mean of 30.3 and standard deviation of 10.6 years.

Table 1: Ages of Drivers

Ages	Respondents (Men)	n%	Respondents (Women)	n%
<20	162	7.5	100	9.0
20-29	488	22.7	672	60.0
30-39	800	37.2	148	13.2
40-49	400	18.6	120	10.7
≥50	300	14.0	80	7.1
Total	**2,150**	**100**	**1,120**	**100**

Source: Fieldwork, (2022)

Table 1, shows the ages of drivers by gender within Lagos State. In Lagos State, most of the female drivers were below the age group of 40 years and mean age of male drivers was 36.5 ± 10.6 compared with female drivers of age 30.3 ± 9.6 years with a probability level at <0.001. The ages of the drivers will certainly influence their likelihood to be involved in accidents as opined by Bener and Crundal (2008) and Arisabor and Atubi (2023) noting that young drivers show a tendency towards risks compared with older drivers. Young drivers are often considered novices with a lack of experience and are likely to commit driving offences and get into crashes (Decraen, 2010).

Table 2: Educational level of Drivers

Education	Respondents (Men)	n%	Respondents (Women)	n%
Illiterate	99	4.6	26	2.3
Primary	248	11.5	198	17.7
Secondary	736	34.2	373	33.3
Tertiary	1,065	49.7	523	46.7
Total	**2,150**	**100**	**1,120**	**100**

Source: Fieldwork, (2022)

Table 2, shows the educational level of drivers in Lagos State. In terms of educational level, Lagos male drivers had higher education than female drivers; 83.9% of Lagosian male drivers had at least secondary education or tertiary degree as compared with 80% of female with a probability of <0.001. This also implies that most of the drivers can read and write. Despite their educational status in Lagos state, they still do not keep to safety traffic rules. Education is fundamental to traffic safety (See Fig. 3).

