Mobility Characteristics and Safety Practices among Secondary School Students in Oyo, Oyo State, Nigeria.

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Abstract

This study examined mobility characteristics and road safety practices among secondary school students in Oyo, Oyo State, Nigeria. The study utilized both primary and secondary data. Using multi-stage sampling, 399 copies of questionnaire were purposely administered to students from sampled 25 senior secondary schools. Secondary data were obtained from relevant organizations. Data collected were analyzed using descriptive and inferential statistics (Chi-square and t-tests). Findings revealed that walking (43.6%) and motorcycles (22.1%) were the dominant modes of school travel, with 54.1% of students commuting independently. Female students were more likely to be escorted (46%) and use private vehicles or buses, while males walked more frequently (54.3%). Travel distances varied, with 44.4% covering 1–2 km daily, and 60.9% spending up to 30 minutes commuting. Students perceived private cars (Mean=3.44) and school buses (Mean=3.34) as safest, while walking (Mean=2.68) was deemed least safe. Despite risks, most students demonstrated cautious street-crossing behaviours: 78.2% avoided crossing without checking for vehicles, and 73.9% refrained from using mobile devices while crossing. Gender differences in safety practices were statistically insignificant. The study highlighted vulnerabilities in student mobility, including reliance on unsafe transport modes and inadequate pedestrian infrastructure. The study recommended for improved road safety education, enhanced pedestrian facilities, stricter enforcement of traffic laws, and policies promoting safer school transport options. These measures were essential to mitigate risks and align with global road safety objectives for protecting young commuters in rapidly urbanizing regions.

Keywords: Student mobility, road safety, commuting patterns, pedestrian safety, Oyo, Nigeria.

Introduction

Globally, student mobility and road safety remain critical concerns as young individuals constitute a significant proportion of road users. The World Health Organization (WHO) reports that road traffic injuries are a leading cause of death among individuals aged 5–29 years, with pedestrians, cyclists, and motorcyclists being the most vulnerable (WHO, 2022). Developed countries have implemented strict road safety policies, well-structured pedestrian infrastructure, and robust traffic laws to minimize road-related accidents involving students. For instance, countries like Sweden and the Netherlands have successfully reduced student-involved road accidents through pedestrian-friendly infrastructure, traffic calming measures, and comprehensive road safety education programs (Jarosz et al., 2023).

In contrast, developing countries struggle with inadequate transportation systems, poor road networks, and weak enforcement of safety

regulations, exposing students to higher risks while commuting to and from school (Ahmed et al., 2023: you need more citations here). The lack of safe and structured pedestrian walkways, poor traffic control, and insufficient enforcement of road safety laws contribute to high accident rates among students. Studies indicate that in sub-Saharan Africa, particularly in countries such as Kenya, Ghana, and South Africa, students face numerous hazards while commuting due to poor road infrastructure, reckless driving, and inadequate transport policies targeting school mobility (Alves et al., 2021).

In Africa, student mobility is often characterized by long walking distances, the use of public minibuses, motorcycles taxis , and bicycles. Informal transport systems, such as motorbike taxis, are prevalent, increasing students' vulnerability to road crashes (Alves et al., 2021). Moreover, the lack of clear policies on student transportation safety further exacerbates these challenges, leaving students at the mercy of unsafe mobility conditions (Choi et al., 2016).

In Nigeria, student mobility patterns reflect the broader transportation challenges in the country. Many students rely on walking, commercial motorcycles, public minibuses, taxis and other unregulated private transport services, exposing them to unsafe commuting conditions (Alves et al., 2021). A report by the Federal Road Safety Corps (FRSC) highlights that school children are frequently involved in road crashes due to reckless driving, overloading, and inadequate pedestrian infrastructure (ref). The lack of pedestrian bridges, zebra crossings, and road safety awareness further aggravates the situation, making students particularly susceptible to accidents (Selveindran et al., 2021).

Many urban and peri-urban areas in Nigeria face mobility challenges for students due to increasing urbanization, poor road networks, and inadequate transport infrastructure. The growing population of students, coupled with limited road safety measures, has resulted in increased road accidents involving school children. Many students commute using motorcycles and public minibuses, often without necessary safety precautions such as

seatbelts or helmets (Ramírez et al., 2024). Road traffic accidents involving schoolchildren have become a growing concern in Nigeria. Reports indicate that students often fall victim to pedestrian crashes, motorcycle-related accidents, and unsafe commuting conditions. The situation is particularly dire in urban and peri-urban areas where students rely on public transport or motorcycles with minimal safety measures (Shepherd and Diwakar, 2023).

Many schools in Nigeria, particularly in Oyo State, are located along roads that lack essential infrastructure such as pedestrian walkways, traffic lights, and designated bus stops. This absence of basic road safety facilities exposes students to unnecessary risks. Additionally, poor traffic management and enforcement contribute to reckless driving near schools, leading to preventable accidents (Adesanya, 2023). The reliance on motorcycles and poorly maintained commercial vehicles for school transportation in the state raises significant safety concerns. Many students do not wear helmets when using motorcycles, and commercial drivers frequently ignore road safety regulations such as speed limits and seatbelt usage. Furthermore, pedestrian students often have to navigate poorly marked roads, putting them at high risk of accidents. Without proper road safety education and strict enforcement of traffic rules, the rate of student-involved road accidents is likely to persist (Choi et al., 2016).

