

LIVELIHOOD AND HAZARD VULNERABILITY OF COMMERCIAL MOTORCYCLE AND TRICYCLE RIDERS IN ORILE-IGANMU AREA, LAGOS STATE, NIGERIA

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Abstract

Since commercial motorcycle and tricycle have become a recognized means of transportation in Nigeria, it has generated research interest among scholars with different focuses and findings. This paper examines the activities of commercial motorcycle and tricycle riders as a means of livelihood and their vulnerability to hazards associated with their works. The study was carried out in Orile-Iganmu Area, Lagos State, Nigeria. Twenty-five identified terminals for motorcycle and tricycle riders were purposively used for this study. Out of 250 registered motorcycle riders and 134 registered tricycle riders, 25% were randomly selected across the terminals. Thus, sixty-three motorcycle riders and thirty-five tricycle riders were sampled. Data collected were analysed using appropriate statistical packages. The findings also show that motorcycle and tricycle operators earn above 1.90 dollar per day but this does not escape them out of extreme poverty as the average number of household that depend on their income is high. This study infers that there is significant positive relationship between level of hazard risk, and vulnerability to accident. Hazard vulnerability can be minimized through construction of good roads, regular traffic control, compliance to traffic rules, and regular rest and medical check-up.

Key Words: *Livelihood, Poverty, Hazard Risk, and Hazard Vulnerability*

Introduction

The growing transport demand coupled with increasing urbanization, population and industrial development, lack of private automobiles by dwellers contributed to the emergence of informal public transport in the world (McCormick, Mitullah, Chitere, Orero and Omneh, 2013; Kumar, 2011; Ipingbemi and Adebayo, 2016). Between 1995 and 2005, 85% of the 78 largest cities of the developed countries had the faster growth in their suburban areas than the urban

centre (UN Habitat, 2011; Cervero, 2013). There is expectation that the urban population will grow faster despite the fact it accounts for more than half of the world's population. The expansion of city and its density's diminish ensues the increase in trip distance. This makes the journey to be complex and provision of public transport more important than ever before. The poor people tend to board slow-moving and over-crowded buses due to their low financial status (Paul and John, 2014).

Transport service is viewed as maker and breaker of the city due to its benefit and predicament offers to urban area (Ogunsanya, 2002). Commercial motorcycle (*Okada*) and tricycle (*Keke Napep*) are not excluded, and currently serving as means of living to many people of developing world, and auxiliary means to some people. There is an increase in the use of motorcycle and tricycle especially for commercial purpose in Africa. Motorcycles and tricycles made up of at least 33% of all transport modes in Sub Sahara Africa. For instance in Tanzania, the number of motorcycles and tricycles were 60% greater than the number of cars and buses in 2013 (Nyachieo, 2016; Amend and Transaid, 2018; WHO 2015). But it is associated with the risk especially during crashes. In comparing the tricycle with motorcycle, the tricycles are fewer than motorcycles. The cost of purchase, repairs and maintenance of motorcycle are cheaper than other modes, and elite use it as means of income by hiring the motorcycles and tricycles to local operators. Motorcycles are more frequent in accident than tricycle, and at time lead to loss of important parts of the body (Starkey, 2011; Amend and Transaid, 2018).

Ipingbemi and Adebayo, 2016 observe that tricycle is characterized with passengers lap one another, lack of horn, leaking roof, careless driving, and ignorance of road sign. Tricycle is also loading faster and more flexible than bus, but more dangerous due to lack of safety (Jain, 2011; Cervero, 2013). Many (73.4%) of the riders do not attend school beyond secondary level, and unemployment has been identified as the main reason people (55.5%) engage in tricycle. Only 35.4% of the riders possess valid license which has led to exploitation

by traffic officers in Ibadan. The activities of tricycle riders should be incorporated to urban transport planning in Nigeria (Ipingbemi and Adebayo, 2016). The use of commercial tricycle and motorcycle has resulted to the generation of income in urban area. Many of the riders have poor economic background and see commercial tricycle and motorcycle as a way of solving vagaries of hard economy coupled with unemployment in Ibadan, Nigeria. West African motorcycle riders are wallowing in struggling for making livelihood, and migrants from Gambia, Senegal, Mali, Ghana, Guinea, Togo, Benin and Niger Republic even compete with unemployed Nigerians especially in Ibadan (Muhammed, 2017; Sanusi and Emmelin, 2015; Jubril *et al.*, 2018).