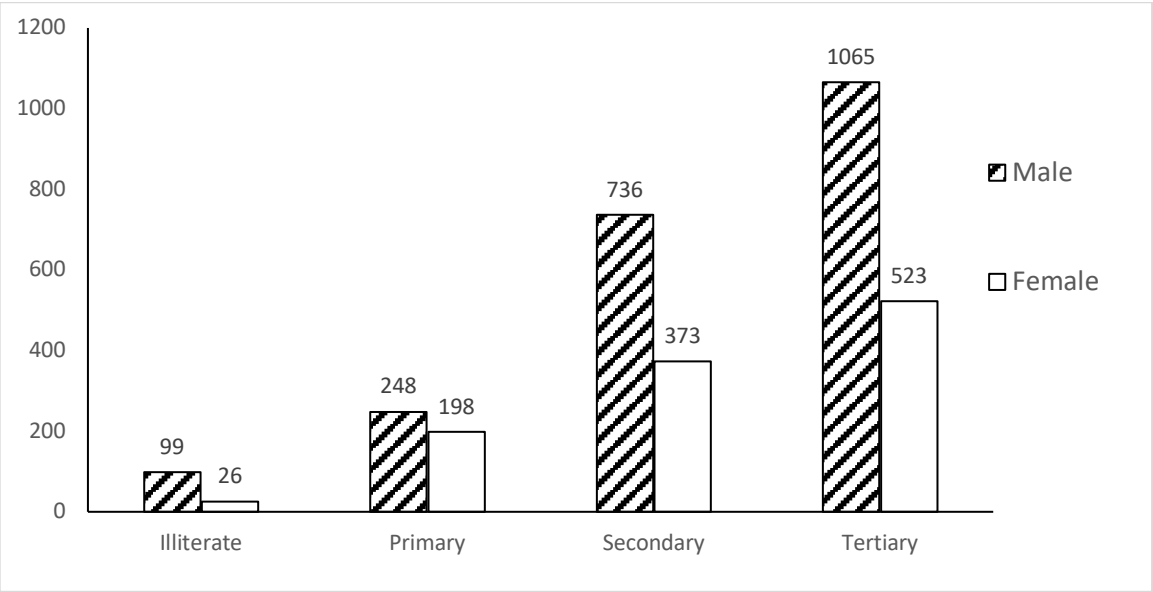

Fig. 3: Educational Status of male and female drivers in Lagos State

However, Fig. 3 shows the educational level of drivers in Lagos State in terms of gender. More male drivers have attained tertiary education than female drivers. This is an indication that since more male drivers are educated they are likely to be well learned on road traffic safety risks than female drivers in Lagos State.

Table 3: Use of Seatbelt

Seatbelt	Respondents (Men)	n%	Respondents (Women)	n%
Never	753	35.0	210	18.8
Some of the time	397	18.5	133	11.8
Most of the time	550	25.6	570.	50.9
At all times	450	20.9	207	18.5
Total	**2,150**	**100**	**1,120**	**100**

Source: Fieldwork, (2022)

Table 3, shows drivers who violate the use of seatbelts in Lagos State. It revealed that 35.0% of men drivers in Lagos State have never, used seatbelt compared with 18.8% of women drivers. Again 20.9% of male drivers use seatbelt at all times, while 18.9% of female drives in Lagos State use seatbelt at all times. This is however, not significant. This is an indication that men drivers use seatbelt more in Lagos compared with women drivers. This is significant at $P < 0.001$ (See Fig. 4).

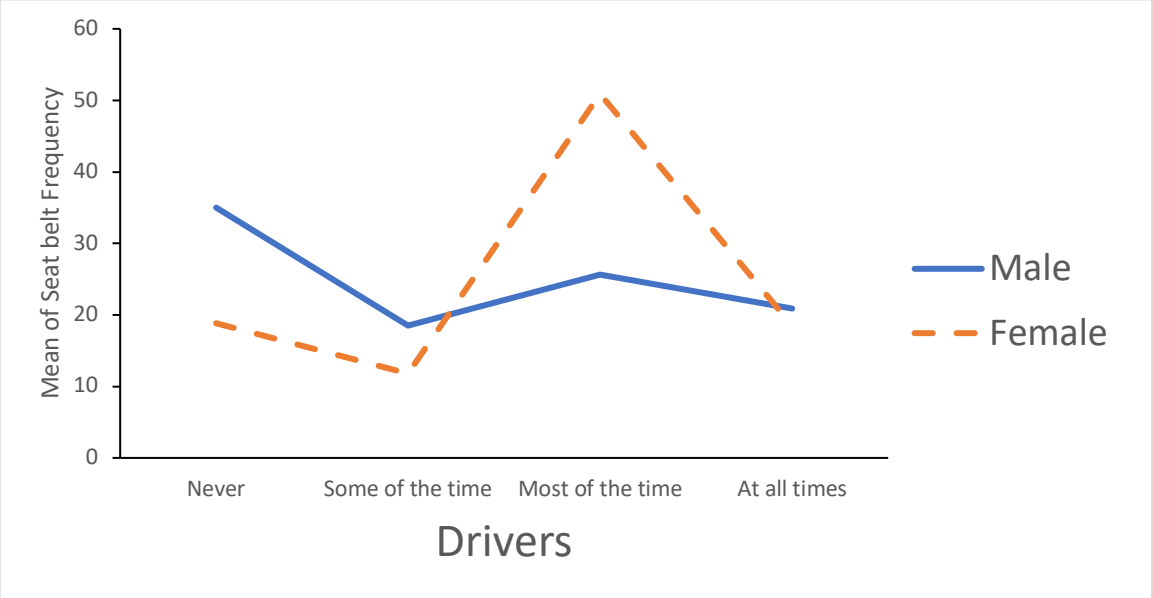

Fig. 4: Use of Seatbelt (n %) in Lagos State

Table 4: Excessive Speeding

Excessive Speeding	Frequency (Men)	n%	Frequency (Women)	n%
Yes	1,170	54.4	300	26.8
No	980	45.6	820	73.2
Total	**2,150**	**100**	**1,120**	**100**

