

Assessment Of The Ways Of Reducing Accidents Associated With Motorcycle As A Means Of Transportation In Bariga Local Government Area Of Lagos State, Nigeria.

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ABSTRACT: *This research work is aimed at assessing ways of reducing accidents and hazards associated with motorcycle as a means of transportation. A cross sectional descriptive survey was carried out using administration of structured questionnaires for data collection to know the major reasons for adopting motorcycle as a means of transportation and also to determine the practice of people towards taking safety measures during the transportation, with a view of making recommendations on ways to reduce the associated road accidents. Statistical Package for Social Sciences (SPSS) version 17.0 was used to analyze the data collected and also to generate frequency for the responses. Chi Square independent test was used to determine the knowledge and practice of people towards motorcycle as a means of transportation. The results of this research showed a positive attitude of people in Lagos State towards motorcycle as a means of transportation. 86% of the people agreed that motorcycle was a very important means of transportation. 64% of those interviewed take motorcycle regularly and 33% take it occasionally. 57% take it because it is fast. The respondents agreed that the major reason for adopting motorcycle as a means of transportation is because it is fast. 79% of the respondents have seen accidents associated with motorcycle before, while the major cause of accidents is due to over-speeding (83%). Good orientation, use of helmet, Educational status, the number of passengers taken by the cyclist will reduce accidents associated with motorcycle as a means of transportation. This research work has been able to prove that good orientation, use of helmet and other safety measures will reduce accidents associated with motorcycle. Educational status and the number of passengers carried by the motorcyclist will reduce accidents associated with motorcycle. This research work has brought into lime light people's knowledge, attitude and practice of safety measures towards motorcycle as a means of transportation in affirming that training of the cyclists, issuing licence to only qualified cyclists, repairing bad roads, compulsory wearing of helmet are ways to improve motorcycle as a means of transportation.*

KEYWORDS:- *Accidents, Motorcycle, Transportation, Safety measures.*

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I. INTRODUCTION

Transportation was defined as a means whereby people and goods are moved from one place to another (Johnson Ugoji, Anyaele, 2003). Also, transportation was defined by Longe O. A. (2008) as the process of conveying goods and people from one place to another either through water, road, rail or air. He further defined transportation simply as the movement of goods and people from one place to another. Furthermore, transportation was defined by Oxford Advanced Learner's Dictionary as the system for carrying people or goods from place to place using vehicles, road, air etc. According to Longe O. A. (2008) there are three (3) major means of transportation which are:

- i. Air transportation
- ii. Water transportation
- iii. Land transportation

From all these means of transportation, the cheapest and commonly used is transportation by land, either through a well constructed road or narrow path. In Nigeria, (Johnson Ugoji, Anyaele, 2003) stressed that land transportation is used for the carriage of 70% of cargos and goods; in fact it is a popular means of transporting people from one place to another. Longe O. A. (2008) says "land transportation can be divided into two major types which are rail and road transportation. He therefore defined road transportation as the movement of goods and passengers on road by the use of motor vehicles, buses, trailers, cars, motorcycles, bicycles, tricycles etc. He equally defined rail transportation as the means of conveying people and goods through the use of train. He stressed that road transportation is the most extensively used of all means of

transportation. In some decades ago in Nigeria, bicycles, motor vehicles and few numbers of motorcycles were on our roads but in recent times, the number of motorcycles has been on the increase in both rural and urban parts of the country. According to (Johnson Ugoji, Anyaele, 2003), road transportation has been known for ages to be associated with high rate of accidents, the cause of the accidents which can be traced to impatience of drivers, overloading, not obeying traffic rules, illiteracy or semi-illiterate nature of drivers who can neither read nor interpret road signs and also the physical and mental states of the drivers while on the road.

For the purpose of this research work, the knowledge, attitude and practice of people towards motorcycle as a means of transportation would be discussed and analyzed using the data collected.

A motorcycle is a two wheeled powered by an engine that wheels are in line and at higher speed, it remains upright and stable while at lower speed, continual readjustment of the steering by the rider gives stability. The rider sits astride the vehicle on a seat with hands on a set of handle bars which are used to steer the motorcycle. The steam engine motorcycle was first invented in 1867 by Sylvester Howard Roper, who is an American. In 1885, the first petroleum gas powered engine motorcycle was first invented by Grottied Daimler. This used a four stroke internal combustion engine which was invented in 1976 by Nicholas August Offo. (Walker, Mick, 2006)

In the year 1903, William Harley with Arthur and Walter Davidson invented the high performance engine motorcycle which was used to win races. This bought them brand name and recognition and later started the mass production for the public. (Jim Noss, 2002)

Motorcycle was introduced in Nigeria during the colonial eras in the 40's for the use of the police and middle class servants. However, in the 70's oil boom saw a phenomenal increase in the number of motorcycle as many as low income workers could afford it. Motorcycles are seen everywhere in recent times, used by both men and women, but the cyclists are more of men than women compared to what is obtained in UK and USA. (Russel, Combell, Ashel and Jackson 2002).

