Assessment of Informal Sector and Poverty Alleviation in Nigeria: A Study of Commercial Motorcycle Riders in Minna Metropolis

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Abstract

The study investigated the effect of the informal sector on poverty alleviation amongst commercial motorcycle riders in Minna Metropolis of Niger state Nigeria. The research used primary data collected from 379 respondents randomly selected from a population of 7273 registered motorcycle operators in Minna Metropolis. Descriptive statistics and regression analysis were used in analyzing the data. Employing ordinary least squares (OLS) technique, three econometric models were estimated and tested using income, Consumption expenditure and wealth accumulation as dependent variables while experience, age, level of education, marital status, number of dependents, mode of operation, number of hours worked per day and daily turnover of the respondents as explanatory variables. The study revealed that 93% of the operators earn above the international poverty line of one dollar a day. Furthermore, experience, mode of operation, number of hours worked and turnover were the major determinants of poverty alleviation of the commercial motorcycle riders in Minna Metropolitan area. The implication of these findings points to the need for serious attention to the sector through rigorous regulation and funding so that it will help in solving unemployment and poverty problems in Minna metropolis, Niger state and the country at large.

Keywords: Poverty Line, Poverty Alleviation, Informal Sector, Unemployment

1. Introduction

Reduction of poverty is part of government goals to be achieved within a set period of time due to the intrinsic repercussion of actions from the people in poor condition and desperation. A meaningful quantum of the poor in most low-income countries like Nigeria is in to the informal sector where efficiency in output and income are low. One major service rendered in this sector is informal movement of goods and persons, particularly intra-urban commercial motorcycle services. Presently, commercial motorcycle business operation has taken advantage of the deplorable state of Nigeria's transport system to create an economic niche.

Although the operation of motorcycles by individuals had existed since time immemorial in Nigeria, some used it to move goods to their destinations and others to hawk their goods (Olubomehin, 2012). The use of motorcycles for commercial transport began in Calabar, the capital of Cross River State of Nigeria in the early 1970s. This use grew after the

nationwide retrenchment of civil servants in 1975/76 (Adesanya, 1998). This means by implication that, commercial motorcycle became a succor to shock-absorb the unemployment that occurred at that particular point in time. Apart from Calabar, written indication also confirmed that Okada was first introduced for public transport in the northern Nigerian town of Yola in 1970 (Ogunsanya & Galtima, 1993). By the 1980s, the use of motorcycles for public transportation had spread to other parts of Nigeria. As at today, there is virtually no area that commercial motorcycles have not been operating except places that have placed ban on them. This could be the main reason why Arosanyin, et. al. (2011) said Okada transport operators take the job as last resort in order to generate income for them and their families to live on. Ane, et al. (2011) also explained that inform public transport activities are many even in the advanced countries depending on their type, size and the mode of operation. Areas where road network is poor, are best places for these commercial motorcyclists to ply owing to the safety challenges imposed by the operators. This is because areas that could be impossible or extremely difficult for vehicles to operate are easily plied by these motorcycles and hence making transportation easy especially farmers and villages workers. While many research works have been conducted on the ability of this informal sector in fixing unemployed persons in Nigeria (Ogunrinola, 1991; Folawewo, 2006); very few research works have been carried out on the income and employment generation as well as the poverty reduction implications of commercial motorcycle business operation in Nigeria.

In fact, there is no well-known research work on the impact of commercial motorcycle riding business on poverty alleviation in Minna Metropolis in particular. This research, therefore, intends to study the effect of informal self-employment on poverty alleviation with specific reference to the commercial motor cycle business operation in Minna Metropolis of Niger State, Nigeria. The research looked at the magnitude of the relationship between income (INC), Consumption Expenditure (CEX) and Wealth accumulation (WAC) as proxies for Poverty alleviation and other socio-economic factor that are expected to hider the growth of this variable hence affecting poverty alleviation.

