ASSESSMENT OF THE IMPACT OF THE BAN OF COMMERCIAL MOTORCYCLE OPERATIONS IN ABUJA CENTRAL AREA, NIGERIA

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Abstract

The significance of mobility to both developed and developing countries has prompted a grea amount of study into various forms of urban transit in which commercial motorcycle operations i. not an exception. With motorcycle operations being associated with an exponential rise in crim rate in major cities in Nigeria resulting to it ban in some Nigeria cities. This study assessed th impact of the ban of commercial motorcycle operations in four selected sampled areas in Abuj central area (i,e. Nyanya, Wuse, Garki, Asokoro and Maitama). A Survey research approache was adopted in which systematic random sampling technique was used to administere questionnaires to one out of every twenty operators and users of commercial motorcycles. A aggregate of 413 questionnaires were administered to operators and users with 394 returned vali from the selected sampled areas. Finding reveals that 70% of respondents sampled were male wit 40.1% between ages of 31-40 years. The simple linear regression used to assess the effects number of trips on average profit shows that the coefficient of determination $R^2 = 0.85$ (85%, ANOVA= 657.363, P<0.000 at 0.05 alpha level. Results also indicates that traffic violatio accounted for 42.8% of total variance of factors causing the ban while, 77.6% of users opined th the ban has led to delay and difficulties in accessing their destination. It is therefore recommende that an alternative and efficient mode of public transportation should be made available b government within the city centre to ease mobility.

Keywords: Assessment; Commercial; Motorcycle; Operation, Ban; Impact

1.0 Introduction

Transportation is essential to the existence and sustainability of any built-up society. It serves as the foundation for contact fo work, pleasure, and residential activitie while also helping as one of the driving force

in the establishment of early settlements (Silas, 2006). It is difficult to exaggerate the role of transportation in urbanization. This is due to the fact that transportation is an crucial element of all human activities and has a momentous impact on how civilizations are organized (Muhammad, 2011 & Olorunfemi, 2013). Road transportation continues to be the primary mode of movement for people, commodities, and services in Nigeria (Adewoye *et al.*, 2009).

In developing cities with low car ownership, dependence on public transportation is strong, notwithstanding the fact that the financial health and performance of all kinds of government-organized public transportation, whether state or privately owned, are waning (Silas, 2006). People and the market have been struggling to find inventive solutions to meet daily travel demands as a result of this dilemma. In the quest of these options, non-conventional modes of public transportation have exploded in popularity, initially offered by minibuses and shared taxi/vans, and more recently by commercial motorcycle (Olobomehin, 2012). Para-transit options, have become the dominant method of public transportation, but they also have significant drawbacks in terms of negative externalities created from a broad public welfare viewpoint (noise, safety, pollution etc.) as opined by Olobomehin, 2012.

Motorcycle manufacturing in the globe is estimated to be over 45 million per year, with a growth rate in between 12% and 30% in Africa (Oginni et al, 2006). In Nigeria, for instance, the government's failure to supply conventional forms of transportation has forced the use of motorcycles (two-wheeled autos) and tricycles (three-wheeled automobiles) to move people, goods, and services in dangerous and accident-prone situations (Oginni et al, 2006). There is no refuting that commercial motorcycle operators have certain hitches. Commercial motorcycle operators in Abuja Metropolis are intermittently subjected to unwarranted police harassment (Onoyo, 2004 & Sumaila, 2012). Stigmatization is also common among commercial motorbike operators in the society, due to the fact that they are commonly viewed as less significant members of society (Olobomehin, 2012). Another problem not to be overlooked among commercial motorcycle operators is health-related danger. They are often open to extreme weather, putting their health at danger. As a result of hefty registration fees, some commercial motorbike operators find it difficult to join unions (Olobomehin, 2012).

2.0 The Need for the Research

The importance of mobility to both developed and developing countries has encouraged a great amount of study into diverse forms of urban, with motorcycles being a popular option, particularly in developing countries (Muhammad, 2011). The use of commercial motorcycle widely called ``Okada`` in local parlance to spread criminal operations has stemmed into massive losses of lives and properties (Bassey, 2009). Aside from defiance to traffic laws, Ofuonyeadi (2008) and Okache (2010) opined that commercial motorcyclist were alleged of murder, theft, stealing of handbags and mobile phones, rape, kidnapping, and ritual killings on a regular basis. In Nigeria, crimes involving commercial motorcyclists have been on the rise (Aborisade 2010; Ukwayi 2013). The regularity with which these crimes occur has become a serious source of concern, not just for the government but also for the general public.

The exponential upsurge in crime associated with the usage of motorcycles as a means of commercial form of transportation has instilled anxiety in commuters, since it appears to be more impossible to separate between legitimate commercial motorcycle operators and criminals. Consequently, Commercial motorcycles have been banned from operating in Abuja central area. The prohibition was enacted in an ongoing attempt to decrease traffic congestion in Abuja central area and to cut incidents of violent crime around the city, particularly armed bandits who use motorbikes to commit terrible crimes. The ban has brought difficulties on both users and riders but to what extent?