Source: Fieldwork, (2022)

Table 4 shows drivers who indulge in excessive speeding in Lagos State. It revealed that 54.4% of men are involved in excessive speeding compared with 26.8% of women in Lagos State. This is an indication that excessive speeding due to road crash was also common among male drivers with high statistical significance (P < 0.001). Speeding decreases the chance to avoid a collision (Sevenson et al, 2012) (See Fig. 5).

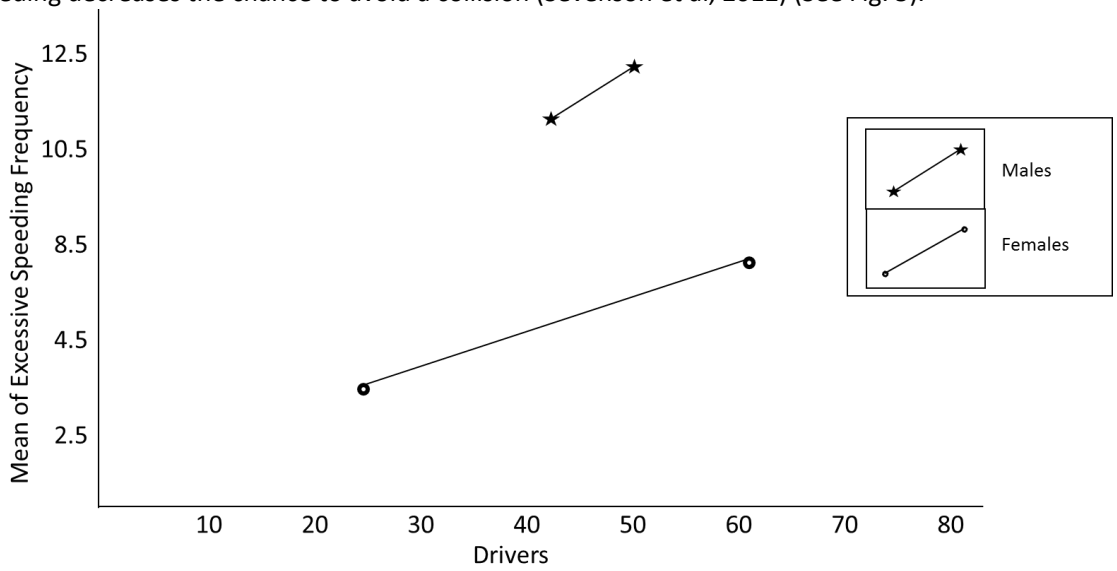

Fig. 5: Excessive Speeding (n %) in Lagos State

This is also an indication that women drivers in Lagos State tend to drive safely within the recommended speed limit. This also reduces the related risk of vehicular accidents (Atubi, 2006, 2012a & 2012b; Aaarts & Van Schagen, 2006; Olawole et al, 2022).

Table 5: History of Injury in a Road Crash

History of Injury	Respondents (Men)	n%	Respondents (Women)	n%
Yes	989	46.0	200	17.9
No	1,161	54.0	920	82.1
Total	**2,150**	**100**	**1,120**	**100**

Source: Fieldwork, (2022)

Table 5 shows drivers who had been involved or have history of injury in a road crash. It revealed that 46% of males had history of injury in a road crash compared with 17.9% of females. This is an indication that there are more males drivers with history of injury in road crash compared with female drivers in Lagos State with high statistical significance (P < 0.005).