According to WHO (2022), road safety is a critical component of student mobility, especially in developing countries where transportation systems are inadequate. Ensuring safe mobility requires a combination of well-planned road infrastructure, policy implementation, and public awareness campaigns (Oeschger et al., 2020). Several countries have implemented policies and strategies to improve student mobility and road safety. Studies show that school zones with speed limits, pedestrian crossings, and designated bus stops contribute to safer mobility for students (Jarosz et al., 2023).

Although national road safety campaigns exist, little is known about students' knowledge and

adherence to road safety practices in the study area. There is a lack of sufficient research on students' mobility characteristics and road safety awareness in the state. Addressing this gap will provide critical insights into the mobility challenges faced by students and inform the development of targeted interventions to enhance road safety in school environments. Given the increasing concerns surrounding student mobility and road safety in the state, it is crucial to assess students' mobility characteristics and their adherence to road safety practices.

The study aims to investigate the mobility patterns and road safety practices of students in Nigeria, with a particular focus on the challenges and risks they face during their daily commutes. The objectives of the study include: to examine the profile of the students; examine student commuting patterns; and to assess road safety awareness and compliance among secondary school students in the study area.

Literature Review

Globally, road traffic injuries are a leading cause of death among young individuals aged 5–29 years, with students constituting a significant proportion of road users (WHO, 2022). The World Health Organization (WHO) highlights that pedestrians, cyclists, and motorcyclists are particularly vulnerable to road accidents, emphasizing the need for comprehensive road safety measures. The global burden of road traffic injuries underscores the importance of implementing effective road safety policies. Developed countries have made significant strides in reducing road-related fatalities through strict enforcement of traffic laws and investment in safe infrastructure (Jarosz et al., 2023).

International initiatives, such as the United Nations' Decade of Action for Road Safety, aim to improve road safety worldwide. These initiatives emphasize the role of policy implementation, public awareness campaigns, and infrastructure development in reducing road traffic accidents (Oeschger et al., 2020). Countries like Sweden and the Netherlands have successfully implemented road safety policies that prioritize pedestrian and cyclist safety. These policies include traffic calming measures, speed limits in school zones, and designated pedestrian crossings, which have significantly reduced student-involved road accidents (Jarosz et al., 2023).

In contrast to developed countries, developing regions face significant challenges in ensuring road safety for students. Inadequate transportation infrastructure, poor road networks, and weak enforcement of safety regulations contribute to high accident rates among students (Ahmed et al., 2023). Students in developing regions often rely on informal transport systems, such as motorbike taxis, which increase their vulnerability to road crashes. The lack of structured pedestrian infrastructure and traffic control measures exacerbates these risks (Alves et al., 2021, Ipingbemi and Aiworo, 2013).

Rapid urbanization in developing regions has led to increased traffic congestion and longer commuting distances for students. This trend highlights the need for comprehensive road safety policies that address the unique challenges faced by students in urban and peri-urban areas (Ramírez et al., 2024). In Africa, student mobility is characterized by long walking distances and the use of public minibuses, motorcycles, and bicycles. The prevalence of informal transport systems and poor road infrastructure poses significant safety risks to students (Alves et al., 2021).

Studies in sub-Saharan Africa, particularly in countries like Kenya, Ghana, and South Africa, highlight the numerous hazards students face while commuting. Poor road infrastructure, reckless driving, and inadequate transport policies targeting school mobility contribute to high accident rates among students (Alves et al., 2021). Informal transport systems, such as motorbike taxis, are prevalent in many African countries. These systems often lack safety regulations and contribute to the high incidence of road crashes involving students (Alves et al., 2021).

In Nigeria, student mobility patterns reflect the broader transportation challenges in the country. Many students rely on commercial motorcycles, public minibuses, and unregulated private transport

services, exposing them to unsafe commuting conditions (Alves et al., 2021). The Federal Road Safety Corps (FRSC) in Nigeria has implemented various initiatives aimed at improving road safety for students. However, the enforcement of these policies remains weak, leading to avoidable road incidents (Selveindran et al., 2021).

The lack of pedestrian bridges, zebra crossings, and road safety awareness programs in Nigeria exacerbates the risks faced by students. Many schools are located near busy roads with no designated pedestrian pathways or traffic control measures (Adesanya, 2023). Localized studies in Oyo State, Nigeria, highlight the unique mobility challenges faced by students in the region. The absence of essential road safety infrastructure, such as pedestrian walkways and traffic lights, exposes students to unnecessary risks (Adesanya, 2023).