Brief History Of Lagos

Lagos is a city that lies on the South-Western Nigeria, on the Atlantic coast in the Gulf of Guinea, West of the Niger River.

Michael J. C. Echenuo (1994) stressed that Lagos is known to be a commercial, financial and business centre, country's wealth and headquarters of big corporate firms are located in Lagos. Therefore, Lagos has the highest standard of living compared to other cities in Nigeria, as well as in Africa at large. Lagos is known to have the highest and most expensive road network in West Africa. Highways are usually congested in peak hours due to its explosive population growth. Lagos is linked by many highways and bridges. Its strategic location have led to its being end point of three trans-African highway routes using Nigeria's national roads.

There are road regulating authorities in Lagos State which include the following:

- Federal Road Safety Corps (FRSC) which are on the major highways of Lagos State.
- Vehicle Inspecting Officers (VIO)
- Lagos State Traffic Maintenance Authority (LASTMA)
- The Nigeria Police Force which are mainly involved in checkmating the activities of the drivers and cyclists (TRAFFIC WARDERS).

It is crystal clear that motorcycle riders have no orientation on their profession. They only engage themselves in reckless and careless riding with no respect for code of conduct. (Jim Noss, 2002)

When motorcycle accidents occur, it is mostly associated with over-speeding, overloading, wrong overtaking or reckless riding consequences of which vary from mild, moderate to severe injury and at times even death of the motorcyclist or the passenger. Motorcycle accidents in recent times constitute largely to road traffic accidents. Issues like road signs and usage are most times mentioned for formality sake which motorcyclists and other road users do not take into consideration. (Johnson Ugoji, Anyaele, 2003)

To make road safety universally and to reduce road traffic accidents that are associated with motorcycle to the barest minimum. It would be expected that all categories of road users have at least a clear knowledge and understanding of basic safety measures which apply to the use of all roads. Issues such as the use of helmet by both the motorcyclists and passengers and other safety measures should be considered and put across to the motorcyclists.

Justification Of The Research

In the face of young people to get engaged in payable employment seems difficult; and the number of unemployed youth have been on the increase day by day. Most of these youths now engage themselves with transportation business especially motorcycle transportation. The increase in motorcycle as a means of transportation has been due to rapid increase in population, extension of settlement to areas far from commercial centres, bad roads etc.

It is good to focus on the activities of commercial motorcyclists and their passengers, the role they play in the society which is important because they spend their days on the road trying to go to many turns as fast as possible, so as to determine how much would be realized in a day and the success of their business.

In heavy industrialized areas of the country like Lagos State where traffic is usually heavy, hold ups and people go for motorcycle so as to meet up with appointments or to take them to places where motor vehicles cannot reach, the patronage of motorcycles has increased greatly. The attention of the motorcyclists is shifted to daily return and gain than the maintenance of the motorcycle which constitute a lot of danger to people's life.

Objectives Of The Research

The major objective of this research work is to identify the knowledge, attitude and practice of people in Lagos State towards motorcycle as a means of transportation using Bariga Local Government Area as a case study, with the view of making appropriate recommendations in improving this means of transportation and reduce associated hazards.

Specific objectives are:

1. To know the widespread of motorcycle as a means of transportation in Lagos State.
2. To know the major reasons for adopting motorcycle as a means of transportation.
3. To know the attitude of people towards the adoption of safety measures in motorcycle transportation.
4. To recommend ways of reducing accidents associated with motorcycle as a means of transportation.

Significance Of The Research

This research work was developed in investigating this problem of motorcycle associated hazards because the rate at which accidents occur in this means of transportation has been on increase day after day and there is no law guiding these people. In line with this, an attempt will be made in order to make possible suggestions so as to reduce road accidents associated with motorcycle as a means of transportation and to see all the safety measures that are involved.

This research will bring into lime light people's knowledge, attitude and practice towards this means of transportation and reveal whether motorcycle riders have good orientation that embodied recklessness and carelessness, respect for code of conduct, ethics of riding, road usage and use of helmet by both motorcyclists and passengers with other safety measures.

Furthermore, adequate recommendations will be given on how to improve motorcycle as a means of transportation.

II. MATERIALS AND METHODS

A cross sectional descriptive survey was carried out using administration of structured questionnaires for data collection to know the major reasons for adopting motorcycle as a means of transportation and also to determine the knowledge, attitude and practice of people towards taking safety measures during the transportation.