Table 6: Vehicle Type Owned

Vehicle Type	Respondents (Men)	n%	Respondents (Women)	n%
Small car	1.526	71.0	624	55.7
Mini Bus	244	11.3	190	17.0
4WD	380	17.7	306	27.3
Total	**2,150**	**100**	**1,120**	**100**

Source: Fieldwork, (2022)

Table 6 shows the type of vehicle owned by drivers in Lagos State. It revealed that 71% of small car drivers owned by men were involved in road traffic accidents compared with 55.7% of small cars owned by female drivers

in Lagos State. This is an indication that drivers of small cars are more involved in traffic crashes than drivers of other vehicle types in Lagos State (See Fig. 6).

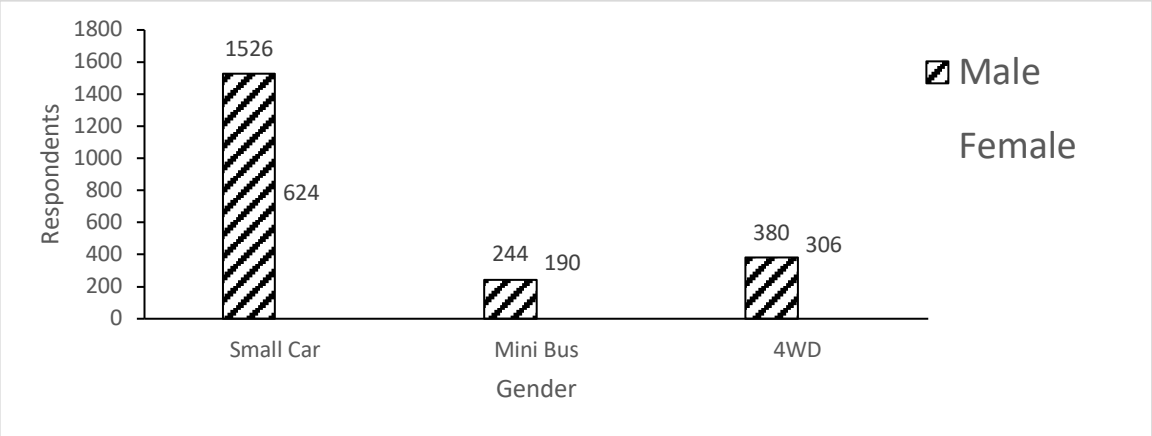

Fig. 6: Vehicle Type Owned by Men and Women Drivers in Lagos

However, table 7 shows the mean violations errors and lapses by gender in Lagos State. The table showed that women exhibited higher mean scores of violations such as crossing a junction knowing that the traffic lights have already turned red, disregard to speed limits, remain in a motor lane that will be closed ahead until the last minute before forcing themselves into the right lane and sounding of horn to show annoyance to another driver. For errors, there were wrong overtaking, failure to check rear view mirror before pulling out of a change lane and applying sudden brake common among female drivers in Lagos State. For lapses, female drivers in Lagos State were more involved in lapses like getting into the wrong lane when approaching a junction, due to stress they tend to forget where they left their car, and suddenly hit something while reversing that they did not see before. All these had significant association between men and women drivers in Lagos State (See Table 7).

Table 7: The Mean Violation Errors and Lapses on the DBQ Scale According to Gender

Variables	**Mean n = 2,150 Mean ± SD**	**Mean n = 1,120 Mean ± SD**	**P**
Violations			
Drive especially close to the car in front as a signal to its driver to go faster or get out of the way	1.6 ± 1.7	1.7 ± 1.4	N.S
Cross a junction knowing that the traffic lights have already turned red	1.6 ± 1.5	1.7 ± 1.0	0.005
Excessive speed at night or early in the morning	1.9 ± 1.6	1.7 ± 1.6	0.010
Excessive speed on a motorway	1.5 ± 1.6	1.7 ± 1.3	0.002
Hostile to some class of road users and indicate your hostility by any means possible	1.4 ± 1.6	1.5 ± 1.2	NS
Impatience with a slow driver and over take on the right side	2.1 ± 1.9	1.9 ± 1.8	NS
Unofficial race with other drivers on the road	1.5 ± 1.6	1.7 ± 1.6	NS
Angered by another driver's behavior, you then chase after him to insult him.	1.6 ± 1.6	1.5 ± 1.4	0.002
Sound your horn to show your annoyance to another driver	1.8 ± 1.7	1.6 ± 1.4	0.030
Drinking and driving	1.7 ± 1.4	1.5 ± 1.3	NS
Remain in a motor lane that will be closed ahead until the last minute before forcing your way into the right lane	1.5 ± 1.6	1.6 ± 1.2	0.003
Errors			
Wrong overtaking	1.5 ± 1.7	1.7 ± 1.4	0.001
Narrowly avoid colliding with traffic having right of way	1.5 ± 1.6	1.7 ± 1.3	NS