The study was designed within this context in order to measure the impact of the banned commercial motorcycle operations in Abuja Central Area on riders and passengers. The findings thereby will provide useful information which will promotes the frontiers of knowledge in helping urban transport planning managers and other stakeholders in formulating policies which would ensure efficient urban transport operations and safety of lives.

3.0 Literature Review

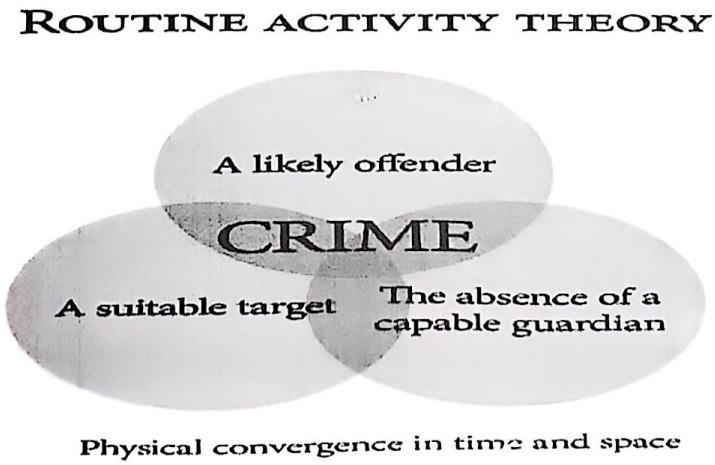
3.1 Routine Activity Theory

The Cohen and Felson's Routine Activities Theory (RAT) of 1979 is one of the ideas of environmental criminology. According to Routine Activity Theory, three specific necessities must be met in order for a crime to be committed. These requirements include; the presence of a motivated criminal

an appropriate target, and the lack of a skilled guardian. Routine activity theory relies on the same rational choice methodology as situational crime prevention techniques. The concept of regular activity theory is heavily influenced by an individual's overall lifestyle. The idea that people are more likely to commit illegal activity if they are exposed to criminal behaviour in their daily lives has been put to the test through several experiments and surveys.

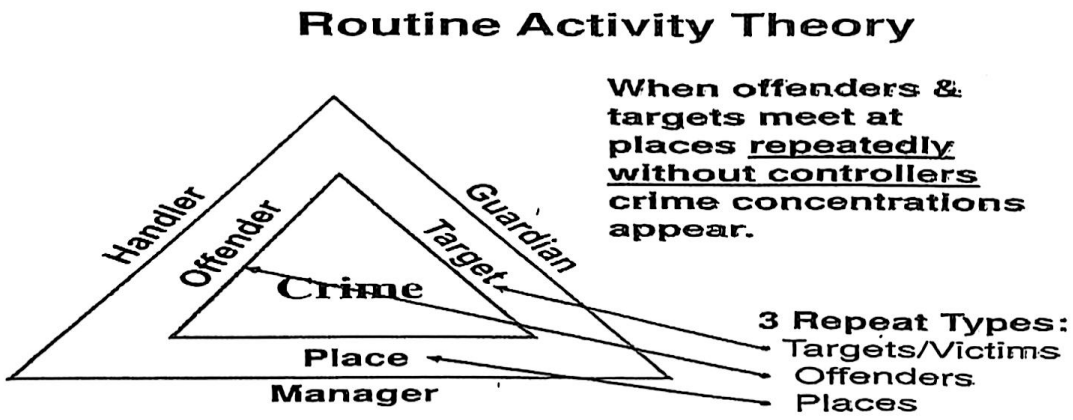
The search for empirical data to support the Routine Activity Theory's claim that macro societal factors are less important in the causation of crime than one's lifestyle is (Cohen and Felson 1979). The presence of commercial motorcyclists in Cohen and Felson's hypothetical business indicates that the frequency of crime by commercial motorcyclists is related to the availability of targets, which may include passengers and items appealing to the prospective criminal (commercial motorcyclist), as well as the lack of a guardian, such as a cop or other law enforcement officer, to prevent the crime (Cohen and Felson 1979).

Figure 1: Routine Activity Theory



Source: Cohen & Felson (1979)

Figure 2: Elements in Routine Activity Theory



Source: Cohen & Felson (1979)

Routine Activity Theory has received sizeable criticism, particularly for how simplistically it tackles crime. This theory only considers three elements when it comes to crime, and it ignores societal aspects such as personal education, socioeconomic standing, and so on. This idea has also been described as a "description of crime rather than an explanation" (Cohen and Felson 1979). While these flaws have been identified, there is little question that the Routine Activity Theory is effective in explaining why particular categories of people are more likely to commit crimes, as well as why specific sorts of crimes are more common. Going to work, partaking in leisure activities, and running errands might let offenders interact with appropriate victims and targets. People, an object, or a site might be the suitable target, and the guardian could be police patrols, security guards, vigilant workers, friends, neighbours, or a closely monitored closed circuit video (CCTV) system (Cohen and Felson 1979).