Research indicates that many students in Nigeria lack awareness of road safety practices and do not adhere to safety measures (Olawuwo, 2022). The rationale behind this study is to address the gap in research regarding student mobility characteristics and road safety behaviour in Nigeria,

Methods

Study Area

The study area (Figure 1), Oyo town and its' suburbs, is located between latitudes 3^0 53 N and $7^0$46 N and longitudes 3^0 54 E and 3^0 58 E in Oyo State, Nigeria (Afon and Okewole ,2007). The study area formed a contiguous built-up/ urban settlement located in four (4) contiguous Local Government Areas (LGAs) in Oyo state namely: Atiba, Afijio, Oyo West and Oyo East LGAs. Based on the national population census, the aggregate population of the four LGAs was 560,982 in 2006 (NPC 2006). By 2023, the study area had projected population of 869,308 based on 2.61% growth rate (NPC, 2023)

Transport infrastructure and services in the study area similar with other major cities in Southwestern Nigeria (Olawole 2021, Ipingbemi and Aiworo 2013, Ipingbemi, 2010) In terms of road networks , major roads linking all parts of the city are Oyo-Iseyin Road, Mobolaje Road, Digedu Road, Isokun Road, Sanga Road , Pakoyi Road, Ilaka Road, Adikuta Road, Awe Road, Oke Olola Road, Asipa Road Aladota, Sembe Street , Baba Ibadan Street and Oroki Road. In addition, a major federal road – Ibadan - Oyo-Ogbomoso – Ilorin expressway connects the town with major settlements in the state and other neighbouring states in the country (National Geospatial-Intelligence Agency , 2023). The minor roads linking all parts of the study area in poor condition and lack pedestrian facilities such as walkways and crossing facilities. In terms of transport service provision in the city, private cars, taxis, buses and motorcycle taxis are widely used by both captive and choice riders in the study area. Intra-city transport service provision is dominated by private operators.

As at 2020, the total secondary schools in the study area was 109 with secondary school student's population of 15,348 (Local Education District Report, 2020). Figure 1 shows the study area and the distribution of sampled schools.
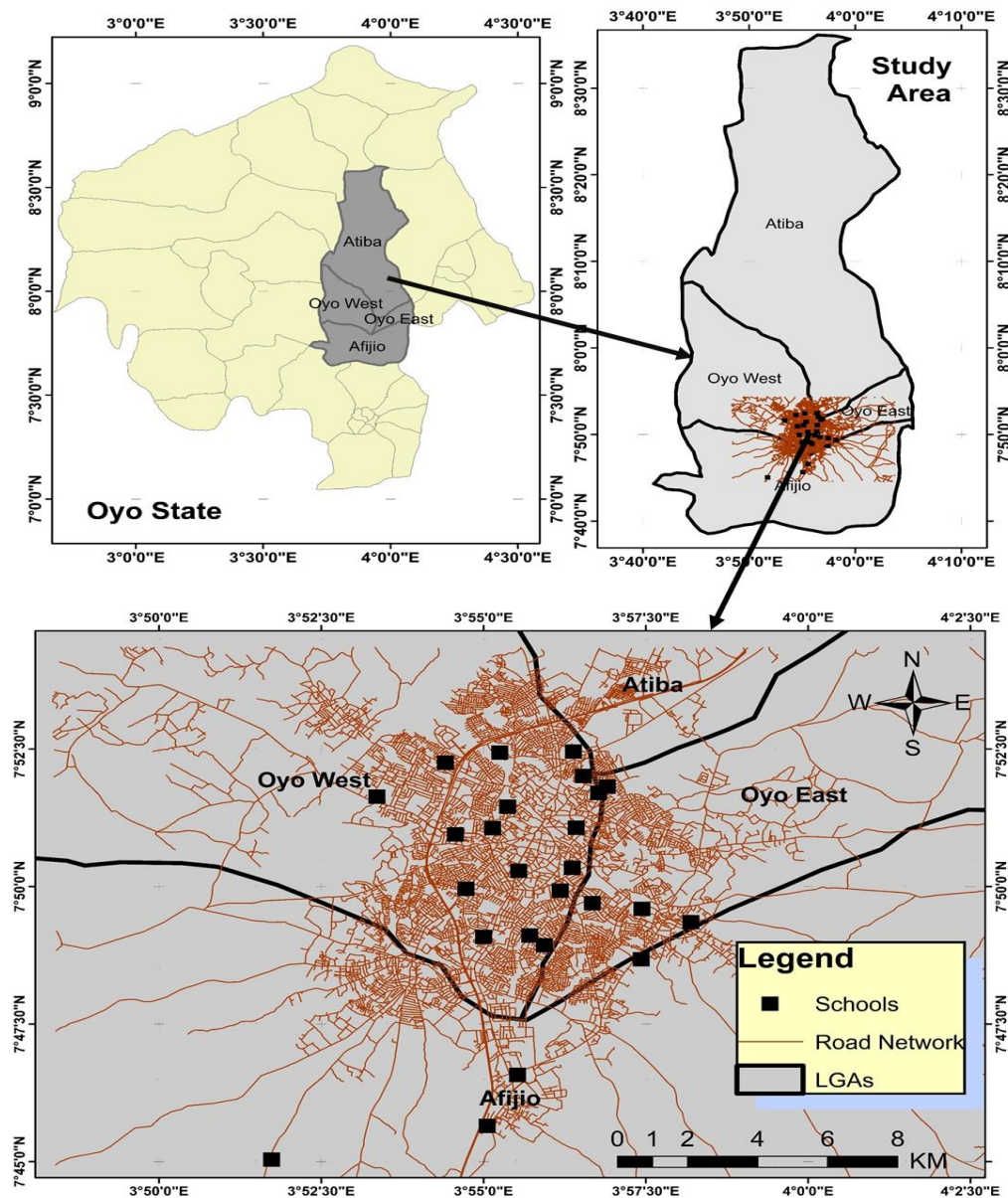
Figure 1. Map of Oyo town, and the spatial location of sampled schools in the study area
Sources: Map extracted from OpenStreetMap by BBBike.org and DIVA-GIS (2022)