Fail to notice pedestrians are crossing when trying to enter a street from the motorway	1.5 ± 1.4	1.5 ± 1.3	NS
Under estimate the speed of another vehicle while trying to overtake	1.5 ± 1.4	1.6 ± 1.6	NS
Fail to check your rear – view mirror before pulling out of a changing lane	1.5 ± 1.5	1.4 ± 1.3	0.001
Apply sudden brake	1.4 ± 1.5	1.3 ± 1.4	0.005
After queuing to turn right you almost hit a car in front of you	1.6 ± 1.6	1.7 ± 1.5	NS
Lapses			
Get into the wrong lane when approaching a junction	1.2 ± 1.4	1.5 ± 1.2	0.001
Misread signs and exit from the wrong road	1.7 ± 1.6	1.8 ± 1.5	NS
Due to stress you forgot where you left your car	1.4 ± 1.5	1.5 ± 1.2	0.016
Sudden hit something while reversing that you did not see before	1.3 ± 1.5	1.5 ± 1.2	0.001
Drive away from the traffic lights	1.6 ± 1.5	1.5 ± 1.4	NS
Intend to drive to destination A and all of sudden you find yourself in destination B	1.4 ± 1.6	1.5 ± 1.4	NS
Switch on music while you actually meant to switch on the wiper	1.8 ± 1	2.1 ± 1.6	NS

Note: NS = Not Significant

Table 8 shows the comparison of driving skills by gender in Lagos State. It is observed that eight driving skill items showed statistically significant differences been men and women drivers in Lagos State such as impatient with other drivers, performance in critical situation, predicting traffic situations ahead, overtaking at curves, lane changing in heavy traffic, fast reactions, maintaining normal recommended speed and careless parking in a narrow gap.

Table 8: Comparison of Driving Skills by Gender

Variables	Men (n = 2,150) Mean ± SD	Women (n = 1,120) Mean ± SD	P
Driving Skills (Mean ± SD)			
Impatient with other drivers	2.0 ± 1.4	1.9 ± 1.4	0.038
Performance in critical situation	2.2 ± 1.3	2.1 ± 1.2	0.039
Predicting traffic situations ahead	1.9 ± 1.4	1.8 ± 1.4	0.008
Driving calmly and carefully	2.2 ± 1.4	2.1± 1.4	NS
Be preemptive in particular traffic situation	2.2 ± 1.3	2.2 ± 1.5	NS
Overtaking at corves	1.9 ± 1.4	1.7 ± 1.4	NS
Lane – changing in heavy traffic	2.0 ± 1.4	2.2 ± 1.3	0.050
Fast reactions	1.9 ± 1.3	1.9 ± 1.4	0.004
Show consideration for other road users	1.9 ± 1.4	1.9 ± 1.4	NS
Maintaining normal speed	1.8 ± 1.4	1.9 ± 1.4	0.070
Avoid unnecessary risks	2.1 ± 1.4	2.1 ± 1.3	NS
Careless parking in a narrow gap	2.1 ± 1.3	1.9 ± 1.4	0.010
Keep a reasonably following distance	1.8 ± 1.3	2.0 ± 1.5	NS
Avoid competing in traffic	2.0 ± 1.4	2.1 ± 1.4	NS
Remain calm in legitimate move right when necessary	2.1 ± 1.3	2.0 ± 1.5	NS

