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THE ROLES OF ROAD SAFETY EDUCATION PROGRAMMES IN REDUCING ROAD ACCIDENTS IN LAGOS STATE, NIGERIA

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ABSTRACT

The rise of road accidents in Nigeria, especially in Lagos state, leading to injuries, deaths, and economic losses, is a serious concern. Due to this high casualty rate, the Lagos State government developed and exposed drivers to road safety education programmes to address the reckless behaviour of commercial drivers. In light of this, the study examined the roles of road safety education programmes in reducing road accidents in Lagos State. Three research objectives were posed and three hypotheses were tested to guide the study. The study adopted a descriptive survey research design. While Krejci & Morgan's (1970) sample size determination table was used to determine the sample size, stratified random sampling technique was used to select 370 respondents. Structured questionnaire was used to collect data for the study. Hypotheses were analysed using inferential statistics of regression analysis at 0.05 level of significance. The study revealed that road safety education programmes make a meaningful contribution to improving road safety outcomes; and emergency first responder education programmes do not significantly enhance the professionalism of commercial bus drivers in Lagos State. The study concludes road safety education programmes such as public enlightenment and campaign programmes provide strong validation for road safety education as a core road safety strategy. Based on the findings, it was recommended, among others, that the Lagos State Government, through the Ministry of Transportation and Lagos State Traffic Management Authority (LASTMA), should establish a mandatory, integrated professional development framework for all commercial bus drivers.

Keywords: Commercial Bus Drivers, LASTMA, Road Safety Education Programmes, Road Accidents

Introduction

Road Traffic Accidents (RTAs) remain a major global concern, claiming about 1.19 million lives annually and injuring over 50 million people, with an estimated economic loss of USD 518 billion per year (WHO, 2021). The World Bank (2022) identifies RTAs as a leading cause of death among individuals aged 15–29. Despite having only 54% of the world’s vehicles, low- and middle-income countries account for 90% of global road fatalities. Projections indicate that by 2030, road traffic accidents may cause 13 million deaths and 500 million injuries, particularly in developing regions of sub-Saharan Africa, including Nigeria (WHO, 2021).

Developed countries such as the United Kingdom and Norway have achieved significant reductions in road accidents through structured safety education and enforcement programmes (Atubi, 2022). In contrast, many developing countries show weak commitment to road safety management, resulting in chaotic and hazardous road accidents (Global Status Report, 2022). Nigeria, especially Lagos State, is among the worst affected, with an estimated 32 traffic deaths per 1,000 people (WHO, 2021) and 230 accidents per 10,000 vehicles National Bureau of statistic (NBS, 2019). The statistics sharply contrast with the United States’ 1.6 deaths and 2.7 accidents per 10,000 vehicles. This disparity reflects inadequate road safety knowledge, indiscipline, and poor transport management systems in Nigeria (FRSC, 2019). In the same vein, Lagos state recorded 39,141 accidents within five years 2015-2020, resulting in 10,132 deaths and 18,927 injuries, this largely attributed to reckless driving and poor road user attitudes (Atubi, 2022).

Addressing these challenges, various interventions have been introduced through engineering, enforcement, and education. The Federal Road Safety Commission (FRSC) was established in 1988 to reduce accident rates nationally. However, traffic management remains a serious issue, especially in Lagos state, due to its population density and poor transport systems. Before 1999, Lagos state experienced severe vehicular congestion and neglect, with 224 vehicles per kilometer compared to Nigeria’s average of 15 and New York’s 24 (Olagunju, 2019). Commuters often faced long travel times, worsened by rain and unruly driving behaviors. Rapid urbanisation and motorisation without a corresponding road network expansion further worsened traffic safety.

In response, the Lagos State Government established the Lagos State Traffic Management Authority (LASTMA) to restore order, reduce road accidents, and promote compliance with traffic laws. LASTMA's objectives emphasise education programmes and awareness creation to enhance road safety, build driver professionalism, and improve collaboration with transport unions. Chetty, Simelane, Mofokeng, and Kosa (2023) posited that informed road users are more likely to understand traffic rules, interpret road signs, and act responsibly, while Atubi (2022) noted that 90% of accidents stem from driver errors linked to poor literacy levels, ineffective safety education programmes, and negligence.