Data

A multi-stage sampling technique was employed to ensure representative coverage of the study area. In the first stage, the four LGAs were purposively selected. In the second stage, a stratified random sampling technique was applied to select schools within each LGA from both public and private institutions. Out of 109 schools identified—22 in Afijio, 27 in Atiba, 19 in Oyo East, and 41 in Oyo West—a total of 25 schools were selected: 6 each from Afijio, Atiba, and Oyo East, and 7 from Oyo West (Table 1).

In the third stage, a systematic random sampling approach was used to select students from senior secondary school classes (SS1–SS3). Secondary schools in SS1 to SS3 were picked because

students in these categories are knowledgeable enough to talk about their mobility and traffic experience (see Ipingbemi and Aiworo, 2013).

The Yamane (1967) formula was applied to determine the appropriate sample size at a 5% margin of error:

$$n = \frac{1}{1 + N(e)^2}$$

where 'n' is the sample size, 'N' is the population size, and 'e' is the margin of error. This formula is a simplified approximation of other sample size formulas and is often used for surveys and research studies.

A total student population of 10,200 students across all selected schools, the required sample size was calculated as approximately 399 students. The sample was proportionally distributed across twenty-five schools in the four LGAs based on students enrollment figures (Table 1).

Table 1. School and Student Sample by Local Government Area

S/N	Selected LGA	Total Schools	Public Schools Selected	Private Schools Selected	Total Schools Selected	Students Enrollment	Students Sampled per school	Number of Selected Students
1	Afijio	22	4	2	6	1,997	13	78
2	Atiba	27	4	2	6	2,355	15	92
3	Oyo East	19	4	2	6	1,764	12	69
4	Oyo West	41	5	2	7	4,084	23	160
	Total	**109**			**25**	**10,200**		**399**

Data collection was carried out using a structured questionnaire. The questionnaire designed for the research had four sections. 'Section-1' comprised ten items related to school, parental and socio-economic characteristics of the students. 'Section-2' had seven items related to mobility and school trip characteristics the students. 'Section-3' comprised three items on student's road safety knowledge. Each of the three items consists of questions relating adequacy of transport and safety infrastructure; quality and condition of transport infrastructure in the study area, and 'Section-4' comprised four items on student's road safety practices and attitudes. The first item was on students perceived safety associated with transport modes to school, student's street crossing behaviors was covered by item two. Items three and four examined students' satisfaction with transport services and student's annoyance base on travel environment. Data collected in sections three and four of the questionnaire were based on different Likert-type scales depending on the questions

asked. Both five and six rating Likert-type scales were used in the last two sections of the questionnaire.

Data Analysis

Data analysis was conducted using SPSS Version 25. Descriptive statistics—frequencies, means, and standard deviations—were used to summarize the data. For inferential analysis, Chi-square tests of independence were performed to test the association between variables. Also, student t-test for independent groups ($\mu 1 \neq \mu 2$) was used to examine gender difference in road safety practices.

Results

Socio-Economic Characteristics of Respondents

The distribution of respondents by gender as shown in Figure 1 indicates that 55% of the respondents

were female, while 45% were male. This implies that female respondents outnumbered males in this study. This finding aligns with data obtained from the Local Government Inspector on Education in Oyo Zone (2019), which reported a higher enrollment of female students compared to male students in the region.
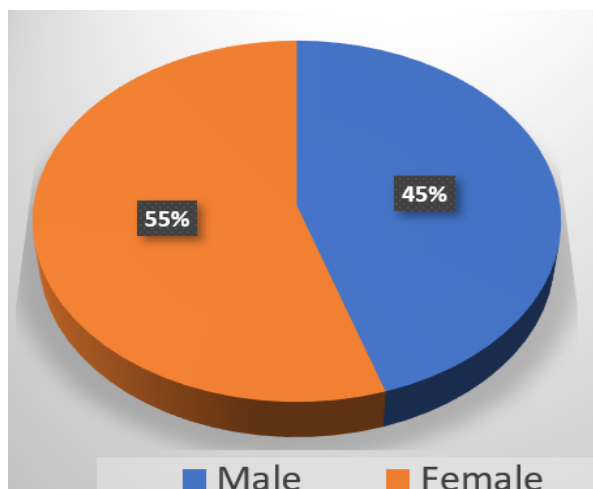