Note: NS = Not Significant

It was also observed that when history of accidents was assessed, women drivers were more likely to involve in parking accidents, pedestrian accidents and rear-end collision accidents with a high statistically significant difference. However, it was also observed that even though most of the men drivers in Lagos State were involved in lone accident, overtaking and 'T' junction accidents, they did not show any statistically significant difference when compared to women drivers in Lagos State (See Fig. 7)

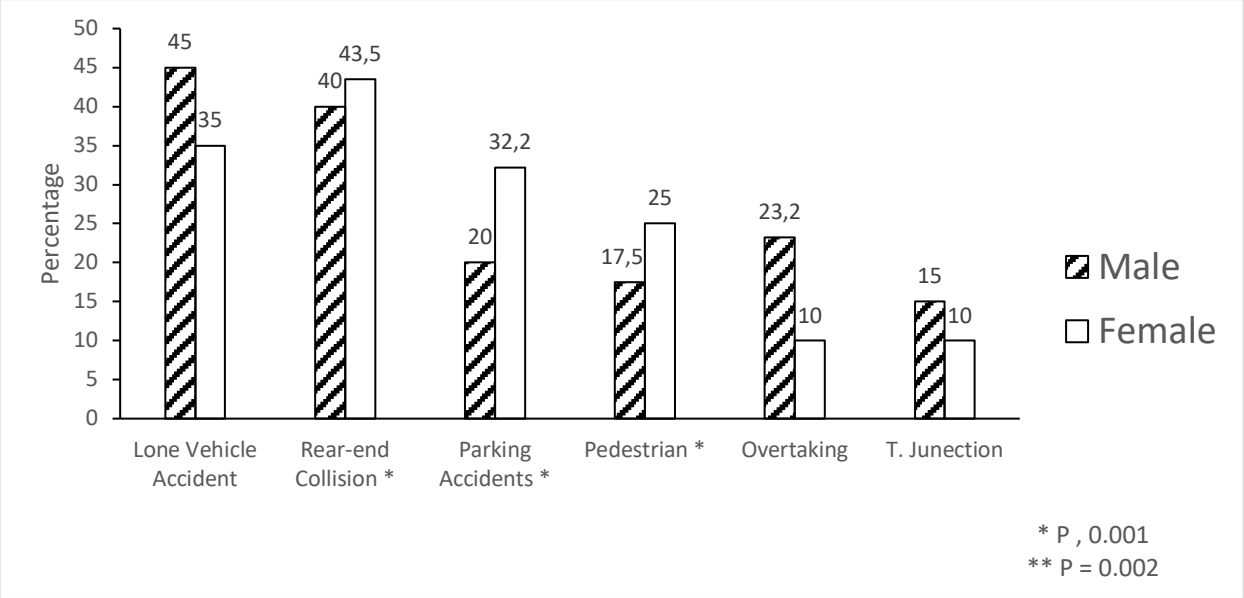

Fig. 7: History of Accidents with Injury according to Gender

This study has examined the differences in driving behaviour and driving skills among men and women drivers in Lagos State in relation to road accident crashes. Among the studied drivers, young drivers of the age group below 30 years (37.2%) were involved in accident crashes with a higher risk involving in an accident. Studies have shown that young drivers are at a higher risk of crashing than drivers of older age groups for reason such as attitudes and risk – taking behaviour (WHO, 2015; OECD, 2016; Arisabor and Atubi, 2023). This view about young drivers in Lagos State is also a global problem. Moreover, a significant association was found between drivers who had accident crashes in Lagos State and those who did not with respect to gender, education and type of vehicle owned.