2. Literature Review

A few empirical works have been carried out on the operation of commercial motorcycles as a means of public transportation in Nigeria. For instant, in a study on the use of motorcycle as means of public passenger traffic in Yola town, Adamawa State by Ogunsanya and Galtima (1993), economic depression and inadequate transport facilities were identified as some of the factors that gave rise to the use of motorcycles as means of public transportation in Nigeria. Fasakin (2001) also conducted a study on the factors affecting the daily profits of commercial motorcycle operators in Akure, the capital of Ondo State, South West Nigeria Furthermore, in an Inaugural Public Lecture on the subject of public transportation and among other issues in Nigeria, Oyesiku (2002) examined at the increase in the operation of *Okada* for public transportation in Nigeria pointing out that the decrease in the supply of new vehicles of all types since the 1970s contributed to the emergence of motorcycles for commercial transportation. Again, Agossou (2004) asserted

that *okada* business is one of the major means of transportation in Nigeria and, by far, the most common form of informal transport system in the country. Ogunrinola (2010) investigating the activities of informal self-employment and poverty Mitigation: Empirical Evidence from motorcycle taxi Riders in Nigeria, explained that, in urban areas, the motorcycle taxis (popularly called "Okada", is a large source of provision of self-employment and it provides income for many of the urban unemployed in south west Nigeria. However, it has a huge implication on public health of the masses as they do not comply with safety measures in carrying out their operations.

Muhammad (2014) conducted a study on the role of informal self-employment and poverty Reduction in Sokoto metropolis of Nigeria: A case study of commercial tricycle and motorcycle taxi Business. The study used multiple regression analysis to investigate the relationship between the socio-economic characteristics of the riders and his income generation, consumption expenditure and wealth accumulation as proxy for poverty reduction. The result shows that experience, age, number of dependents and number of hours in business are the prime determinants of poverty alleviation of the riders in the metropolis. Yakubu (2012) evaluated the determinants of earning income within Okada operators in Kwara state using primary data of questionnaire administered in both rural and urban area of Kwara state. Employing modified Mincerian equation to analyse the data gotten, he found out that riders age, location and license holding directly determine Okada earnings, while average fare per trip inversely determine earnings. Solaja, Kalejaiye, and Itsuokor (2013) examined the problems of commercial motorcycle job in Etsako West local government area, Edo state, Nigeria. Collecting primary data through 255 questionnaires and 10 in-depth interview and employing univariate and content analyses, their findings showed that social stigmatization as a result of use of *okada* for criminal activities, lack of protection, over-speeding, non-compliance to traffic rules, among others, are the major issues o commercial motorcycle riders in the local government in Edo state.

The most recent of work done on informal sector in relation to commercial motorcycle is that of Danjibo, Olasupo, and Ojo, (2019). They studied the impact of Okada on public health and safety using case study research design for six local government areas in Ibadan, the Oyo state capital. Data collection was from both secondary and primary sources. Result of their research divulged that, generally, commercial motorcyclists failed to comply with safety measures by the Federal Road Safety Act, such as use of helmet, wearing of protective clothes, not overloading, not to take alcohol while driving among others, and thus, they cause health havards in the society. Their findings also revealed that carbon emission from motorcycles is detrimental to public health.

3. Methodology

This section discusses the methodology and analytical design for the study. Issues discussed include sampling and sampling technique, technique of data analysis and model estimation. Minna is a city located in north Central Nigeria and the largest state in the country in terms of land mass it is the capital city of Niger state, and other major cities are

Bida, Kotangora and Suleja. Minna has an estimated population of 304,113 as at 2007. Minna is currently the largest city in Niger state, followed by Suleja (416, 518), Bida (178,840) and Kotangora (127,000). The economy of Minna is characterized by a large area of fertile land for both the raining and dry farming. The economy is based largely on subsistence crops, livestock, and large deposit of uranium. The informal sector activity is a major source of livelihood of the inhabitants of Minna Niger state. The population of the registered commercial motorcycle riders in Minna metropolis stood at 7273. as at December, 2019 according to Amalgamated Commercial Motor-cycle Owners and Riders Association of Nigeria, Niger state chapter. Sampling is a process used in analysis where a predetermined number of observations will be taken from a larger population for a general analysis. Random sampling is a method of selection where all items in the population have an equal chance of being selected. The target occupation is Commercial Motorcycle Riders (Kabu-Kabu, Okada or Achaba as locally known). A sample of 379 commercial motorcyclist riders were randomly selected for the research out of the 7273 registered association members of the occupational group. The sample figure was obtained using the formula by Yamani's (1968) as used in Hussaini and Malami (2012), Usman (2012) and Yusuf (2013).