Motorcycles increase in many parts of developing countries linking residents to market, work-place, and also create employment opportunity to teeming young population. It also accounts for a high rate of goods and passenger movements, though it may be more expensive and uncomfortable when compared to other modes. There are also positive health outcomes attributable to transport through enhanced access to healthcare, education, and commerce (Seth, 2014; Paul and John 2014). Commercial motorcycles help in coping with gridlock, and closing the gap between residential areas and work-place (Falola 1989; Rasheed, 2013). Commercial motorcycles have become indispensable livelihood, and aids to many other economic activities such as peasant farming, technical skills, auto-repairs, petty trading, education, healthcare, self-employment, and reducing the rate of armed bandit (Rasheed, 2013).

It has been advocated that there should be appropriate transport service for rural

people. Though, there are mixed results on the benefits of road transport: some believe that it improves the living standards across social classes while others are of opinion that it only favours affluent people. Many studies have shown that commercial motorcycles and tricycles can banish poverty and create economic opportunity for many people. Involvement of poor people as motorcycle operators is as a result of low capital and lease arrangement (Paul and John, 2014).

Both educated and uneducated engage in commercial riding of motorcycle and tricycle without considering the hazards entails. Hazards is at time attached to supernatural forces, ignorance of traffic codes and laws, pressure of the passengers (Sanusi and Emmelin, 2015; Jubril *et al.*, 2018). Road crash and injury are among the major public health challenges across the globe. WHO (2018) has recorded that approximately (1.35 million people) lost their lives to road traffic crash. Low and middle-income countries have 60% of the world vehicles, and account for 93% of the world road fatalities. Death of children and young adults of age 5 to 29 years are majorly attached to road traffic injuries. Young male people of below 25 years of age accounts for 73% of all road traffic death. Motorcyclists are responsible for 17.9% of all road deaths in Ghana in 2015 (National Road Safety Commission, 2015), and motorcycle accounts for 13.5% of road accident in Kenya (Rugut and Makori, 2015).

The hazards among the motorcyclists are attributed to reckless riding, over-speeding, alcohol consumption, inadequate riding skills and in-adherence to traffic laws such as wearing of helmet which has led to injuries, fractures, amputation of both the riders and passengers in Lagos (Sanusi and

Emmelin, 2015; Peden 2004; Solagberu, 2006; Jubril *et al.*, 2018, Rasheed, 2013). The victims of fatal road traffic accidents are pedestrians and motorcyclists who are majorly injured at heads and lower limbs (Egboduku, 2015). 71.9% of victims of road crash are majorly 16 to 40 years in Abuja (Syney and Tom, 2017). Studies have shown that motorcycle riders are the majority of crash victims. Motorcycle crash is majorly with a car due to hurry and not paying attention to road signs. While 43% motorcycle crash are either with other motorcycle riders, pedestrians, animals or objects, or motorcycle alone on the road. Head injury are common among the motorcycle riders due to lack of the use of helmets, while the lower limb fracture are most common injury (one –third of the victims), Dongo *et al.* (2013). The appropriate application of helmet can reduce the risk of fatal injuries by 42% and risk of head injuries by 69% (WHO, 2018). Commercial motorcycles and tricycles also aggravate culture of intolerance, aggression, and indiscipline, and reckless driving. It brings about shifting from traditional trekking and cycling to commercial motorcycle riding. Rasheed (2013) observes in Ibadan that it has been used by gangs for criminal act like kidnapping and robbery, consumption of hard drug, and other social crisis. Sanusi and Emmelin, 2015; Jubril *et al.*, 2018 confirmed that commercial tricycle and motorcycle have resulted in culture of impunity, kidnapping, ritual killing and other vices in Mushin, Osodi-Isolo, Ajeromi-Ifelodun, Lagos Island and Ikorodu Local Government areas of Lagos.

Federal Road Safety Corps 2019 corporate strategic Goal One is to reduce road traffic crash by 20%, and reduce by 25% the rate of fatality. If the traffic laws

to check the drink-driving, speed limit, helmet and child restraints are obeyed; there will be reduction in road traffic fatalities and injuries (WHO, 2018). Enforcement of law, orientation, and caution of riders can go a long way in reducing the hazard (Sanusi and Emmelin, 2015; Peden 2004; Solagberu, 2006; Jubril *et al.*, 2018). Without the necessary prevention, road crash will occupy the fifth position in the cause of mortality by 2030 (Bowman *et al.*, 2013; WHO, 2015; Muhammed, 2017).