Commercial motorcycle services are not always less expensive per unit of distance travelled than taxicab and bus services, but they are an economical, rather more accessible, and surely more customizable mode of transportation. As a result, this form of transportation appeals to the young, the old, both males and females, as well as businesses, government employees, students, and others. Despite the apparent benefits of commercial motorcycles to socioeconomic activities, their operations and operators were becoming increasingly involved in undesirable behaviours and acts that were dangerous to safety and security.

As a result, not only have CMOs been publicly chastised, but legislation has been enacted in several states to severely restrict or even outright outlaw their operations (Okola, 2013).

The use of commercial motorcycles as a method of public transportation in Nigeria began in the late 1980s to alleviate traffic congestion in metropolitan areas (Kraxberger, 2004 & Oyesiku, 2002). The use of motorcycles for public transportation is not totally new; in fact, prior to the widespread usage of public motorbikes, motorbike services had been offered for a charge in a few metropolitan towns such as Calabar, Uyo, Bauchi, and Makurdi since the early 1980s (Ogunsanya and Galtima, 1993; Gbadamosi, 2006). In the dispersed settlement of eastern states and regions where traditional public transportation services were not accessible, commercial motorbikes have also functioned as a frequent method of inter-rural and rural-urban transportation.

It was emphasized that as the population and urbanization grew without a matching or proportionate growth in the transportation sector, a demand for commercial motorbikes arose (Udoh, 2000; Sule, 2007). Ogbuji (2001) and Gbadamosi (2006), stated that the emergence of commercial motorcycle transport in Nigeria was prompted by the poor state of the Nigerian economy, the collapse of public transportation, and the inability of available commercial cars to meet the movement of the ever-growing urban population, among other factors. Taruwere (2012), findings reveal that major variables such as Okada riders' age, location, and license holding favorably affect earnings, whereas variables such as age and average fee paid each trip negatively affect profits.

4.0 Study Area and Methodology

The study area is Abuja, located north-central region of Nigeria. Marble, tin, clay, mica, and tantalite are some of the natural mineral's resources found in Abuja. The Abuja Area councils includes: Abaji, Abuja Municipal Area Council (AMAC), Bwari, Gwagwalada, Kuje and Kwali. Abuja is classified as tropical wet and dry in line with Köppen Climate Classification. Abuja experiences three types of weather every year. Both a hot, humid rainy season and a scorching dry season are experienced. The northeast trade wind causes a brief interlude of harmattan, with dust haze and dryness as the predominant characteristics. There are two distinct seasons: the rainy season which lasts from April to October, with daytime temperatures between 28°C and 30°C and

night time temperatures between 22°C and 23°C (71.6°F to 73.4°F).

Dry season daytime temperatures can reach as high as 40 °C (104 °F), while night time temperatures can drop to 12 °C (53.6 degrees Fahrenheit). Due to its high elevations and varied topography, the FCT's weather is moderated. The territory's location on the windward side of the Jos Plateau and the zone of rising air masses influenced its rainfall with the city experiencing heavy rains from April to October each year. There are 1,406,239 people in Abuja with 9.3% growth rate (NPC, 2006)

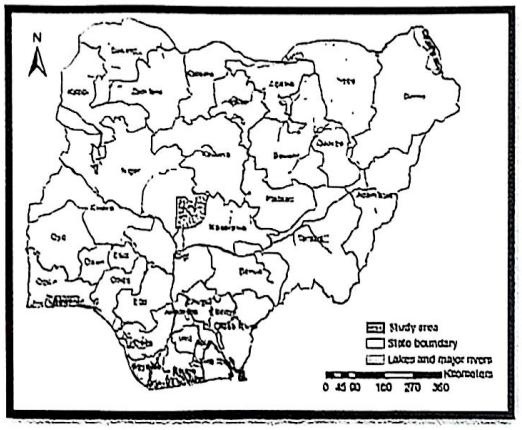


Figure 3: Map of Nigeria Showing Abuja.
Source: Ministry of Works and Housing, Abuja. (2021)

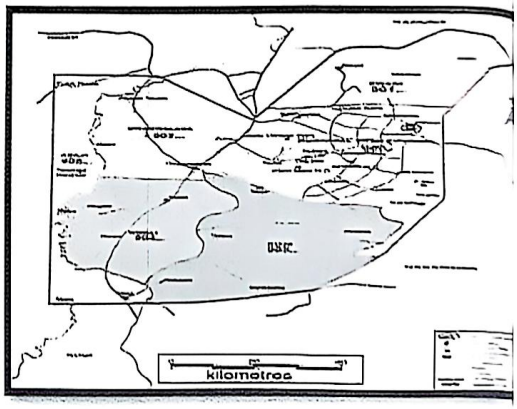


Figure 4: Map of Abuja Showing the Six Area Council
Source: Ministry of Works and Housing, Abuja. (2021)