Statistical Package for Social Sciences (SPSS) version 17.0 was used to analyze the data collected and also to generate frequency for the responses. Chi Square independent test was used to determine the knowledge, attitude and practice of people towards motorcycle as a means of transportation. Three hundred and eighty five questionnaires were randomly administered to the people of the Local Government and two hundred and twenty four were recovered.

This sample size was determined using

$$n = \frac{Z^2 pq}{d^2}$$

Where n is the sample size of population greater than 10,000. Z is the normal distribution value which is 1.96, p is the prevalence which is approximately 0.5,

$$q = 1 - p = 1 - 0.5 = 0.5$$

d is the degree of accuracy which is 0.05

$$n = \frac{Z^2 pq}{d^2}$$

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2}$$

$$n = 384.16$$

Therefore, from the above calculation, the sample size for this research work is approximately 385 because the population of Bariga Local Government Area is greater than 10,000.

III. DATA ANALYSIS METHOD

Chi Square test was used to test the various hypotheses. Chi Square test is appropriate because the variables involved are categorical. Chi Square is denoted by the Greek letter χ^2 . This is used in testing a hypothesis having differences between a set of observed frequencies of a sample and a corresponding set of expected frequencies. It is a non – parametric test computed as:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

where χ^2 = Chi Square symbol

O is observed frequency

E is expected frequency

NOTE: All tests will be carried out using 5% level of significance

Data Presentation

Ages of the respondents

	Frequency	Percent
15 – 20 years	37	16.5
20 – 25 years	71	31.7
25 – 30 years	58	25.9
30 – 35 years	28	12.5
35 – 40 years	23	10.3
40 years and above	7	3.1
Total	224	100.0

Source:- author's field work (2012)

Sex of the respondents

	Frequency	Percent
Male	135	60.3
Female	89	39.7
Total	224	100.0

Educational Status of the respondents

	Frequency	Percent
None	15	6.7
Primary	18	8.0
Secondary	82	36.6
Post secondary	105	46.9
Total	220	98.2
Missing	4	1.8
Total	224	100.0

Religion of the respondents

	Frequency	Percent
Christianity	158	70.5
Islam	66	29.5
Total	224	100.0

Tribe of the respondents

	Frequency	Percent
Yoruba	101	45.1
Hausa	48	21.4
Igbo	75	33.5
Total	224	100.0

Marital Status of the respondents

	Frequency	Percent
Single	117	52.2
Married	101	45.1
Divorced	6	2.7
Total	224	100.0

Occupation of the respondents

	Frequency	Percent
Student	60	26.8
Civil Servants	48	21.4
Bankers	13	5.8
Motorcyclists	20	8.9
Business men / women	47	21.0
Others	36	16.1
Total	224	100.0
If respondents have a motorcycle	Frequency	Percent
Yes	79	35.3
No	143	63.8
Total	222	99.1
Missing	2	0.9
Total	224	100.0
If respondents have been transported by commercial motorcycle before	Frequency	Percent
Yes	203	90.6
No	21	9.4
Total	224	100.0
If the motorcyclist wears helmet	Frequency	Percent
Yes	163	72.8
No	57	25.4
Total	220	98.2
Missing	4	1.8
Total	224	100.0
If the respondent was offered helmet by the motorcyclist	Frequency	Percent
Yes	148	66.1
No	74	33.0
Total	222	99.1
Missing		0.9
Total	224	100.0
Number of passengers to be transported at once	Frequency	Percent
1	135	60.3
2	87	38.8
3	2	0.9
Total	224	100.0
Have you been involved in or ever seen accidents involving motorcycle before	Frequency	Percent
Yes	179	79.9
No	43	19.2
Total	222	99.1
Missing	2	0.9
Total	224	100.0
The major cause of motorcycle accident	Frequency	Percent
Over-speeding	83	37.1
Overloading	16	7.1
Wrongful overtaking	46	20.5
Lack of skills	32	14.3
All of the above	45	20.1
Total	222	99.1
Missing	2	0.9
Total	224	100.0
If the use of helmet can reduce head injury	Frequency	Percent
Yes	158	70.5
No	66	29.5
Total	224	100.0

If the motorcyclist obeys traffic rules	Frequency	Percent
Yes	80	35.7
No	144	64.3
Total	224	100.0
The age that respondent think should be for motorcyclists	Frequency	Percent
15 – 19 years	44	19.6
20 – 24 years	96	42.9
25 – 29 years	64	28.6
30 – 34 years	19	8.5
35 years and above	1	0.4
Total	224	100.0
If motorcyclists wear free flowing garments	Frequency	Percent
Yes	45	20.1
No	179	79.9
Total	224	100.0
How to improve motorcycle as a means of transportation	Frequency	Percent
Training of the cyclists	16	7.1
Good orientation	32	14.3
Repairing bad roads	32	14.3
Issuing licence to only qualified cyclists	12	5.4
Compulsory wearing of helmet	132	58.9
Total	224	100.0
How often respondent get transported	Frequency	Percent
Regularly	145	64.7
Occasionally	79	35.3
Total	224	100.0
If respondents get transported on major roads	Frequency	Percent
Yes	127	56.7
No	97	43.3
Total	224	100.0
Reasons why respondents take motorcycle	Frequency	Percent
It's faster	128	57.1
It's more comfortable	15	6.7
It takes me home	8	3.6
It's cheaper	6	2.7
Inadequate of other means of transportation	16	7.1
All of the above	51	22.8
Total	224	100.0

Source:- author's field work (2012)

Hypotheses Testing

Ho: Good orientation, use of helmet and other safety measures will not reduce accident associated with motorcycle.