Today many states in Nigeria have introduced tax-cabs in order to address unemployment, reducing poverty, empowering youth, and to supplement the ban of commercial motorcycle (*Okada*). For instance Alao Akala introduced intra-city taxi in Ibadan in October, 2009 (Rasheed, 2013). There have been dichotomies between the government authorities and *Okada* riders especially over banning of *Okada* in some states or major streets of some states of Nigeria. For example, Lagos State Government under the leadership of Governor Babatunde Fasola restricted the movement of commercial motorcycle from plying 470 roads out of 9, 100 roads in the state which was attributed to security. Attempt to enforce traffic law by police sometimes ensuing clashes between commercial riders and police. Motorcycle Transport Union of Nigeria (MTU), National Association of Tricycle and Motorcycle Owners and Riders (NATOMOR), and All Nigerian Autobike Commercial Owners and Workers Association (ANACOWA) then sued the state government for restricting their movement in certain areas and at certain period of time (Vanguard Paper, 11th August, 2012; Muhammed, 2015). Driving or riding without putting on

helmet, and carrying more than one person on bike is proposed to be highly prohibited in Lagos State (Premium Times, 2019). Some researchers like (Sanusi and Emmelin, 2015; Jubril *et al.*, 2018; Rasheed, 2013) have suggested that effective policies should be made in controlling the activities of commercial motorcycle in Lagos State. Ipingbemi and Adebayo (2016) in their findings suggested that any traffic officer caught exploiting the riders should be prosecuted, provision of designated parking for tricycles, and incorporated of tricycle into urban transport planning in Ibadan.

It has been the focus of the world that the cities must be sustainable and the transport sector can play significant roles as it has been stated in SDGs 11 (Target 11.2). Sustainability in urban transport must be achieved environmentally, socially and economically (Cervero, 2013; Sustainable Development Goals, 2015). Despite the hazard associated with tricycle and motorcycle for commercial transportation in our cities, high unemployment rate engendering poverty has forced many to go into commercial motorcycle riding operation. Also the deplorable situation of our roads which makes it more difficult for taxi cabs/ buses to ply certain routes is a veritable reason for the operation of commercial tricycle and motorcycle operation because of their flexibility (Rasheed, 2013). Though, a number of studies have been carried out on commercial motorcycle operation. The peculiarity of Orile- Iganmu axis of Lagos State in terms of high rate of accidents involving commercial tricycle and motorcycle operators and commuters and chaotic transport problem in the area calls for attention. The research questions are anchored on the SDGs 11 Target 11.2 that if commercial motorcycle and tricycle are

socially accepted due to the circumstance in Nigeria, to what level is the economic advantage to reduce poverty as a means of livelihood and what is the degree of vulnerability to hazard risks associated with the operation. Vulnerability, according to (Neil, 2006) is the state of susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt.

In order to answer these questions this study was carried out at Orile-Iganmu axis. For transport service to help operators and commuters to meet their daily needs without compromising their health and lives, it is essential to assess the operation of commercial motorcycle and tricycle riders' livelihood and hazard vulnerability so that the benefit can be increased while hazard vulnerability is kept at bay.

Study Area

Orile-Iganmu is one of the settlements in Surulere Local Government Area. Surulere is one of twenty local government areas in Lagos State. It shares boundary with Mushin in the North, Amuwo Odofin in the West, Lagos Mainland in the East, and Ajeromo/Ifelodun Local Government in the South. It is located between Latitude $6^{\circ} 27' 54''$ N and $6^{\circ} 32' 30''$ N; and Longitude $3^{\circ} 15' 21''$ E and $3^{\circ} 29' 8''$ E of Greenwich Meridian (see Figure 1). Orile Iganmu is both residential area and commercial area in the core part of Lagos State, Nigeria. At the last census held in 2006, there were 1, 274, 362 people, and with population growth of 2.6%, the 2018 estimated population was 1, 734,050 inhabitants in Surulere Local Government. There are also high commercial transport activities especially commercial motorcycles and tricycles in Orile-Iganmu, and entire Surulere Local Government.