To test the role of informal sector self-employment activities on poverty alleviation, three functional models were estimated. The models were adapted from the work of Ogunrinola (2011) as follows: Model one uses income of the respondents as proxy for poverty alleviation, model two used consumption expenditure while model three used wealth accumulation and all the three variables as the dependent variables while other socioeconomic characteristics of the rider that is expected to affect his economic activities are the independent variables. The new form of the models is follows

economic factor. Income, consumption expenditure and wealth accumulation are proxy for

poverty level

4. Results

Three hundred and seventy nine questionnaires were distributed but three hundred and forty were retrieved and used for the analysis. The result is split into two: the descriptive statistic which provides a description of the respondents' personal characteristics and the profile of his business activities and the regression results that answers some of the research questions and test the research hypotheses.

Descriptive Statistics

The descriptive statistic result is in two categories; the summary of the respondents' personal characteristics and the profile of his business activities

Table 1: Showing personal profile of the respondents.

Responds	Frequency	Percentage	
Age (year)			
1020	24	10.00	
21—30	212	64.04	
3140	88	1.08	
41—50	6	19.25	
Religion			
Islam	326	97.3	
Christianity	9	2.3	
Marital status			
Single	151	44.4	
Married	158	46.5	
Divorce	31	9.1	
Number of Dependents			
0—5	282	70.35	
6—10	45	23.23	
11—15	13	3.10	
Educational qualification			
Islamic/Arabic	110	32.4	
Vocational	26	7.6	
Primary	57	16.8	
Secondary	98	28.8	
Tertiary	49	14.4	
Total	340	100	

Source: Field Survey, 2019

Age, Religion, marital status, and education of the respondents portraying their personal characteristics were evaluated and showcased in Table 1. The outcome indicates that a large number of the respondents in the study area were youth with the average age of about

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The profile of the operator's business activities is presented in the table below

Table 2: Showing Profile of Operators Business Activities.

Responds	Frequency	Percentage
Experience (year)		
1 to 5	188	55.3
6 to 10	116	34.1
11 to 15	30	8.8
16 to 20	6	1.8
Mode of Operation		
Hired operator	70	20.6
Hire purchase	32	9.4
Owners operator	238	70.0
Hours worked per Day		
1 to 5	30	8.8
6 to 10	209	61.5
11 to 15	101	29.7
Daily Turnover		
500 to 1000	54	15.9
1100 to 1500	109	32.1
1600 to 2000	104	30.6
2100 to 2500	37	10.9
above 2500	36	10.6
Daily Profit		
100 to 1000	24	7.1
600 to 1000	161	47.4
1100 to 1500	105	30.9
1600 to 2000	36	10.6
above 2000	14	4.1
Wealth Accumulated		
10000 to 50000	95	27.9
51000 to 90000	97	28.5
91000 to 140000	33	9.7
141000 to 180000	57	16.8
above 180000	58	17.1
Aver. Daily Expenditure		
100 to 500	157	46.2
600 to 1000	174	51.2
1100 to 1500	7	2.1
1600 to 2000	2	.6
Total	340	100.0

Source: Field Survey, 2019.

27 years. Similarly, more than 97% of the respondents were Muslims. On the marital status 47% of the respondents are married while the other remaining respondents are not married. This is not surprising considering that the average age of the respondents being 27 years.



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Note that under normal circumstances, youth in most part of the rural and semi urban areas of developing countries like Minna – Niger state in Nigeria got married before their 30th birthdays. The average number of children in this study is also not astonishing considering the average age of the respondents. The level of educational achievement of the respondents show that 32.4% attended Islamic schools and they are on the vocational trainings which is not unexpected since about 15% of the *okada* riders at least attain one tertiary education or another. These are categories of graduates that did not get job and revolve to join the business of riding motorcycles to earn a living