Road Safety Education (RSE) is a lifelong process of acquiring knowledge, skills, and attitudes to ensure safety on the roads. LASTMA implements multiple road safety education programmes targeting commercial bus drivers among which include: Road Safety Education Programmes (RSEP), traffic Laws and Regulations Awareness, Defensive Driving Education, Route Familiarization, Road Signs and Codes Education, Regular Driver Improvement Programmes (REDIP), Vehicle Maintenance Training, Public Enlightenment Campaigns, Highway Code Education and Special Marshal-led Safety Education programmes (LASTMA, 2020). This also aligns with the 2030 Sustainable Development Goal of halving free global road deaths and injuries (FRSC, 2020).

LASTMA activities also leverage social media and collaborations with the Lagos State Ministry of Transportation for advocacy, while organising safety education sessions at motor parks and on media platforms (LASTMA, 2023). The flagship component, the Public Enlightenment and Education Campaign, operates on the principle that "Traffic Management is Dynamic", hence the need for continuous education. The agency also frequently conducts rallies at markets, motor parks, and other public areas to discourage unsafe practices and encourage safe driving.

Collaboration with corporate bodies, NGOs, and institutions has strengthened LASTMA's educational reach. LASTMA partners with ExxonMobil-NNPC, Rotary Clubs, and faith-based organisations that provide sponsorship and professional support, making LASTMA programmes more engaging and impactful. Again, the Road Safety Initiative (RSI) group has conducted regular driver education programmes and public campaigns in collaboration with LASTMA and the Special Traffic Mayor Directorate for over a decade, focusing on responsible

driving behavior. The Defensive Driving Education component trains drivers to anticipate and respond to road hazards through awareness, anticipation, and adherence to safety principles (Chetty, et al., 2023). Similarly, Road Traffic Signs Awareness Education equips drivers with the knowledge to interpret and obey road signs, enhancing compliance and reducing crashes (FRSC, 2018).

Importantly, LASTMA's education programmes and training are free and flexible, accommodating drivers' schedules and locations to encourage participation. However, despite these initiatives, recklessness and non-compliance among commercial drivers persist, manifested in behaviours such as drunk driving, disregard for signs, and violation of traffic rules, resulting in continuing high accident rates and loss of lives and property. Investigating the roles of road safety education programmes will expose various concerned stakeholders in the transportation sector to the importance of road safety education programmes in reducing road accidents and enhancing users' overall safety.

Statement of the Problem

It is worrisome that despite the Lagos State road safety education and training programmes aimed at supporting the commercial bus drivers, there is a growing concern about the increasing rate of road accidents in Lagos State. Ignorance is still rife among the commercial bus drivers. While road safety education programmes are designed to improve road users' knowledge, attitudes, and behaviours, there appears to be a disconnect between the delivery of these educational initiatives and their practical positive effects on accident reduction. Poor compliance with traffic regulations continues to pose significant challenges to road safety in Lagos State. Moreover, the numbers of drivers and vehicles are increasing every day, creating more challenges particularly in the metropolitan area.

Though road safety education programmes are being given regularly to the commercial bus drivers in Lagos State, 5,421 lives were lost to road accidents in 2024 (FRSC, 2025). Also, the Nigerian Bureau of Statistics (NBS) revealed that in the second quarter of 2024, the reported number of road accidents were 2,404. The causes of these accidents are mainly attributed to ignorance and carelessness of the drivers who seem not to understand what the road signs are, and also find it difficult to obey the traffic rules and regulations. This gap in knowledge

hampers the optimisation of resources and the development of more targeted and effective road safety education programme strategies.

An examination of available studies on road accidents shows that not much attention has been given to the important roles road safety education programmes play in the reduction of road accidents in Lagos state. Hence, the need to examine the roles of existing road safety education programmes in reducing road accidents in Lagos State, Nigeria.