Furthermore, studies on the influence of gender on road accidents showed that men accident rates were significantly higher than female accident rates (Ulleberg and Rundmo, 2003; Teese and Bradley, 2008; Oltedal and Rundmo, 2006). This however, corroborate this study that 66% of the studied respondents were male drivers. Male drivers reported accident crashes nearly three times as much as female drivers in Lagos State. Amongst the drivers who did not involve in accidents, the number of men was only one time that of female drivers. Inspite of that this shows that male drivers in Lagos State are more prone to accident involvement.

Unfortunately, the reported number of deaths from road traffic accidents in Lagos State in the last five decades showed that 94.8% of the deaths from road traffic accidents (RTAs) can be attributed to recklessness on the part of drivers in terms of over speeding (Atubi, 2012q). It is observed in this study that speeding Lagos drivers were more likely to be involved in accidents. Also, the frequency of the drivers who exceeded the stipulated speed limit was higher in drivers who had accidents than those who did not. Nevertheless, there are many variables that can influence a driver's behaviour, though researchers are most often concerned with those variables that can cause errors of judgment, which can increase the risk of traffic accidents. Human behaviour is thought to be a major factor in most accidents. The human factors constitute about 80% of the cause of road traffic accidents recorded in Nigeria and Lagos State in particular (Atubi, 2020 and Atubi, 2022).

The behaviours that had a mean value of 2.0 in Lagos State were that male drivers become highly impatient with slow drivers and careless parking in a narrow gap and female drivers switched on music when they actually meant to switch on something else. The results showed that six items of violations, three items of lapses and three items of error had significant association with accident involvement. Violations are defined as deliberate deviations from those practices believed are necessary to maintain the safe operation of a potentially hazardous system (Bener and Crundall, 2008).

The study also showed that women reported a higher number of certain violations and lapses. However, more recent studies report that female drivers are now over-represented in crashes compared to males, due to errors in yielding, gap acceptance, and speed regulations (Classen et al, 2012). The mean scores for two items of errors were similar in male and female drivers in Lagos State and women drivers in Lagos State had higher mean values for three items of errors like wrong overtaking; narrowly avoid colliding with traffic having right of way and after queuing to turn right almost hit a car in front of you.

It was also observed in the study that, some driving skill items like 'impatient with other drivers', 'performance in critical situation', 'predicting traffic situations ahead', 'overtaking at curves', 'lane-changing in heavy traffic', 'fast reactions', 'maintaining normal speed', and 'careless parking in a narrow gap' indicated statistically significant differences between men and women drivers in Lagos State. Earlier studies have indicated that driving skills were positively associated with the number of accidents, penalties and the level of speed (Natalya and Reich, 2002.

Analysis of Variance (ANOVA) was used to ascertain the variations among age groups. The result showed that for the two factors age groups and gender (sex) at the 1% significance level are statistically significant. The result indicate that male and female accident rate differences are significant.

Policy Implications

Based on the observations, the following preventive measures are recommended:

1. *Training and Retraining*

The training and retraining of drivers constitute a formidable means of effectively dealing with the issue of road traffic accident reduction. The road traffic system itself is dynamic in nature. Therefore, the training and retraining of operators of vehicles is a sine qua non if the operators are to develop, retain, and display skills that match the demands imposed on them by constantly changing characteristics of the system.

2. *Education*

These are measures aimed at children, particularly through schools and parents to instill ideas of good road behaviour. The educationist should be responsible for incorporating traffic education into the curricular of primary and secondary school systems as well as seeing to the establishment, accreditation and supervision of driving schools, and nation-wide organization of defensive driving courses, which had been found most useful in reducing accident rate among all classes of drivers.

3. *Enforcement*

For historical and operational convenience, road traffic law is enforced by the Federal Road Safety Commission whose activities have been limited through insufficient resources for checking speed violation, careless and dangerous driving and parking offences (Atubi, 2006). Laws and regulations may carry little force if the probability of detection and perception of detection are so low that they can safely be ignored; with the present situation the chances of getting caught in a traffic violations are remarkably small.