Figure 1: Distribution of Respondents by Gender

Figure 2 illustrates the age distribution of respondents. The results show that 71% of respondents were between 12 and 15 years, 27% were between 16 – 19 years, and only 1% were 20years and above. The high proportion of students in the age group 16-19 years is similar to findings by Setorwofia, Nana-Otoo, Arko, Adjakloe, & Ojo (2020) in Ghana where 30% of sampled secondary students are between 16 and 19 years. The mean age of respondents was 16 years, which aligns with the expected age of secondary school students as reported by the Local Government Inspector on Education in Oyo Zone (2019).
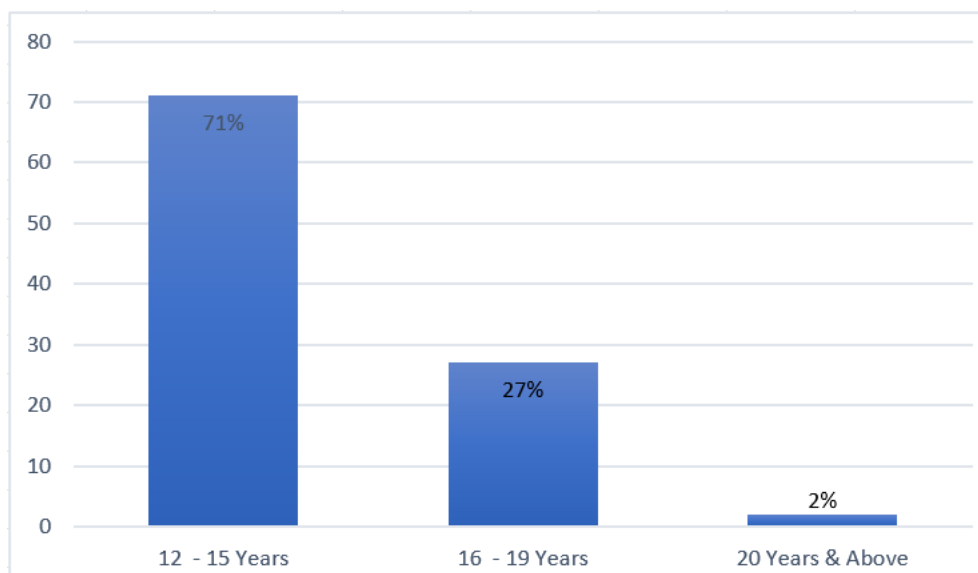

Figure 2: Distribution of Respondents by Age

In terms of household ownership of transport means, 15.5% of the sampled students' households have no means of transport. Table 2 shows the distributions of 84.5% of the household with the means of transport by types. Oyo West recorded the highest percentage (86.2%), suggesting better mobility options for students in the LGA. This finding is in line with the finding of Mackett (2018), who noted that private transport ownership

often reflects better household economic conditions.

In terms types of transport means owned by the parent of the sampled students, cars (40.60%) and motorcycles (37.40%) dominate (Table 2). Only a small proportion (6.5%) owned bicycles. The distributions are similar when ownership of means of transport is disaggregated on the basis of LGA (Table 3).

Table 2. Means of Transport Owned

Means of transport owned	Oyo West	Oyo East	Atiba	Afijio	Total
No	13.8	18.0	15.0	18.3	15.50
Yes	86.2	82.0	85.0	81.7	84.50
Total	100.0	100.0	100.0	100.0	100.00

Table 3. Type of Means of Transport Owned

Type of Means of Transport Owned	Oyo West	Oyo East	Atiba	Afijio	Total
None	12.40	16.70	15.00	17.90	15.50
Bicycle	6.90	5.00	7.00	7.10	6.50
Motorcycle	39.30	38.30	35.00	36.70	37.40
Car/Bus	41.40	40.00	43.00	38.30	40.60
Total	100.00	100.00	100.00	100.00	100.00

School trip characteristics

Student trip to schools is dominated by lone or independent student trips (54,1%). Students escorted to school accounted for 45.9% (Table 4). There exists a significant difference between independent student travel and those escorted to schools (χ^2 =77.695, df=1, p=o.001). Similar significant differences were observed between independent travel and escorted travel among the students when the data was further disaggregated by gender – male (χ^2 =77.695, df=1, p=o.000) and female (χ^2 =40.431, df=1, p=o.000).

The distributions of travel distance to school show that 16.5% of the students travelled less than 1km to their secondary schools, 44.4% travelled between 1 and 2 km, 23.1% of them travelled

between 2 and 3 km, 13% travelled 3 to 4 km and about 3% of the children travel over 4 km. The frequently travelled distance is between 1.1km to 2 km. In terms of gender, there were significant differences among the distance travelled to schools by gender of the students: male (χ^2 =85.888, df=4, p=o.000) and female (χ^2 =145,232, df=4, p=o.000)

The most frequently used modes of travel to schools as shown in Table 4 were walking (43.6%) and motorcycle (21.1%). The other modes used for school travel are private vehicle (12.8%), bus (11.0%), taxis (9%) and bicycles (9%). The dominance of walking as transport mode to schools in the study area is supported by the finding of Oosterhaven (2020), who observed that walking is often dominant for school travel in urbanizing

regions. Similarly, Ipingbemi and Aiworo (2013) indicated that more than 65% of secondary school children travel to school on foot in Benin City, Nigeria.