Purpose of the Study

The purpose of the study is to examine the roles of road safety education programmes in reducing road accidents in Lagos State. Specifically, the study;

- i. determine how public enlightenment and campaign programmes reduce road accidents among commercial bus drivers in Lagos State, Nigeria.
- ii. investigate how road traffic laws and regulation awareness programmes reduce road accidents among commercial bus drivers in Lagos State, Nigeria.
- iii. determine the extent to which the emergency first responder education programme has reduced road accidents among commercial bus drivers in Lagos State, Nigeria.

Research Hypotheses

The following research hypotheses are raised and tested:

- i. Public enlightenment and campaign education programmes will not significantly reduce road accidents among commercial bus drivers in Lagos State, Nigeria.
- ii. There will be no significant influence of road traffic laws and regulation awareness training programmes on reducing road accidents among commercial bus drivers in Lagos State, Nigeria.
- iii. Emergency first responder education programmes will not significantly reduce road safety accidents among commercial bus drivers in Lagos State, Nigeria.

Research Methodology

This research adopts descriptive survey research design, which allows the researcher to survey the opinions of people on the issue at hand without manipulation to provide a better understanding of the research problems. Lagos State is an ideal location for this study because of the population of road users to propagate the importance of road safety education programmes instituted by the state government. The population of the study comprises all motorists in Lagos state. However, the target population consists of 11,679 commercial bus drivers who have participated in the LASTMA road safety education programmes in 2024 across the registered motor parks in Lagos State Local Government Areas (LGAs), as shown in Table 1.

Table 1

Number of Commercial Drivers who Participated in LASTMA RSE in 2024

S/N	Senatorial District	Selected LGA	Motor Park used by LASTMA	Total number of drivers that attended RSE programmes in 2024
1	Lagos Central	Lagos Island	Obalende Park	1,141
		Surulere	Ojuelegba	976
		Apapa	Mile 2 motor park	1,020
2	Lagos West	Oshodi-Isolo	Oshodi Terminal 2	2,031
		Alimosho	Iyana-ipaja	2,166
		Mushin	Mushin motor Park	1,031
3	Lagos East	Ikorodu	Ikorodu cental Park	1,231
		Kosofe	Ketu Park	1,171
		Shomolu	Jibowu Garage	912
		Total		11,679

Source: Field survey, 2024

Krejci and Morgan's (1970) sample size determination table was used to determine the required sample size of 370 based on the target population of 11,679. A stratified random sampling technique was adopted to select 370 respondents from the target population. This allows the researcher to select respondents according to the population size in each motor park of the LGAs, as shown in Table 2.

Table 2

Selected Respondents from the Motor Parks in the LGAs

S/N	Senatorial District	Selected LGA	Selected Motor Park	Total numbers of drivers	Sample size calculation (proportionate)	Sample size
1	Lagos Central	Lagos Island	Obalende Park	1,141	$1,141/11,679/x\ 370$	36
		Surulere	Ojuelegba	976	$976/11,679/x\ 370$	31
		Apapa	Mile 2	1,020	$1020/11,679/x\ 370$	32
2	Lagos West	Oshodi-Isolo	Oshodi Terminal 2	2,031	$2,031/11,679/x\ 370$	64
		Alimosho	Iyana-ipaja	2,166	$2,166/11,679/x\ 370$	69
		Mushin	Mushin motor Park	1,031	$1,031/11,679/x\ 370$	33
3	Lagos East	Ikorodu	Ikorodu central Park	1,231	$1,231/11,679/x\ 370$	40
		Kosofe	Ketu Park	1,171	$1,171/11,679/x\ 370$	37
		Shomolu	Jibowu Garage	912	$912/11,679/x\ 370$	29
		Total		11,679	370	370

(Researcher Computation, 2024)

The research instrument for data collection is a structured questionnaire titled “Road Safety Education Programmes and Accident Reduction Questionnaire” (RSEPRARQ), designed to obtain information from respondents who had participated in the road safety education programmes of LASTMA. A 4-point modified Likert scale was adopted for the questionnaire, and items were drawn on response mode categorised as: Strongly Disagree, Disagree, Agree, and Strongly Agree. Data collected were analysed using inferential statistics. The hypotheses were tested using simple linear regression at .05 level of significance with the aid of statistical Package for Social Sciences (SPSS). Data collection, coding, and analysis were obtained from a total sample of 355 respondents out of 370, which gives 93% response rate.