4. *Investigation*

The proper investigation of accidents is yet another rather effective means though remote of achieving some reduction in accidents. The hypothesis here is that a driver, who is well aware that the extent of his fault is an accident would be revealed by thorough investigation, is more likely to be careful. Atubi (2006) has pointed out that there is never one sole cause of any type of accident; many factors come together to contribute jointly to the event of an accident happening.

5. *Maintenance*

Maintenance in all its ramifications is one of the most effective preventive measures that any individual or organization can take to maximize the output of his/its accident reduction/prevention programme. Any maintenance programme which is expected to make a meaningful and sufficient impact must, of necessity, address three major aspects namely the road network, the vehicle, and the driver.

6. Seatbelts

No matter how well you will drive, there is always a chance that you will be involved in an accident. You cannot predict when it may happen. From statistical analysis of road traffic accidents in Nigeria since independence, the chances that one will be injured in an accident in his life time is 1:3; that he may be killed in an accident is 1:9. The best protection inside the vehicle is the use of seat belts (Federal Road Safety Commission Highway Code, 1997). Similarly, the use of seat belts in Nigeria was optional, hence many vehicles are not fitted with seat belts. In those that have them, they are not being utilized by drivers and passengers alike. But currently, the Federal Road Safety Commission has made the use of seat belts compulsory to all motorists with effect from July 1st 2005. In most developed nations especially Britain, a lot of money has been sunk into the implementation of the use of seat belts. The seat belt is an example of an active intervention for occupants because it requires some action on the part of the users. Its effectiveness in preventing injury and death in motor vehicle collisions has been well established by many earlier research studies.

7. Speed Limits

Drivers often think that the faster they drive, the more they impress themselves and others. They fail to realize that anybody's tyre can get burst. That accidents at high speed are more disastrous than accidents at low speed. That the vehicle is a machine and can fail at any time. At 100kmph, your vehicle moves at 28 metres per second, just imagine where you could be in only one second if you veer off the road which is usually less than 12 metres

wide. (Federal Road Safety Commission Highway Code, 1997; Atubi, 2020b). The Federal Road Safety Commission also imposed speed limit for all categories of vehicles i.e. 100kmph maximum speed for all private cars, 90kmph for commercial vehicles and 60kmph for trucks. Common sense often dictates the use of lower speed limits. Speeding on highways is a major cause of traffic crashes. The effect of speed on causing traffic related crashes, injuries and deaths has been documented in many settings (Farmer et al, 1999; Posada et al, 2000). For example, the 1995 repeal of the United States national maximum speed limit, allowing states to raise interstate speed limits, resulted in a 15% increase in fatality in 24 states that raised speed limits. In Adelaide, Australia the risk of severe crash involvement was found to increase as vehicles speed increased (Moore et al, 1995). In fact, the over 20% reduction in traffic crashes and deaths in Brazil has been partly attributed to speed limits which have been posted on many roads since 1998 (Polidefigueiredo 2001).

8. Traffic Control by Signs

A thorough knowledge of traffic signs, signals, road and markings together with signals by authorized traffic officers are to ensure a smooth and safe traffic flows. You must know them and be able to recognize them immediately. In the case of regulatory signs such as stop at intersection, stop at police, stop highway survey, no left turn, no right turn, No "U" turn, No entry for lorries, no waiting, etc., you must obey them without hesitation.

Conclusion

Although mortality from road traffic accident crashes is known to be higher in males especially among young drivers than female drivers in Lagos State. Traffic violations are considered as intentional deviations from practices that are crucial to maintaining safety while driving. These violations are commonly referred to as significant factor in causing traffic accidents. Thus, it can be deduced that gender is a significant variable influencing traffic accidents. A large body of evidence supporting this clam can be found in various statistical findings that are widely described through the literature, based on data from traffic accidents.

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