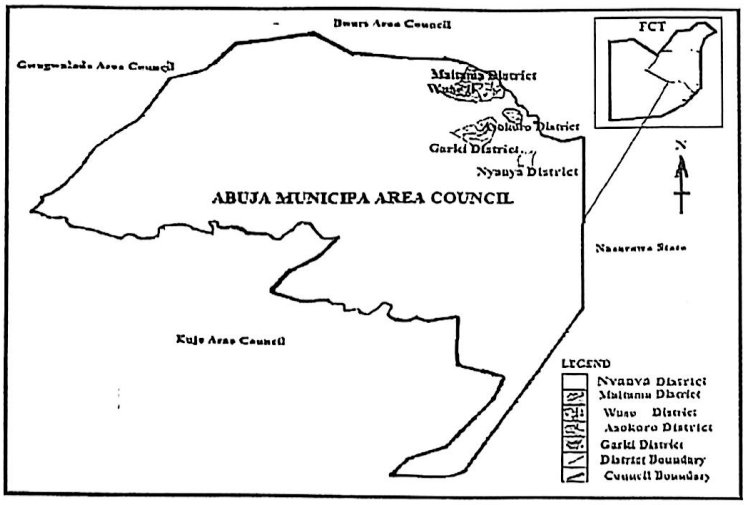


Figure 5: Map of AMAC Showing the Five Selected Districts.
Source: Ministry of Works and Housing, Abuja (2021)

The research adopted a survey research method in which one (1) out of every fifteen (15) respondents were sampled using systematic random sampling techniques in distributing questionnaires to users and operators of commercial motorcyclists in five selected districts around Abuja central area. These districts include; Nyanya, Wuse, Garki, Asokoro and Maitama. A total of 413 questionnaires were administered at the selected districts; 128 questionnaires were administered to commercial motorcycle operators while 285 questionnaires were distributed to commercial motorcycle users. Questionnaires were distributed at designated rider's parks or stands operated by Amalgamated Commercial Motorcycle Owners and Riders Association of Nigeria (ACOMORON).

Table 1: Registered Commercial Motorcycle and Users per District

S/N	Districts	Registered Number of Riders	Users
1	Nyanya	64	653
2	Wuse	14	112
3	Garki	24	164
4	Asokoro	18	129
5	Maitama	8	47
	Total	**128**	**1,105**

Source: Federal Road Safety Corps (2021)

As a result of the limited margin of acceptance of sampling error, Dillman's (2007) sample size formula was used to calculate the sample size of commercial motorcycle users. The formula is as follows;

$$N_S = \frac{(Np)(p)(1-p)}{(Np-1)(B/C)^2+(p)(1-p)}$$

N_P = Size of population (notation often used is N) = 1,105

N_S = Needed sample size (notation often used is n) =?

B = Minimum acceptable sample error (0.05) = + or (-5%)

P = Proportion of people who are anticipated to respond in a specific way (50% or 0.5 is most conservative)

C = Z statistic associated with confidence interval (1.960=95% confidence level)

$$N_S = \frac{(1105)(0.5)(1-0.5)}{(1105)(0.05/1.960)^2+(0.5)(1-0.5)}$$

$$N_S = \frac{(276.25)}{(1105)(0.000651)+(0.25)}$$

$$N_S = \frac{(276.25)}{(0.969355)}$$

$N_S = 285₦$

To get the number of questionnaires attached to each district = $\frac{\text{Number of user in each district}}{\text{Total number of user}}$ sample size (285)

Table 2: Proportional Sample Size per District.

S/N	Districts	Sample Size of riders	Sample Size of Users
1	Nyanya	64	169
2	Wuse	14	29
3	Garki	24	42
4	Asokoro	18	33
5	Maitama	8	12
	Total	**128**	**285**
	Sum Total	**413**	

Source: Author's projection (2021).

Out of the 128 questionnaires distributed to commercial motorcycle operators 122 were returned valid while, of the of the 285 questionnaires administered to the users 27 were returned valid making an aggregate of 394 questionnaires returned.

5.0 Results and Discussions

5.1 Socio-economic Characteristics

Table 3 Aggregate Socio-economic Characteristics

Variable	Attribute	Frequency	%
Gender N = 394	Male	276	70.0
	Female	118	30
Age N = 394	<21 years	45	11.4
	21-30 years	113	28.7
	31-40 years	158	40.1
	41-50 years	68	17.3
	>50 years	10	2.5
Education Status N = 394	Primary	47	11.9
	Secondary	133	33.8
	Tertiary	162	41.1
	Others	52	13.2
Occupation N = 394	Student	64	16.2
	Trader	85	21.5
	Private	51	13.0
	Artisan	126	32.0
	Civil Servant	68	17.3
Income N = 394	<₦10,000	37	9.4
	₦10,000-₦20,000	60	15.4
	₦21,000-₦30,000	65	16.4
	₦31,000-₦40,000	77	19.5
	₦41,000-₦50,000	86	21.8
	>₦50,000	69	17.5
Marital Status N = 394	Married	171	43.4
	Single	103	26.1
	Divorced	30	7.6
	Separated	42	10.7
	Widow/Widower	48	12.2
Family Size N= 394	<3	33	8.4
	3-5	91	23
	6-8	204	51.8
	>8	66	16.8