Results

Hypotheses Testing

Hypothesis One: Public enlightenment and campaign education programmes will not significantly reduce road accidents among commercial bus drivers in Lagos State, Nigeria.

Table 2: Regression Analysis Results of the Relative Influence of Public Enlightenment & Campaign Education Programme on Road Accidents of Bus Drivers

Model summary

R = .416^a

R² = .173

R² (Adjusted) = .164

Standard Error of Estimate = .353

F = 18.323, P < 0.05

Model	Unstandardized		Standardized		Sig.	Remarks
	Coefficients		Coefficients			
	B	Std. Error	B	T		
1 (Constant)	1.567	.222		7.054	.000	Significant
PECP	.106	.039	.141	2.738	.006	Significant

a. Dependent Variable: Reduction of Road Accidents

b. Predictors: (Constant), Public enlightenment and campaign education programme

The analysis in Table 2 reveals statistically significant findings that lead to the rejection of the null hypothesis. The model summary shows a correlation coefficient of R = .416, indicating a moderate positive relationship between the predictor variable (public enlightenment and campaign education programmes) and the dependent variable (road accident reduction among commercial bus drivers). The R² value of .173 indicates that approximately 17.3% of the variance in road accident reduction among commercial bus drivers can be explained by public enlightenment and campaign education programmes. While this may appear modest, it represents a meaningful contribution, as road accident reduction is influenced by multiple factors beyond just educational programmes. The adjusted R² of .164 accounts for the number of predictors in the model and provides a more conservative estimate of explanatory power. The standard error of estimate of .353 indicates the average deviation of observed values from the regression line, suggesting reasonable prediction accuracy.

The F-statistic of 18.323 with p < 0.05 demonstrates that the overall regression model is statistically significant, meaning the model fits the data significantly better than a model with no predictor variables. This confirms that public enlightenment and campaign education

programmes do have a measurable influence on road accident reduction.

Examining the regression coefficients, the constant term has an unstandardized coefficient (B) of 1.567 with a standard error of .222, yielding a t-value of 7.054 and $p = .000$, which is highly significant. This represents the expected level of road accident reduction when the predictor variable is zero. The key finding is that the public enlightenment and campaign education programme (PECP) has an unstandardized coefficient of .106 with a standard error of .039, a standardized coefficient (Beta) of .141, a t-value of 2.738, and $p = .006$. This result is statistically significant at the 0.05 level, indicating that for every one-unit increase in public enlightenment and campaign education programmes, the reduction of road safety increases by 0.106 units, holding other factors constant.

Based on these results, the null hypothesis that public enlightenment and campaign education programmes will not significantly influence road accident reduction among commercial bus drivers in Lagos State is rejected. While the effect size is moderate and explains only 17.3% of the variance, this demonstrates that public enlightenment and campaign programmes make a meaningful contribution to reducing road accidents among commercial bus drivers, supporting continued investment in such initiatives as part of a comprehensive road safety strategy in Lagos State.

Research Hypothesis Two: There will be no significant influence of road traffic laws and regulation awareness training programmes in reducing road accidents among commercial bus drivers in Lagos State, Nigeria.

Table 3: Regression Analysis Results of the Relative Influence of Road Traffic Laws and Regulation Awareness Programmes on Road Accident Reduction among Drivers

Model summary

$R = .560^a$

$R^2 = .313$

R^2 (Adjusted) = .306

Standard Error of Estimate = .238

$F = 39.937, P < 0.05$

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	Remarks
	B	Std. Error	B	T		
1 (Constant)	1.855	.150		12.407	.000	Significant
RTLAP	.079	.026	.142	3.016	.003	Significant