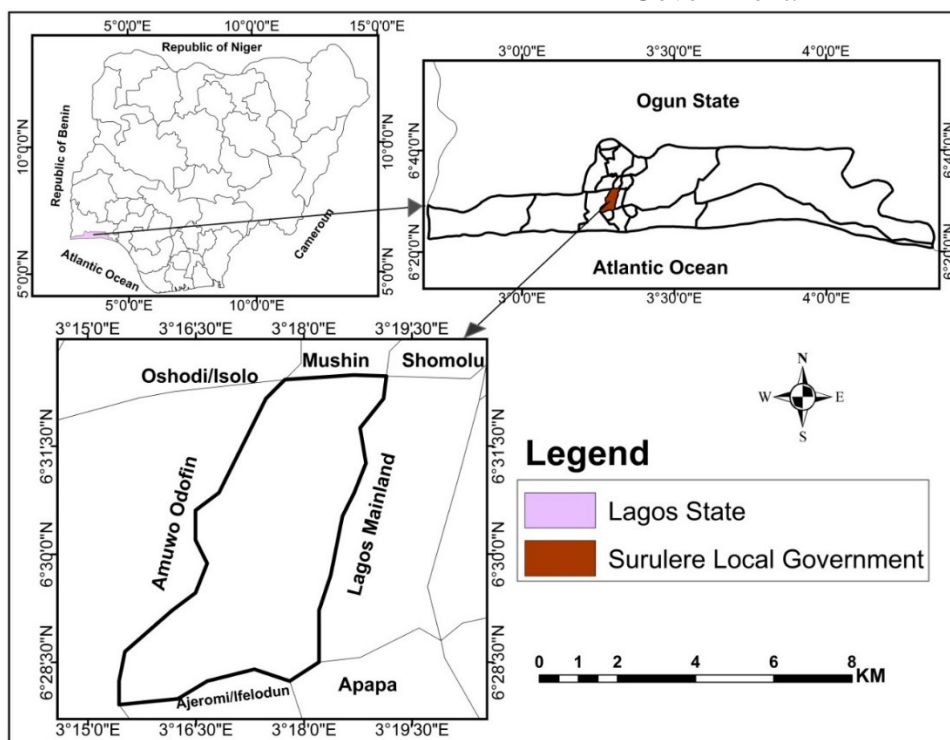


Fig. 1: Surulere Local Government

Methodology

Both purposive and random sampling techniques were used in this study. All twenty-five identified terminals were purposively selected to ensure that the study area was well covered. This constituted ten terminals for tricycle, and fifteen motorcycle terminals. Based on data got from tricycle and motorcycle association, Orile-Iganmu Branch showed that there were 134 registered tricycles, and 250 motorcycles in the area. Different scholars have recommended different percentages for appropriate sample size especially from 10% to 20% such as Johnson (1959); Ogunsanya, (1987); but Anthony (2003) claimed that sample size should be based on budget consideration which is deemed measurable and reliable by the researcher. For this study, 25% of the registered commercial tricycle riders and motorcycle riders were sampled from different terminals. Therefore, 35 tricycle riders and 63 motorcycle riders making 98 riders were sampled across twenty-five terminal in proportionate to their size. The questionnaires were administered to the riders in each terminal using simple random sampling. In all, a total of 98 questionnaires were administered.

Statistical Package for Social Scientist (SPSS) was used for both descriptive analysis such as pie chart and frequency table; and inferential analysis such as Analysis of Variance (ANOVA) to establish variation in hazard vulnerability in the area, and Correlation to determine the relationship between hazard risk and vulnerability to accident. The International Poverty Line which defines earning below \$ 1.90 and \$ 3.10 per day as being extremely and moderately poor respectively is used to determine poverty level.

Results and Discussion

Socio-economic Characteristics of the Respondents

This sub-section showed the socio-economic attributes such as sex, nationality, age, and marital status of the riders. Table 1 revealed that 91.8% of the riders are males while 8.2% are females. It showed that more males are actively engaged in commercial motorcycle and tricycle operation than the female counterparts. 95.9% of the riders of motorcycle and tricycle are Nigerians while 4.1% are None-Nigerians. This connotes that foreigners are engaged in commercial motorcycle and tricycle riding in Nigeria as it is corroborated with the findings of Rasheed (2013) in Ibadan.

Table 1 also depicted the age distribution of the respondents that 1% of riders are within the age bracket of 18 years or less. Only 26.8% are from age of 18 years to 25 years; 41.8% are from age of 26 to 35 years; 15.3% are within the age range of 36 to 45 years; 10.2% of the riders are 56 to 65 years while 3.1% are 65 years and above for the riders. This is an indication that many of the riders are still in their active age as 83.9% of the riders are younger than 45 years. In considering the marital status of the riders: 32.7% are single, 49% are married, 8.2% are divorced and 10.2% are widowed. It could be inferred that majority of the riders are married, and their children and wives depend on them for their survivals as mean household size of the riders is five. Table 1 also showed that 15.3% of the riders are illiterate, 12.2% possess primary education, 37.8% have secondary education, 21.4% have ND/NCE and 13.3% have HND/B.Sc. 34.7% of higher education found among the riders might be as a result of difficulty in securing white collar job and revealed the reality of

both unemployment and under employment situation in Nigeria. With 72.5 % having not less than secondary education, the findings tallies with the findings of Ipingbemi and Adebayo (2016) that 73.4% of commercial motorcycle and tricycle riders possessed qualification of not less than secondary school level in Ibadan, confirming that underemployment and unemployment are endemic across cities in Nigeria.