Source: Author's Computation (2021)

Table 3 indicates that the aggregate gender of **sampled riders** and users were predominantly **male dominated** with 70% for male while female is 30%. Respondents between age 21-50 years observed to be foremost with about 68.8%. 74.9% of sampled riders and users

possess secondary and tertiary educational qualification (i.e., were observed to be 33.8% and 41.1% respectively). Artisan make-up of about 32% while, about 73.1% of the respondents earned between ₦10,000 to ₦50,000 monthly. Furthermore, 43.4% of the respondents were married with 51% family size between 6-8.

Table 4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.496
Bartlett's Test of Sphericity	Approx. Chi-Square	1500.724
	df	36
	Sig.	.000

Source: Author's Computation (2021).

The Table 4 shows a KMO measure of sampling adequacy of 0.496 which is approximately 0.5 denoting the value reach the threshold of acceptability. The Bartlett's test of sphericity provided a technically acceptable significance level of .000 which is less than .05. This implied that all factors were significant and, in one way all or the other, has led to the ban of commercial motorcycle in the study area. Hence, factor simple linear regression analysis is appropriate in this study.

5.2 The Effects of the Ban on Commercial Motorcycle Operators

In examining the impact of the ban on commercial Motorcycle operators in Abuja central district, simple linear regression was used to predict the effects using the average profit and the number of trips by the riders. The regression model can be conceptualized as:

$$Y = \beta 0 \pm \beta i\, Xi \ldots\ldots\ldots\ldots \pm \beta n\, Xn$$

..... Equation 1

Where:

$\beta 1$ = Coefficient of regression of variable x_1

$\beta 2$ = Coefficient of regression of variable x_2

$\beta 0$ = The point at which the regression line and the y-axis intersect

Y = Dependent variable (Average profit)

Xi to Xn = Independent variables (Number of trips)

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.920[a]	.846	.844	.4335	.846	657.363	1	120	.000

a. **Predictors:** (Constant), Number of trips
b. **Dependent** Variable: Average profit
Source: Author's Computation (2021)

Table 5 shows the model summary of the regression. The coefficient of determination R^2 85% (0.85) explains the amount of variation in the dependent variable as a result of variation in the independent variable. This implies that 85% of changes in dependent variable (average profit) is explained by the independent variable (number of trips) in the model under the period of consideration. While, the remaining 15% is accounted for the other factors which the study has not investigated.

Table 6: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123.525	1	123.525	657.363	.000[b]
	Residual	22.549	120	.188		
	Total	146.074	121			

a. **Dependent** Variable: Average profit
b. **Predictors:** (Constant), Number of trips
Source: Author's Computation (2021).

The ANOVA in table 6 shows that F = 657.363, p = .000. Therefore, the model is statistically significant since p <0.000 at 0.05 alpha level. The result depicts that variable under consideration (i.e., number of trips and average profit) significantly correlates with each other.

Table 7: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.392	.099		3.953	.000	.196	.589
	Number of trips	.844	.033	.920	25.639	.000	.778	.909

a. **Dependent** Variable: Average profit
Source: Author's Computation (2021)

Table 7 shows the regression coefficients for predicting the average profit from number of trips model. The result reveals that there is a positive influence on average profits. The model is therefore, expressed as:

$Y = \beta 0 \pm \beta i\, Xi$ .....±

$Y = 0.392 + 0.844(X)$.....Equation 2

From Table 6, the regression equation for predicting the average profit from number of trips was $Y = 0.392 + 0.844(X)$. Therefore, with a confidence interval of 95%, the number of trips range from 0.778 to 0.909; thus, for each one unit of increase of the number of trips the average profit increases by about 0.8 to 0.9 units.

Table 8: Correlations

		Average profit	Number of trips
Pearson Correlation	Average profit	1.000	.920
	Number of trips	.920	1.000
Sig. (1-tailed)	Average profit	.	.000
	Number of trips	.000	.
N	Average profit	122	122
	Number of trips	122	122

Source: Author's Computation (2021).

Table 8 reveals that the relationship between average profit and the number of trips is 0.920 (92%) using correlation analysis. This implies that there is a strong positive relationship between the two variables (i.e., number of trips and average profit).