In terms of gender, male students (54.3%) more than female ((31.4%) walked to schools. While female students (25.1%) more than male ((18.6%) used motorcycle to commutes to school to schools. In addition, female students also travelled more to schools by private vehicles and buses. Also , significant d1fference among travel modes were observed by gender: male (χ^2 =206.012, df=5, p=o.000) and female (χ^2 =40.730, df=5, p=o.000)

Also, in terms of travel time from home to school, as high as (60.9%) spent up to 30 minutes while commuting to schools. Irrespective of gender, the distribution is about the same: male (60.1%) and female (61.6%).   Students who spent between 31minutes to 1 hour and between 1 hour to 2hours in travelling to schools are 23.6% and 11.8% respectively (Table 3). Significant d1fference among travel time to school also exists by gender: male (χ^2 =139.404, df=3, p=o.000) and female (χ^2 =168.621, df=3, p=o.000).

Table 3: School trip characteristics

Variable	Case	Male (n= 188)		Female (n= 211)		Total (n = 399)	
		No	Freq	No	Freq	No	Freq
School Trip	Alone -	102	54.3	114	54.0	216	54.1
	With Escort(s)	86	45.7	97	46.0	183	45.9
Travel Distance	Less than1KM	55	29.3	11	5.2	66	16.5
	1.1KM to 2KM	77	41.0	100	47.4	177	44.4
	2.1KM to 3KM	32	17.0	60	28.4	92	23.1
	4.1KM to 6KM	16	8.5	36	17.1	52	13.0
	Above 4KM	8	4.3	4	1.9	12	3.0
Travel Mode	Walk	102	54.3	72	34.1	174	43.6
	Bicycle	6	3.2	0	0.0	6	1.5
	Motorcycle	35	18.6	53	25.1	88	22.1
	Taxi	17	9.0	19	9.0	36	9.0
	Private Car	14	7.4	37	17.5	51	12.8
	Bus	14	7.4	30	14.2	44	11.0
Travel Time	Below 30 Minutes	113	60.1	130	61.6	243	60.9
	31 - 1 Hours	47	25.0	47	22.3	94	23.6
	1 - 2 Hours	17	9.0	30	14.2	47	11.8
	2 Hours and Above	11	5.9	4	1.9	15	3.8

Perceived safety of school travel modes

Figure 3 presents the results from the descriptive statistics of School children' perception of safety associated with different travel modes. Of the modes, Students' perceived private vehicle (M= 3.44) and school bus (M= 3.34) as the safest modes of travel to school respectively. Motorcycle

(M=3.09) was considered the next safest mode. While taxis (M=2.95) and commercial buses (M=2.77) ranked fourth and fifty respectively. Walking (M=2.68) as mode of school travel was ranked the least as travel mode by the students. When further disaggregated by gender, the ranking of the travel modes to school remains the same (Table 3).
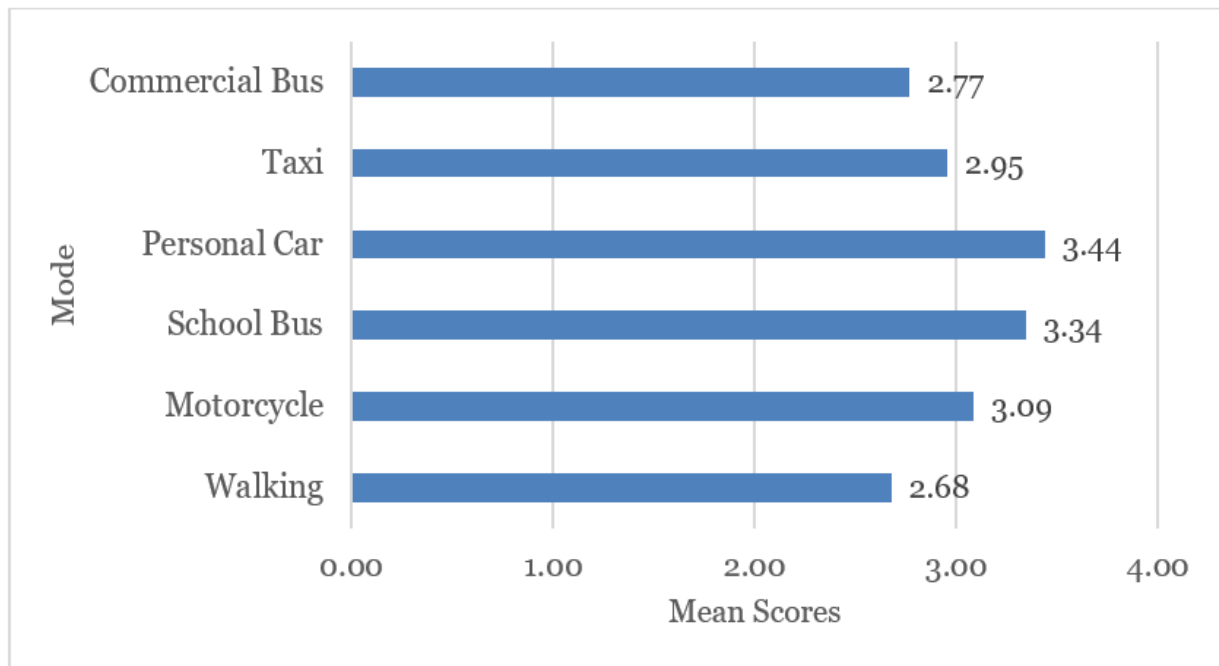
Figure 3. Perceived safety by mode of transport