H₁: Good orientation, use of helmet and other safety measures will reduce accident associated with motorcycle.

Level of significance (α) = 0.05

Pearson Chi-square = 24.94

P value = 0.015

Since $p < \alpha$, we reject H_0 and conclude that good orientation, use of helmet and other safety measures will reduce accident associated with motorcycle.

H_0 : Educational status and the reason why people think motorcycle can be improved will not reduce accident associated with motorcycle.

H_1 : Educational status and the reason why people think motorcycle can be improved will reduce accident associated with motorcycle.

Level of significance (α) = 0.05

Pearson Chi-square = 25.018

P value = 0.015

Since $p < \alpha$, we reject H_0 and conclude that educational status and the reason why people think motorcycle can be improved will reduce accident associated with motorcycle.

H_0 : Educational status and the number of passengers taken by the motorcyclists will not reduce accident associated with motorcycle.

H_1 : Educational status and the number of passengers taken by the motorcyclists will reduce accident associated with motorcycle.

Level of significance (α) = 0.05

Pearson Chi-square = 27.901

P value = 0.000

Since $p < \alpha$, we reject H_0 and conclude that educational status and the number of passengers taken by the motorcyclists will reduce accident associated with motorcycle.

H_0 : Educational status and the age that is best for the motorcyclist will not reduce accident associated with motorcycle.

H_1 : Educational status and the age that is best for the motorcyclist will reduce accident associated with motorcycle.

Level of significance (α) = 0.05

Pearson Chi-square = 20.77

P value = 0.0054

Since $p < \alpha$, we reject H_0 and conclude that educational status and the age that is best for the motorcyclist will reduce accidents associated with motorcycle.

IV. DISCUSSION OF RESULTS AND RECOMMENDATIONS

The results of this research showed a positive attitude of people in Lagos State towards motorcycle as a means of transportation. 86% of the people agreed that motorcycle was a very important means of transportation. 64% of those interviewed take motorcycle regularly and 33% take it occasionally. 57% take it because it is fast. The respondents agreed that the major reason for adopting motorcycle as a means of transportation is because it is fast. 79% of the respondents have seen accidents associated with motorcycle before, while the major cause of accidents is due to over-speeding (83%).

Good orientation, use of helmet, Educational status, the number of passengers taken by the cyclist will reduce accidents associated with motorcycle as a means of transportation.

It can be said that motorcycle as a means of transportation is very important in Lagos State. Most of the people of Lagos State are being transported by motorcycle, and the major reason for adopting it is that because it is fast. It also shows that over-speeding, impatience, overloading, bad road, wrongful overtaking are among the factors responsible for the associated accidents.

We recommend that there should be training for the motorcyclists, issuing of licence to only qualified cyclists, repairing of bad roads, carrying one passenger at a time and compulsory wearing of helmets as some of the ways to reduce accidents associated with motorcycle as a means of transportation.

REFERENCES

- [1]. Abe J.B. (2010): Sampling Techniques Charma Academy Ltd, 6th wing floor, Western House, 5/10 Broad Street Lagos State, Nigeria. Volume one.
- [2]. Johnson U. A., (2003): Comprehensive Commerce for Senior Secondary Schools, Longman, Lagos State, Nigeria.
- [3]. Jim Noss (2002): Owner of cycle solution motorcycle parts and accessories, Baltimore, Maryland Area, USA.
- [4]. Longe O.A. (2008): Essential Commerce for Secondary Schools third edition, Longman, Lagos State, Nigeria.
- [5]. Michael J. E. (1994): Lagos Life, Macmillan, pp124, Lagos State, Nigeria.
- [6]. Oxford University Press (2006): Oxford Advance Learner's Dictionary of Current English. Seventh Edition. Collin Makintosh, Joanna Turnbull Editors, England.
- [7]. Russel, Combell, Ashley and Jackson (2002): Driver road rule knowledge and attitudes towards cyclist, Australian Journal of primary health.
- [8]. Walker, Mick (2006): Motorcycle evolution, design, Passion publication Information, Baltimore Johns Hopkins University press, Maryland USA.

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