Table 1: Socio-economic Characteristics of the Respondents

VARIABLES	RIDERS	
SEX:	F	%
Male	90	91.8
Female	8	8.2
Total	98	100
NATIONALITY:		
Nigerian	94	95.9
None-Nigerian	4	4.1
Total	98	100
AGE:		
Less than 18 Years	1	1.0
18 to 25 Years	28	28.6
26 to 35 Years	41	41.8
36 to 45 Years	15	15.3
56 to 65 Years	10	10.2
Over 65 Years	3	3.1
Total	98	100
MARITAL STATUS		
Single	32	32.6
Married	48	49
Divorced	8	8.2
Widowed	10	10.2
Total	98	100
LEVEL OF EDUCATION:		
No Formal Education	15	15.3
Primary Education	12	12.2
Secondary Education	37	37.8
ND/NCE	21	21.4
HND/BSc	13	13.3
Total	98	100
MEAN HOUSEHOLD SIZE:	5	

Poverty Level of the Commercial Riders and Reasons for their Operation

Number of years spent on the job is an indication of how long the category of people in this sector have been toiling in the business to keep soul and body together and to sustain their family and also revealed the waiting time to get better options of livelihood. As much as 69.4% have engaged in riding for 1 to 5 years, and 8.2% engaged for 6 to 10 years; while only 20.4% of the riders have engaged in commercial riding in less than 1 years, , and 2% engaged for 11 to 15 years as commercial motorcycle and tricycle operator (Table 2).

The reasons given for their engagement include: unemployment (31.6%), to raise money to either establish business or pay school (15.3%) and to make a living (24.5%); while 27.6% were engaged in commercial operation as their last hope. Thus, it could be concluded that many young able body people take to commercial motorcycle and tricycle serves as a means coping strategy in the reality of increasing unemployment in the country.

Income is an integral measure or determinant of livelihood. Table 3 expressed the level of daily mean net income of motorcycle and tricycle riders against International Extreme Poverty Line of (1.90 dollar per day); and International Moderate Poverty Line of (\$ 3.10 per day) at exchange rate of 363 Naira to \$ 1 as at February 2019. The finding revealed that none of the motorcycle and tricycle riders' net income is below extreme poverty lines (\$ 1.90). But 64.3% of the motorcycle riders are earning below \$ 3.10 per day (moderate poverty). Irrespective of poverty line, 35.7% and 100% of the motorcycle and tricycle riders' net incomes respectively

are above \$ 3.10 dollar per day. However with an average household members of five (see Table 1) coupled with high cost of living in Lagos, Table 3 showed that more than half of commercial motorcycle riders' households (82.7%) and tricycle riders' households (92.8%) are in extreme poverty as their per capita income below \$ 1.90 per day. This indicates that only 17.3% and 7.1% of the motorcycle and tricycle operators respectively earn income that could escape household of five members from extreme poverty but not out of moderate poverty as none of the riders' per capita income is above \$ 3.10. As per capita income of the each rider could not cater for daily needs of every member; and any involvement in hazard especially accident can render riders and their family into chronic poverty as a

commercial rider's income is not substantial to cater for any emergency.

Table 2: Years and Reasons for Operation

Variables	Frequency	Percentage
Years of Riding:		
Less than 1 Years	20	20.4
1 to 5 Years	68	69.4
6 to 10 Years	8	8.2
11 to 15 Years	2	2
Total	98	100
Reasons for Operating Commercial Vehicle:		
Last hope	27	27.6
Unemployment	31	31.6
Raising Money	15	15.3
Making a Living	24	24.5
No Assistance	1	1
Total	98	100

Table 3: Daily Mean Net Income of Operators and Per Capita Income at Household Level

Motorcycle Operators			Tricycle Operators		
Net Income in: Naira (Dollar)	Per Capita Income in: Naira (Dollar)	% of Riders	Net Income in: Naira (Dollar)	Per Capita Income in: Naira (Dollar)	% of Riders
1000 (2.76)	200 (0.6)	64.3	1500 (4.13)	300 (0.83)	76.5
1500 (4.13)	300 (0.8)	1.0	2000 (5.51)	400 (1.10)	1.0
2000 (5.51)	400 (1.1)	4.1	2400 (6.61)	480 (1.32)	1.0
2300 (6.34)	460 (1.3)	1.0	2500 (6.89)	500 (1.37)	5.1
2500 (6.89)	500 (1.37)	5.1	2800 (7.71)	560 (1.54)	2.0
2700 (7.44)	540 (1.49)	1.0	3000 (8.27)	600 (1.65)	6.1
2800 (7.71)	560 (1.54)	2.0	3100 (8.54)	620 (1.71)	1.0
3000 (8.27)	600 (1.65)	3.1	3500 (9.64)	700 (1.93)	3.1
3200 (8.82)	640 (1.76)	1.0	3600 (9.92)	720 (1.98)	1.0
3500 (9.64)	700 (1.93)	3.1	4000 (11.02)	800 (2.20)	3.1
3600 (9.92)	720 (1.98)	1.0			
3800 (10.47)	760 (2.09)	1.0			
4000 (11.02)	800 (2.20)	12.2			