Table 3. Perceived safety by mode of transport by gender

No	Mode	Male (n=188)		Female (n=211)		Total (n=399)	
		Mean	Rank	Mean	Rank	Mean	Rank
1	Walking	2.55	6	2.79	6	2.68	6
2	Motorcycle	2.94	3	3.21	3	3.09	3
3	School Bus	3.24	2	3.43	2	3.34	2
4	Personal Car	3.31	1	3.55	1	3.44	1
5	Taxi	2.77	4	3.12	4	2.95	4
6	Commercial Bus	2.68	5	2.85	5	2.77	5

Students' safety practices in respect of street crossing practices

Given the facts that majority of the students walked to schools coupled with the facts that walking was ranked the least safe mode to schools, this section examined street crossing behaviour among sampled students.

The distribution of students' road safety practices in respect of street crossing behavior is presented

in figure 4. Majority (78.2%) of the students "never" "cross roads/streets during school trips without looking for coming vehicles". While as high as 73.9% of the sampled students never "use MP3/iPod/music devices / mobile phone during street crossing". Overall, majority (46.1% to 78.2%) of the students shows high level of safe practices by not engaging in crossing practices that do not guarantee their safety (Figure 4). Further analysis using t-test for independent groups ($\mu 1 \neq$

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µ2) show no significant gender difference in road safety practices between male and female students (Table 4).
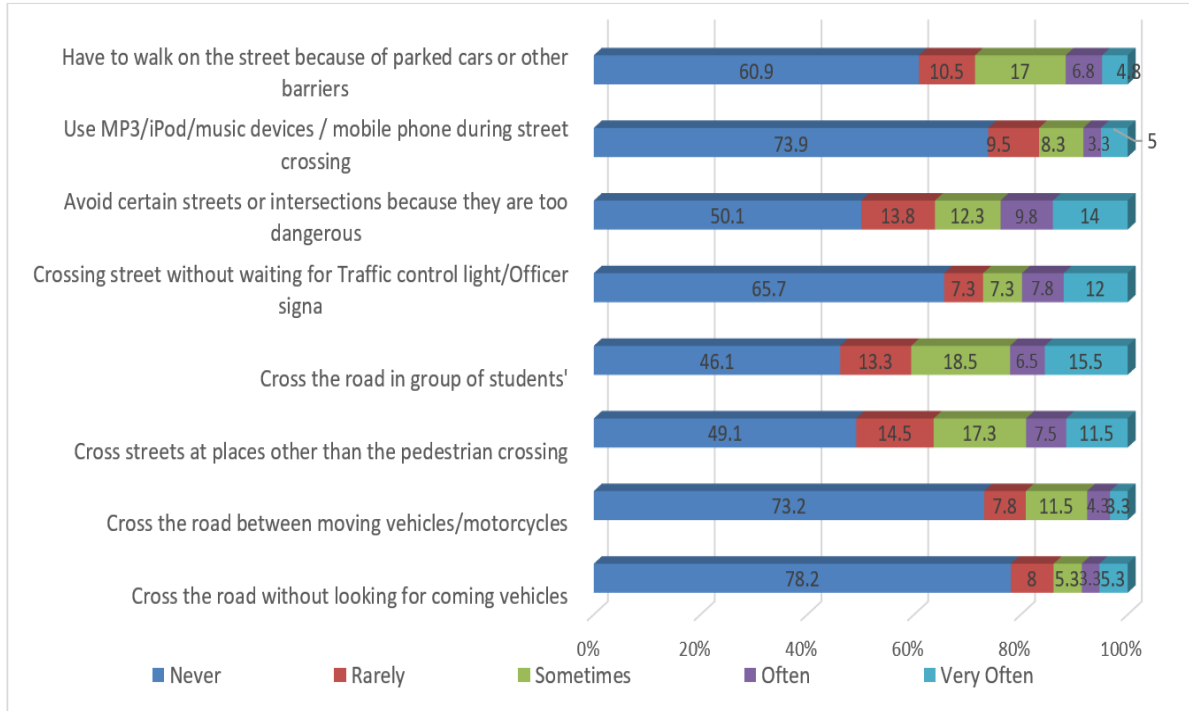