a. Dependent Variable: Road Accident Reduction

b. Predictors: (Constant), Road Traffic Laws and Regulation Awareness

The analysis in Table 3 reveals statistically significant findings that lead to the rejection of the null hypothesis. The model summary shows a correlation coefficient of $R = .560$, indicating a moderate to strong positive relationship between the predictor variable (road traffic laws and regulation awareness programmes) and the dependent variable (reduction of road accidents). The R^2 value of .313 indicates that approximately 31.3% of the variance in the reduction of road accidents among commercial bus drivers can be explained by road traffic laws and regulation awareness training programmes. This represents a substantial explanatory power, suggesting that these training programmes are an important factor in determining the reduction of road accidents. The adjusted R^2 of .306 provides a more conservative estimate that accounts for the model's complexity, and the minimal difference between R^2 and adjusted R^2 indicates model stability. The standard error of estimate of .238 suggests good prediction accuracy with relatively small deviations from the regression line.

The F-statistic of 39.937 with $p < 0.05$ demonstrates that the overall regression model is highly statistically significant, confirming that road traffic laws and regulation awareness training programmes have a measurable and meaningful influence on the reduction of road accidents. This strong F-value indicates the model provides an excellent fit to the data.

Examining the regression coefficients, the constant term has an unstandardized coefficient (B) of 1.855 with a standard error of .150, yielding a t-value of 12.407 and $p = .000$, which is highly significant. This represents the baseline level of reduction of road accidents when the predictor variable is zero. The key finding is that road traffic laws and regulation awareness programmes (RTLRAP) have an unstandardized coefficient of .079 with a standard error of .026, a standardized coefficient (Beta) of .142, a t-value of 3.016, and $p = .003$. This result is statistically significant, indicating that for every one-unit increase in road traffic laws and regulation awareness training programmes, reduction of road accidents increases by 0.079 units.

The standardised coefficient of .142 indicates a small to moderate positive effect size, demonstrating that these training programmes make a meaningful contribution to reducing road accidents. Based on these results, the null hypothesis that there will be no significant influence of road traffic laws and regulation awareness training programmes in the reduction of road accidents among commercial bus drivers in Lagos State is rejected. The data provide strong statistical evidence that these programmes do have a significant positive influence on road accident reduction. With 31.3% of variance explained, these training programmes represent one of the more influential factors in promoting road accident reduction, supporting the

continued implementation and expansion of such initiatives as an effective strategy for improving road safety and accident reduction among commercial bus drivers in Lagos State.

Research Hypothesis Three: Emergency first responder education programmes will not significantly reduce road accidents among commercial bus drivers in Lagos State, Nigeria.

Table 4: Regression Analysis Results of the Relative Contribution of Emergency First Responder Education Programmes and Road Accident Reduction

Model summary							
R= .213 ^a							
R ² = .045							
R ² (Adjusted) = .034							
Standard Error of Estimate = .319							
ANOVA							
Sum of Squares=1.685, Mean Square=.421, F=4.149, df=4, P <0.05							
Model		Unstandardized		Standardize		Remarks	
		Coefficients	Std. Error	d Coefficients	T		
		B		B	Sig.		
1	(Constant)	3.510	.068		51.251	.000	Significant
	Age	.017	.019	.062	.889	.375	Not Significant
	Edu. Qualification	-.052	.016	-.185	-3.335	.001	Significant
	EFREP	-.037	.036	-.053	-1.018	.310	Not Significant
	Driving Experience	-.036	.021	-.117	-1.733	.084	Not Significant

a. Dependent Variable: Road accidents among commercial bus drivers

b. Predictors: (Constant), Driving experience, Emergency first responder education programme, Educational qualification, Age of the respondents

The regression analysis examined the contribution of emergency first responder education programmes to the reduction of road accidents among commercial bus drivers in Lagos State, while controlling for age, educational qualification, and driving experience. The overall model was statistically significant ($F = 4.149$, $p < 0.05$), indicating that the predictors collectively explained variance in professionalism. However, the model's explanatory power was quite weak, with an R-squared of .045 and adjusted R-squared of .034, meaning the variables together explained only about 4.5% of the variance in the reduction of road accidents.