*At exchange rate of 363 Naira per US Dollar as at February 2019

**At 5 Member per Household

Risk and Hazard Vulnerability of Commercial Motorcycle and Tricycle Operators

The level of risks taken in term of none compliance to traffic rules and safety such as over-speeding, none- use of helmet or belt, wrong over taking, disobeying of traffic light, and not using appropriate weather cloth are considered in this subsection. Sanusi and Emmelin (2015) also find out that ignorance of traffic code by commercial riders aggravate their risks. Table 4 revealed that 11.1% of motorcycle operators agree that commercial riding of motorcycle is not risky, while it is less risky for 22.2%, and more risky for 66.7%. While considering tricycle, 22.8%

of the tricycle riders agree that tricycle riding is not risky, 28.6% opine that it is less risky, 48.6% notice that it is more risky. This shows that motorcycle (66.7%) is more risk than tricycle (48.6%). Starkey (2011) and Amend and Ransain (2018) observe that commercial motorcycles and tricycles are very risky. In order to ascertain significance of the variation in the risk factor, ANOVA result showed that F-observed value of 1.321 which is less than F-critical value of 1.64 at $F_{0.05, 24, 73}$ indicates that there is no significant variation in the level of risk of commercial use of tricycle and motorcycle across the terminals in the study area (Table 5).

Table 4: Rate of Risk Taken among Commercial Riders of Motorcycle and Tricycle

	Motorcycle		Tricycle		Both	
Rate of Hazard Risk:	F	(%)	F	(%)	F	(%)
Not Risky	7	(11.1)	8	(22.8)	15	(15.3)
Less Risky	14	(22.2)	10	(28.6)	24	(24.5)
More Risky	42	(66.7)	17	(48.6)	59	(60.2)
Total	63	(100)	35	(100)	98	(100)

Table 5: Analysis of Variance (ANOVA) for Level of Risk of Commercial Use of Motorcycle and Tricycle across the Terminals

ANOVA					
Level of Risk					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	29.916	24	1.247	1.321	0.182
Within Groups	68.900	73	0.944		
Total	98.816	97			

The hazard vulnerabilities that are considered among the riders are accident, ailment, and exposure to harsh weather. Figure 2 depicted that 60.2% of the riders did not involve in accident while only 39.8% did. But in considering the reasons behind the accident, Table 6 showed that 13.3% of the riders involve in accidents due to over speeding, 4.15% involvement is as a result of bad motorcycle/tricycle condition, 15.2% of respondent's accident

is due to poor road, and 7.1% is as a result of carelessness/mistake. This is corroborated with the findings of Sanusi and Emmelin (2015); Peden (2004); Jubril *et al.*, (2018) that reckless riding, over-speeding and inadequate experience contribute to accidents among riders. There is significant positive relationship between the level of risk taken by the riders and the level of their involvement in accident (Table 7). Therefore there is need

to minimize the risks among the riders in order to reduce the level of accidents among the riders. This has been noticed by scholars that without the necessary prevention, road crashes will occupy the fifth position in the cause of mortality by 2030 (Bowman *et al.*, 2013; WHO, 2015; Muhammed, 2017). Taking their exposure to harsh weather into account, 37.8% of both riders of motorcycle and tricycle did not expose themselves to harsh weather; 15.5% of riders are exposed to cold weather, 32.7% are affected by high sunshine; 10.2% face the challenge of dusty weather and 4.1% are disturbed by drizzle/rainfall (Figure 3 and Table 6). Their exposure to harsh weather is an

indication of high vulnerability to health hazard associated with ailment as 38.8% have catarrh and cough as their common ailment, 44.9% have malaria and headache as their common ailment and 13.3% of the riders' common ailment is general weakness of the body, and only 3.1% do not have any ailment (see Table 6). It shows that the health of the commercial motorcycle and tricycle is at risk, if 96.9% of the riders have common ailment and are still exposed to harsh weather. There is need to apply preventive measures such as put-on of thick cloth during the cold weather, and avoiding of working under the intense sunshine.