Figure 4 . The students' safety practices with respect to crossing behaviour

Table 4. Gender differences in crossing behaviour

Street Crossing Practices	Gender	Mean	Std. D.	t-test
Cross the road without looking for coming vehicles	Male	1.52	1.181	t(368) = 0.472, p =0 .637
	Female	1.47	1.001	
Cross the road between moving vehicles/motorcycles	Male	1.60	1.112	t(380) = 0.518, p =0 .605
	Female	1.54	1.015	
Cross streets at places other than the pedestrian crossing	Male	2.26	1.466	t(382) = 1.033, p =0 .300
	Female	2.11	1.350	
Cross the road in group of students'	Male	2.34	1.495	t(390) = 0.181, p =0 .856
	Female	2.31	1.482	
Crossing street without waiting for Traffic control light/Officer signa	Male	2.00	1.537	t(378) = 0.870, p =0 .382
	Female	1.87	1.383	
Avoid certain streets or intersections because they are too dangerous	Male	2.38	1.579	t(376) = 1.823, p =0 .069
	Female	2.11	1.402	
	Male	1.57	1.166	t(377) = 0.174, p =0 .862

Use MP3/iPod/music devices / mobile phone during street crossing	Female	1.55	1.042	
Have to walk on the street because of parked cars or other barriers	Male	1.81	1.208	t(391) = -0.485, p =0 .628
	Female	1.87	1.208	

Male (n= 188); Female (n =211)

Discussion

The findings of this study highlight critical issues surrounding student mobility and road safety in Oyo town, Oyo State, Nigeria, aligning with broader concerns in developing countries where inadequate infrastructure and weak policy enforcement exacerbate risks for young road users. The findings on socio-economic characteristics highlight a gender disparity in enrollment, with female students outnumbering males. This trend aligns with regional educational enrollment reports, reinforcing the notion that more females are accessing formal education.

The analysis of household ownership of transport means reveals that motorcycles and cars/buses are the dominant modes of private transport, reflecting the growing dependence on motorized transport. This high transport ownership rate suggests better mobility access, particularly in Oyo West, where transport means ownership is highest (86.2%). This corroborates Mackett's (2018) argument that private transport ownership is a strong indicator of household economic standing.

The dominance of walking (43.6%) and motorcycle use (21.1%) as primary commuting modes underscores the vulnerability of students, particularly given the lack of pedestrian-friendly infrastructure. This mirrors findings from similar studies in sub-Saharan Africa (Alves et al., 2021; Ipingbemi & Aiworo, 2013), where informal transport systems and long walking distances contribute to high accident risks.

Notably, female students were more likely to be escorted (46%) and use private vehicles or buses, while male students walked more frequently (54.3%). This suggests gendered mobility patterns, possibly influenced by parental concerns over safety, as observed in other Nigerian urban settings (Adesanya, 2023). However, despite these differences, both genders perceived walking as the least safe mode (mean = 2.68), reinforcing the need

for improved pedestrian infrastructure, such as crosswalks and traffic calming measures near schools.

The study also reveals that students generally exhibit safe street-crossing behaviors, with most avoiding risky practices like crossing without looking (78.2%) or using phones while crossing (73.9%). This contrasts with some literature suggesting poor compliance among youth (Shepherd & Diwakar, 2023), possibly indicating localized awareness efforts or inherent caution due to hazardous road conditions. However, the high reliance on motorcycles—a mode perceived as moderately safe (mean = 3.09) despite its well-documented risks in Nigeria (FRSC, cited in Selveindran et al., 2021)—points to a gap between perception and reality, necessitating targeted education on helmet use and rider safety.

The lack of significant gender differences in safety practices suggests that road safety risks are universally experienced, though mobility choices differ. This aligns with global evidence that environmental and infrastructural factors, rather than individual behavior alone, are pivotal in shaping road safety outcomes (WHO, 2022). The prevalence of short commutes (below 30 minutes for 60.9% of students) may reduce exposure time but does not eliminate risks, given the poor state of roads and traffic management near schools.

Conclusion

This study highlights the interplay between socio-economic factors, transport access, and students' safety behaviors in school travel. The prevalence of independent travel, reliance on walking, and varying perceptions of transport safety underscore the need for targeted interventions to improve mobility infrastructure and student safety. The high dependence on walking and motorcycles, modes associated with high risks due to inadequate infrastructure and lax safety enforcement, indicates both accessibility and potential safety concerns.

While students demonstrate reasonable adherence to safe crossing practices, the persistent use of unsafe transport modes highlights systemic gaps in policy and infrastructure.

To mitigate these risks, the following measures are recommended:

1. Infrastructure Improvements: Mandate pedestrian walkways, zebra crossings, and speed bumps near schools to protect walking students.
2. Policy Enforcement: Strengthen traffic laws around school zones, including helmet enforcement for motorcycle riders and penalties for reckless driving.
3. Public Awareness Campaigns: Integrate road safety education into school curricula, emphasizing the dangers of informal transport and distracted walking.
4. Gender-Sensitive Planning: Address disparities in mobility patterns by promoting safer alternatives for female students (e.g., subsidized school buses) while ensuring male students are equally protected.
5. Stakeholder Collaboration: Engage local governments, schools, and transport unions to develop context-specific solutions, drawing on successful models from countries like Sweden (Jarosz et al., 2023).

By prioritizing these measures, policymakers can align Nigeria's student mobility framework with global best practices, ultimately reducing the burden of road traffic injuries among young people**.**

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