5.3 Users Perception on the Ban of Commercial Motorcycle Operation

Table 9: Users Perception on the Ban of Commercial Motorcycle Operation

Question	Frequency	Percentage
Does the ban increase delay and difficulties in getting to respondents' destination?		
Yes	211	77.6
No	52	19.1
Undecided	9	3.3
Total	**272**	100
What is your reason for patronage of Okada?		
Cheaper cost of transport	52	19.1
To avoid traffic, hold up	152	55.9
More convenient	39	14.3
Other means of transport are not reliable	29	10.7
Total	**272**	100

Does the restriction policy significantly reduce Okada related crimes?		
Strongly agree	96	35.3
Agree	127	46.7
Disagree	31	11.4
Strongly disagree	18	6.6
Total	272	100

Source: Author's Computation (2021).

Table 9 indicates that 77.6% of the users agreed that the ban increases delay and difficulties in getting to their destination. 55.9% of the users chose to avoid traffic hold up as been reason for patronizing commercial motorcycles. Findings also shows that 35.3% and 46.7% of the users strongly agree and agree respectively to the restriction policy as significantly reducing commercial motorcycle related crimes. Therefore, a total of 82% of the users were in agreement that the restriction policy significantly reduced Okada related crimes.

Table 10: The Effect of Okada Ban on the Users

Effect of Okada ban on the users	Frequency	Percent (%)
Hardship on public transport users	59	21.7
Difficulty in accessing other transport means	63	23.2
Reduction in door-to-door services	75	27.6
Delay in getting to desired destination	65	23.9
Others	10	3.6
Total	272	100

Source: Author's Computation (2021).

Table 10 shows that 21.7% chose hardship on public transport on users as an effect of the ban on the users, 23.2% chose difficulty in accessing other transport means, 27.6% were of the opinion tilted towards reduction in door-to-door services, 23.9% chose delay in getting to desired destination while 3.6% chose others. Therefore, this result implies that the ban has a significant effect which has caused a wide range of effects.

5.3 The Challenges confronting Commercial Motorcycle Operators after the Ban

Table 11: Challenges confronting Commercial Motorcycle Operators

Questions	Frequency	Percentage
Has the ban increased the level of hardship on public transport users?		
Yes	65	53.3
No	48	39.3
Undecided	9	7.4
Total	**122**	**100**
Has the ban improved standard of living?		
Yes	49	40.2
No	59	48.4
Undecided	14	11.4
Total	**122**	**100**
How often do you operate on the road that you are restricted from?		
Very often	27	22.1
Often	32	26.2
Rare	45	36.9
Never	18	14.8
Total	**122**	**100**
Has the ban made you to put in more working hours during the day?		
Yes	78	63.9
No	44	36.1
Total	**122**	**100**
If yes, how?		
Starting work early to meet up daily profit	**45**	57.7
Increasing number of trips per day	**21**	26.9
Others	**12**	15.4
Total	**78**	**100**

Source: Author's Computation (2021)

Table 11 shows the operators view of the ban on the operators with 53.3% were of the opinion that the ban has increased the level of hardship on public transport users with 7.4% undecided. On the effect on standard of living, 40.2% chose Yes to the ban improving standard of living, 48.4% chose No, while 11.4% were undecided. Findings also shows the riders view on how often they operate on the road that they are restricted from. While 22.1% opined very often, 26.2% often, 36.9% rare with 14.8% never operate on the road they were restricted from.

Table 11 also shows that 63.9% of the riders have put in more working hours during the day due to the ban. Furthermore, 57.7% of

those who chose Yes identified that starting work early in order to meet up daily profit, 26.9% to increasing number of trips per day while 15.4% had other reasons on how the ban has made them to put in more working hours during the day.

5.4 Challenges faced by Commercial Motorcycle Riders after the Ban

Table 12: Commercial Motorcycle Operators' View on the Challenges faced after the Ban

The challenges facing commercial motorcycles operators after the ban?	Frequency	Percent (%)
Low daily/weekly profit	28	23.0
Increased working hours	25	20.5
Unnecessary harassment from the police	32	26.2
Difficulties in getting passengers	27	22.1
Others	10	8.2
Total	122	100

Source: Author's Computation (2021)

Table 12 indicates the commercial motorcycle operator's views on the challenges they faced. 23% chose low daily/weekly profit, 20.5% chose increased working hours, 26.2% chose unnecessary harassment from the police and other law enforcement agencies, 22.1% chose difficulties in getting passengers while 8.2% chose others. The implication of this findings is that commercial motorcycle operators are facing a lot of difficulties inimical to their profit margin and hostile working environment.

5.5 The Factors Leading to the Ban of Commercial Motorcycle in the City Center

Table 13: Communalities

	Initial	Extraction	Rank
Traffic congestion	1.000	.511	8
Armed robbery	1.000	.825	2
Kidnapping	1.000	.756	7
Rape	1.000	.775	6
Traffic violation	1.000	.896	1
Dishonest towards people	1.000	.822	3
Snatching of valuables	1.000	.777	5
Reckless riding	1.000	.798	4
Cause accidents on the highway	1.000	.377	9

Extraction Method: Principal Component Analysis.