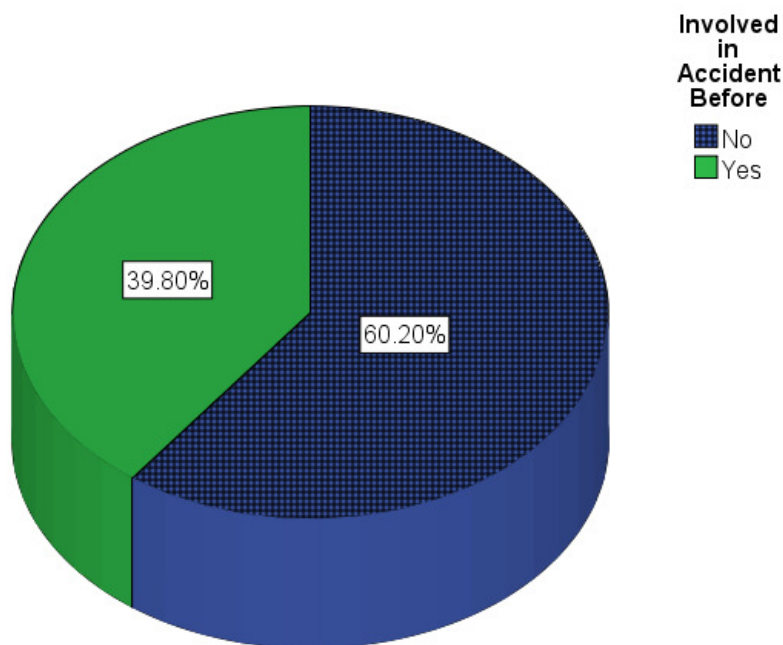


Fig. 2: Involvement of Riders in Accident

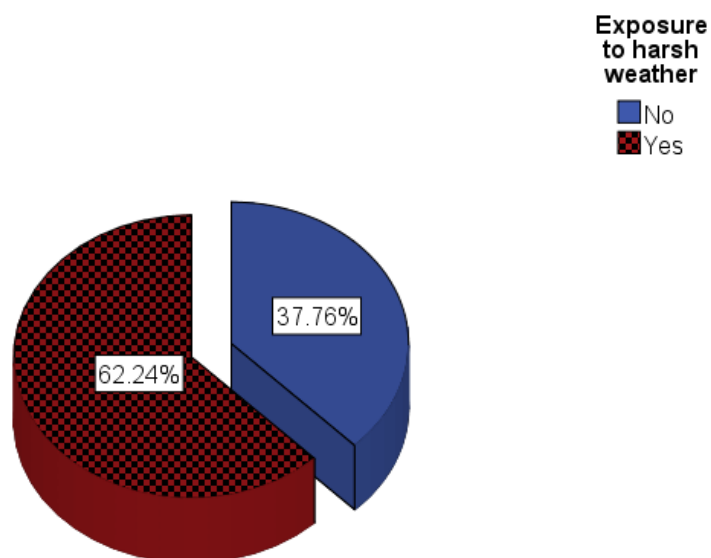


Fig. 3: Exposure to Harsh Weather

Table 6: Vulnerability to Accident, Common Ailments, and Exposure to Harsh Weather

	Frequency	Percentage
Causes of Accident:		
Not Involved in accident	59	60.2
Over speeding	13	13.3
Vehicle Condition	4	4.1
Poor road Network	15	15.3
Mistake	7	7.1
Total	98	100
Common Ailment:		
No Ailment	3	3.1
Catarrh and Cough	38	38.8
Malaria and Headache	44	44.9
General weakness of the Body	13	13.3
Total	98	100
Weather Exposed to:		
No Harsh weather	37	37.8
Coldness	15	15.3
High Sunshine	32	32.7
Dusty Weather	10	10.2
Drizzle/Rainfall	4	4.1
Total	98	100

Table 7: Relationship between Level of Risk Taken and Level of Involvement in Accident

Correlations			
		Rate of Risk	Level of occurrence of accident among riders
Level of Risk	Pearson Correlation	1	0.689**
	Sig. (2-tailed)		0.000
	N	98	98
Rate of occurrence of accident among riders	Pearson Correlation	0.689**	1
	Sig. (2-tailed)	0.000	
	N	98	98
** Correlation is significant at the 0.01 level (2-tailed).			

Constraints and Possible Solutions of Commercial Use of Motorcycle and Tricycle

Table 8 revealed that 6.1% see the high cost of vehicle parts and fuel as major problems; and bad roads is pointed by 24.5% of the riders as a challenge facing commercial tricycle and motorcycle, while traffic congestion is problem identified by 16.3% of the riders; 13.3% view illegal money (extortion) collected by thugs and association such Amalgamation of Commercial Motorcycle Riders Association of Nigeria (ACOMORAN) and National Union of Road Transport Workers (NURTW) as threat to their livelihoods. 3.1% believe that commercial use of motorcycle and tricycle damages the health of the riders, 33.7% of the riders agree that they face all identified problems as far as they are concerned. From the results, it can be concluded that bad road network is the greatest challenge faced by both operators of motorcycle and tricycle in Orile-Iganmu, followed by traffic congestion which is also a growing challenge in many other urban cities across the country. Extortion by security officers and health damage accounts for the least challenge.