Examining the individual predictors, the emergency first responder education programme (EFREP) showed a negative but non-significant relationship with road accident reduction ($B = -.037$, $\beta = -.053$, $t = -1.018$, $p = .310$). This indicates that participation in the emergency first responder education programme did not have a statistically significant influence on reduction of road accidents among commercial bus drivers. Among the control variables, only

educational qualification emerged as a significant predictor ($B = -.052$, $\beta = -.185$, $t = -3.335$, $p = .001$), though surprisingly with a negative relationship. Age ($p = .375$) and driving experience ($p = .084$) were not significant predictors of road accident reduction.

Based on these findings, the null hypothesis cannot be rejected. The evidence suggests that emergency first responder education programmes do not significantly reduce road accidents among commercial bus drivers in Lagos State, Nigeria. The lack of statistical significance for the EFREP variable indicates that other factors beyond those included in this model may be more influential in determining driver professionalism.

Discussion of Findings

Public Enlightenment and Campaign Education Programmes - the finding that public enlightenment and campaign education programmes contributed immensely to the reduction of road accidents among commercial bus drivers validates the importance of strategic communication initiatives in road safety management. This finding resonates with the literature's emphasis on enlightenment approaches that transcend mere information dissemination to foster deep cognitive engagement and intrinsic motivation for safe behaviours (WHO, 2021). The effectiveness documented in Lagos State is particularly noteworthy given the complex socio-cultural environment where commercial bus drivers operate. The literature demonstrates that well-designed public enlightenment programmes typically produce knowledge improvement effects of 20-35% and attitude changes of 15-25% (Phillips, Ulleberg, & Vaa, 2022). In the commercial bus driver context, these awareness improvements are particularly valuable because they address not only individual knowledge gaps but also the social norms and peer influences that shape driving behaviours within the professional community. The finding suggests that enlightenment approaches tailored to commercial drivers, incorporating worksite-based delivery, peer-led education, and acknowledgment of operational constraints, can overcome the skepticism and message fatigue common in this demographic.

Emergency First Responder Education Programmes - the finding that emergency first responder education programmes do not significantly reduce road accidents among commercial bus drivers in Lagos State presents a surprising contradiction to both the literature and theoretical expectations. This negative finding requires careful interpretation because the absence of a significant relationship does not necessarily indicate programme ineffectiveness

but may reflect measurement issues, implementation quality, contextual factors, or the specific operationalization of "professionalism" in this study. The literature provides strong evidence for the effectiveness of emergency first responder training across multiple dimensions. Studies document 30-40% reductions in preventable fatalities at incident scenes through timely first responder interventions (Cone, Serra, & Burns, 2021), 40-50% higher scores on professional identity scales among trained drivers (Eisenman, Coleman, & LaBombard, 2021), and 25-35% greater adherence to safety protocols in daily operations. The theoretical framework supporting first responder training emphasizes its role in expanding professional identity from transportation service providers to comprehensive safety professionals, creating psychological ownership of safety outcomes that extends beyond immediate vehicle operation.

Conclusion

The road safety education programmes, such as public enlightenment and campaign programmes provide strong validation for road safety education as a core road safety strategy for reducing road accidents among commercial bus drivers in Lagos state. The surprise negative finding for emergency first responder training, while contradicting expectations, highlights the critical importance of implementation quality, contextual alignment, and appropriate outcome measurement. More importantly, the minimal participation of commercial drivers in road safety education programmes is an indication of poor understanding of the roles of RSEs in reducing road accidents among commercial drivers in Lagos state, despite the public enlightenment and campaign programmes provided by the Lagos state government through LASTMA.

Recommendations

Based on the findings, the following recommendations are made;

1. The Lagos State Government, through the Ministry of Transportation and LASTMA, should establish a mandatory, integrated professional development framework for all commercial bus drivers that sequences multiple educational components rather than relying on isolated interventions.
2. Rather than abandoning emergency first responder training based on the null findings, Lagos State should conduct a comprehensive programme review and redesign that addresses implementation quality, contextual barriers, and organisational support systems.

3. Lagos state government should establish formal, institutionalized partnerships between LASTMA, FRSC, transport unions (NURTW, RTEAN), vehicle owners' associations, and civil society organisations to collaboratively sensitize all road users on the important roles RSEs play in ensuring their safety on the road.

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