Source: Author's Computation (2021)

The Table 13 shows the communalities before and after extraction using principal component analysis with the aid of the extraction method. All variance is common before extraction having 1 as communalities. After extraction, the amount of variance in each variable that can be explained by the retained factors is represented by the communalities after extraction. Traffic violation was ranked as number1 at 89% followed by Armed robbery at 82% with the least been the cause accidents on the highway (37%) has been some of the variances accounted for by the extracted factor.

Table 14: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared loadings			Rotation Sums of loadings	
Components	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance
TV	3.855	42.831	42.831	3.855	42.831	42.831	3.055	33.944
AR	1.450	16.116	58.947	1.450	16.116	58.947	1.880	20.885
DTP	1.230	13.667	72.614	1.230	13.667	72.614	1.601	17.785
RD	.911	10.117	82.731					
SV	.715	7.942	90.673					
RP	.379	4.211	94.884					
KD	.270	3.005	97.889					
TC	.128	1.424	99.313					
CAH	.062	.687	100.000					

Extraction Method: Principal Component Analysis.

Source: Author's Computation (2021)

NOTE: TV=Traffic Violation= AR: Armed Robbery= DTP= Dishonesty towards People, RD Reckless Driving, SV= Snatching of Valuables, RP= Rape, KD= Kidnapping, TC= Traffi Congestion, CAH= Cause Accidents on the Highway.

Table 14 indicates that the total variance explained from the result of the factor analysis using principal component analysis. Using the eigenvalue-one criteria (i.e., Kaiser 1960 criterion) Table 15 explains result of the extraction method which reveals that there were 3 distinct components which explains the factors causing the ban of commercial motorcycles in Abuja central area. Th results reveal that factor 1 to 3 whos eigenvalue-one is greater than 1 accounte for a cumulative variance value of 73% (i.e 43%, 16% and 14% respectively). The factors are; traffic violation, armed robbe and dishonesty towards people.

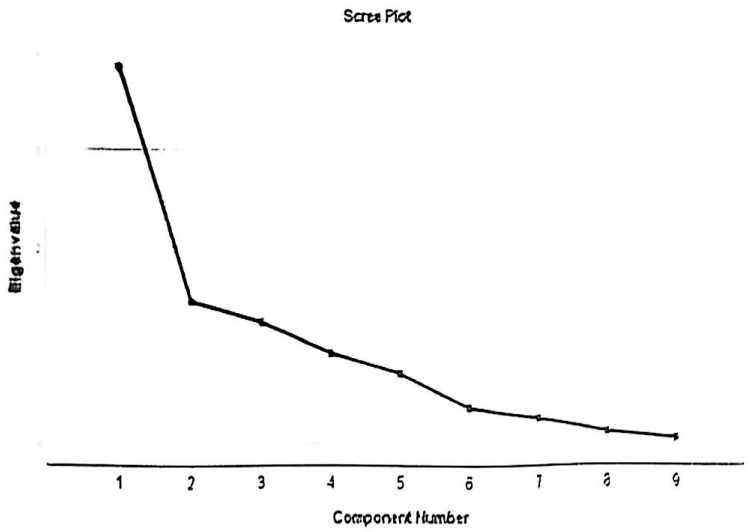


Figure 6: Scree Plot
Source: Author's Computation (2021)

A cursory look at the scree plot in Figure 6 shows that were extracted (i.e., the point of sudden change in slope) of which account for about 73% of changes in variance which is relative to the remaining six (6) factors. These variables according to their order of ranking include; Traffic violation (0.896), Armed robbery (0.825), Dishonesty towards people (0.822), Reckless riding (0.798), Snatching of valuables (0.777), Rape (0.775), Kidnapping (0.776), Traffic congestion (0.511) and Cause accidents on the highway (0.377)

6. Recommendations and Conclusion

Based on the finding in the study the following recommendations were made;

1.government should ensure designation of robust and efficient monitoring traffic officers in the city centre.

2. stiffer penalties must be melted out on habitual offenders of this rule regarding the ban

3. well police alternative routes should be provided for riders in order for them to break-even.

4. all commercial motorcycle operators must be dully registered with appropriate union and given rider number for tracking and easy identification.

5. alternative and efficient means of public mode of transportation must be provided by government within city centre to aid easy mobility.

6. police overzealousness must be checkmated while ensuring compliance with the ban

Transportation is critical to the existence and sustainability of any urban society because it serves as the foundation for contact for work, pleasure, and residential activities while also serving as one of the driving forces in the formation of early settlements. It was observed in this study that there is a strong correlation between number of trips and average profits. While, the ban has resulted in increases in delay and difficulties in getting to destination as opined by the studies of Bassey, 2009; Ofuonyeadi, 2008; Okache, 2010; Aborishade, 2010 and Ukwayi, 2013.

By implication it is also noteworthy that the ban contributes to the increase in transport charges cost, trip difficulties within the city centre, loss of lives, properties, violation of traffic law, armed robbery, kidnapping, etc. Therefore, the study conclude that traffic violation and armed robbery accounted hugely to the ban of commercial motorcycle operations in the central area of Abuja. This also corroborate with the findings in the study of Ayo, 2000; Gbadamosi, 2006; Sumaila, 2021 and Bassey 2009.