It is very imperative to provide remedy to those problems in order to achieve sustainable transport service for both the riders and passengers. Table 8 thus showed a number of possible solutions suggested by the riders to the aforementioned problems. 25.8% suggests good road network, 12.2% opt regular traffic control by traffic officers, 11.2% point to ban or caution of thugs (*Agbero*) and ACOMORAN, 3.1% believe in creation of more job opportunities by both the government and private organisations, 4.1% view subsidizing of fuel price, 4.1% wants a stop to bribe collected by police officers on the roads, and 2% suggest a regular rest as well as regular medical check-up, 37.8% see all as ways of alleviating problems facing commercial transport in the study area. This study infers that a greater number of the riders are of opinion that a solution to motorcycle is multi-facet but specifically point that a good road network is highly needed in promoting commercial motorcycle and tricycle operation in Orile-Iganmu Area. This can complement the recommendation of W.H.O. (2018) that application of helmet could reduce the risk of fatal injuries by 42% and risk of head injuries by 69%.

Table 8: Constraints and Possible Solutions Commercial Use of Motorcycle and Tricycles

	Motorcycle		Tricycle		Both	
Problems Encountered by Riders:	F	(%)	F	(%)	F	(%)
All identified Problems	18	(28.6)	15	(42.9)	33	(33.7)
Bad Roads	14	(22.2)	10	(28.6)	24	(24.5)
High Cost of vehicle's parts and Fuel	4	(6.3)	2	(5.7)	6	(6.1)
Traffic Congestion	11	(17.5)	5	(14.3)	16	(16.3)
Collection of Money by Thugs and NURTW	11	(17.5)	2	(5.7)	13	(13.3)
Bribe Collected by Police	3	(4.8)	0	(0)	3	(3.1)
Health's Damage	2	(3.2)	1	(2.9)	3	(3.1)
Total	63	(100)	35	(100)	98	(100)
Solution Suggested by Riders:	F	(%)	F	(%)	F	(%)
All identified Solution	21	(33.3)	16	(45.7)	37	(37.8)
Good Road	14	(22.2)	11	(31.4)	25	(25.5)
Regular Traffic Control	9	(14.3)	3	(8.6)	12	(12.3)
Caution of Area Boys and NURTW	10	(15.9)	1	(2.9)	11	(11.2)
Creation of Job	2	(3.2)	1	(2.9)	3	(3.1)
Subsidizing of Fuel Price	2	(3.2)	2	(5.7)	4	(4.1)
Stop Collection of Bribe by Police	4	(6.3)	0	(0)	4	(4.1)
Regular Rest and Check-Up	1	(1.6)	1	(2.9)	2	(2.1)
Total	63	(100)	35	(100)	98	(100)

Conclusion

Motorcycle (*Okada*) and tricycle (*Keke Napep*) transportation has become essential means of living or an auxiliary for many people especially in Orile-Iganmu Area, in Lagos State. Many of the riders taking risks in term of none compliance to traffic rules and safety such as over-speeding, irregular use of helmet or belt, wrong over taking, disobeying of traffic light, and use of inappropriate weather cloth. This has ignited their vulnerability to hazard. This study infers that there is no significant variation in the level of risk of commercial use of tricycles and motorcycles across the terminals in the study area. Commercial motorcycle and tricycle riders are exposed to harsh weather condition and as such making them more vulnerable to health hazards with high social cost implication in the health sector. There is significant positive relationship

between the level of risk taken by the riders and the level of their involvement in accident. This study shows that though motorcycle and tricycle operators' net income is above 1.90 dollar per day; this does not put them out of poverty as average number of household depend on their income is high which makes their per capita income to below extreme poverty line. Any involvement in hazard especially accident and sickness that require huge money will render them into chronic poverty. Many of the riders believe that the problems facing commercial motorcycle and tricycle operators should be tackled from all angles, and a good road network is highly needed in promoting commercial motorcycle and tricycle operation as their livelihoods, and to reduce their vulnerability to hazard in Orile-Iganmu in Lagos State. This study thus concludes that hazard vulnerability can be minimized

through construction of good roads, regular traffic control, obedience to traffic rules, regular rest and medical check-up so that commercial motorcycle and tricycle's riders can meet their daily needs without compromising their health and lives, and that of the commuters. As these have also been suggested by many researchers and international bodies such as (WHO, 2018; and Ipingbemi and Adebayo, 2016) that the activities of tricycle and motorcycle riders should be incorporated to urban transport planning.

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