References

Adesanya, A. (1998). The use of Motorcycles for Public Transportation in Nigeria: The situation in Ibadan. *NISER Monograph Series*, No. 6.

Adetunji, M.A. & Aloba, O. (2014). The level of compliance of commercial motorcyclists to traffic rules on urban roads in South Western Nigeria. *Journal of Educational and Social Research MCSER Publishing, Rome-Ital.* 4(3), 345-351

Ajzen, L. (1986). Prediction of goal-directed behaviour: attitudes, intentions, and perceived behavioral control. Journal of Experimental Social Psychology (22), 453–474.

Akwaowo PA (2009) Okada Riders Violate Traffic Law. Retrieved September 11, 2009, from *http://www.tedenews.com*

Arosanyin, G. T. (2006). *Determinants of Earnings from Okada Operation in Ilorin, Nigeria*. Research Report of Department of Economics, University of Ilorin, Nigeria.

Arosanyin, G.T. (2010). Earnings from commercial motorcycle operations in Ilorin, Nigeria: A study on determinants. *Ghana Journal of Development Studies. 7(2),* 53 – 66

Ayo OA (2000) Okada Rider Cause Accident. *Daily Sun* July 24, 2009.

Bassey A. (2009). Curtailing Criminal Acts by Okada Riders. Available online: *http://www/compassnewspaper.com/NG/Index.phb.*

[illegible], C. C. and D. A. Badoe (2004). "Unit of analysis conventional trip generation modelling: an investigation." *Canadian Journal of Civil Engineering* 31(2)

Cohen, L. & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review* (44),588–608.

Fasakin, J. O. (2001). "Some factors affecting daily profits of Commercial Motorcycles in Akure, Nigeria" *Transport Policy*, 8(1), 63-69.

Gbadamosi, K.T. 2006. *The Emergence of Motorcycle in Urban Transportation in Nigeria and its Implication on Traffic Safety*. Association for European Transport and Contributors.

Inyang D (2004). The Sociology of Juvenile Delinquency: *The Social Problem and its Control Uyo*: Afahaide and Bross Printing and Publishing co.

Kraxberger B (2004). Transportation and the Movement of People in Nigeria: Some Tentative Notes. Retrieved March 15, 2010 from *http://www.uni.edu/gai/nigeria/background/transportation.*

Muhammad, M. (2011). "Globalization and Nigerian Textile Factories: An Analysis of Three Kano Textile Factories", Unpublished M. Sc. Political Science Dissertation, Bayero University, Kano-Nigeria.

National Population Census (2006). Population Census Figures

Ndiribe, Okey. (2009). "Surging Rate of Motorcycle Accident in Lagos State", *Sunday Vanguard*, January 11.

Oginni F, Ugboko V, Adewole R. Knowledge, attitude and practice of Nigerian motorcyclists in the use of crash helmet and other safety measures. Traffic Injury Prev. 2007;8(2),137–141.

Ogunsanya A. A. and Galtima, M. (1993). "Motorcycle in Public Transport Service in Nigeria: Case Study of Yola Town", in J.S. Ikya (ed.), *Urban Passenger Transportation in Nigeria.* Ibadan: Heinemann: 191-207.

Okola, A. (2013). Targeting motorcycle users to improve traffic safety in Latin America: *World Bank.* Retrieved from http://blogs.worldbank.org/latinamerica/targeting-motorcycle-users-improve-traffic-safety-latin-america

Okoye D (2009). Keke Napep is Better than Motorcycles. *Nigeria Chronicle.* November 24, 2009.

Olubomehin, O.O (2012). The development and impact of motorcycles as means of commercial transportation in Nigeria. *Research on Humanities and Social Sciences*, 2(6): 231-239.

Onoyo O (2004). Okada Rider and Bus Conductor. *Nigeria Chronicle.* September 21, 2004.

Oyesiku, O. O. 2002.. "From Womb to Tomb" 24th Inaugural Lecture, Olabisi Onabanjo University. Ago Iwoye OOU Press.

Silas C (2006). Commercial motorcycle: A Necessary Evil. The Niger-Delt October 1, 2006.

Sule RO (2007). Urban Planning Administration and Environment Health Criticality. *Lagos: Thumbprint International Company.*

Sumaila A.F. (2012). Characterization Current Transportation Challenges the Federal Capital Territory, Nigeri *Journal of Sustainable Developme* (5)12.

Ugboma O (2004). The Menace of Okada Riders to Road Safety Ideals. *Paper Presented at Annual Summit of Special Marshall in Calabar; 27 September, 2004.*

Ukwayi J.K., Ogabor A.M. and Michael C.E. (2013). Public Perception of the Involvement of Commercial Motorcyclists in Crime in South-South Nigeria. *International Journal of Humanities and Social Science Invention* (2)7.