Multiple Regression Result

The result of Multiple Regression analysis on the factors determining poverty level of the Self-employed motorcycle riders using income as proxy for poverty is show cased in Table 3. The constant variable representing other variables not mentioned in the model is significant at 1%. The $R^2 = 0.737$ and the F = 116.090. From the model, coefficients of independent variables are as follows; Experience of the rider ($\beta = 0.690$), Age of the rider ($\beta = -0.132$), Level of Education of the rider ($\beta = 0.012$), Mode of Operation ($\beta = 0.072$), Marital Status ($\beta = -0.021$), Number of Dependents ($\beta = -0.033$), Number of Hours Worked ($\beta = -0.085$) and Turnover ($\beta = 0.831$). The coefficient of experience of the rider (EXP) has a positive sign and it is significant at 5% level. This shows that experience is an important determinant of the income of the self-employed motor cycle riders in Minna Metropolis. Similarly, the coefficient of age of the rider (AGE) is ($\beta = -0.132$). It carried an inversely signed and significant at 1% since its probability is quite low at 0.000. The result is in line with our *a priori* expectation and thus implies that, the higher the age of the rider the lower the income he can generate in the business. This may be due to the fact that, young riders may have more strength to take longer hours doing the business than the older ones.

Table 3: Regression Result on Income with Income as Dependent variable

Variables	Coefficient	Std. Error	T	Sig.
(Constant)		.172	6.031	.000*
EXP	.690	.044	1.970	.050***
AGE	132	.050	-3.841	.000*
EDU	.012	.018	.397	.691
MOP	072	.033	-2.470	.014**
MST	.021	.048	.622	.535
NOD	033	.061	-1.016	.310
HOP	.085	.055	2.457	.015**
TOV	.831	.026	24.471	*000
$R^2 = 0.737$				
F = 116.090				

Significant at 1% (*); 5% (**); 10% (***) levels.
Source: Computation extract from the Authors, 2019

Moreover, the coefficient of Education (EDU) of the rider is 0.012. The coefficient has positive sign but is not statistically significant at any level. The interpretation is that, education is not a major determinant of the income of the self-employed motor cycle riders

in the Metropolis. The coefficient of Mode of operation (MOP) is -0.072, has the correct negative sign and significant at 5% level. This implies that owners' operator riders generate more income in the motor cycle business than hired operators and hire purchase riders, the coefficient of Marital status (MST) is 0.021. The impact is direct but not significant, even at 10% level. This implies therefore that, marital status is not an important factor that determines the income level of the riders. Number of dependent is another independent variable that was studied. The coefficient is -0.033 which indicate an inverse effect on the dependent variable. However, the effect is not significant, as shown by its corresponding standard error and t-statistics. It is negative and statistically not significant. This implies that number of dependents just like the marital status is not a major determinant of the income level of the motor cycle riders. The coefficient of Number of Hours of operation (HOP) is 0.085, showing that HOP has a direct influence on the dependent variable and the influence is significant at 5%. This implies that Hours of operation is a main factor that influences the income capacity of the motor cycle riding business in Minna metropolis. In other word the higher the hours worked the higher the income in the business lastly, the coefficient of Turnover (TOV) is 0.831. It is positive and statistically significant at 1%. The magnitude of the regressor of turnover place it as a major factor that influences the income level of the Business. The R2 for income stands at 0.733, whereas F-statistics coefficient was found to be 116.090. This indicates that all the explanatory variables are responsible for about 73.3% variation in the dependent variable. More so, the model was found to be sufficient in explaining the relationship among the variables. This implies that there is a significant relationship between the riders' socio-economic characteristics and their ability to generate income in the business, hence we reject null hypothesis that there is no significant relationship. Therefore, it is obvious that only EXP, AGE, MOP, HOP and TOV are the main determinant of income of the motor cycle riding business in Minna Metropolis of Niger state, Nigeria

Table 4: Regression Result on Daily Consumption Expenditure as Dependent variable

Variables	Coefficient	Std. Error	Ť	Sig.
(Constant)		.184	3.589	*000
EXP	.240	.048	3.922	*000
AGE	.055	.054	.922	.357
EDU	.037	.019	.737	.462
MOP	.090	.036	1.759	.079***
MST	090	.052	-1.540	.125
NOD	.134	.065	2.373	.018**
HOP	.096	.059	1.580	.115
TOV	.327	.028	5.536	*000
$R^2 = 0.204$				
F = 10.582				

Significant at 1% (*); 5% (**); 10% (***) levels.
Source: Computation extract from the Authors, 2019

The Result of Multiple Regression Analysis on the factors determining poverty level of the Self-employed Motorcycle Riders using Average Daily Expenditure as proxy for poverty is presented in Table 4. The result of multiple regression analysis using Average Daily Consumption Expenditure as proxy for poverty level is presented in Table 4. The R^2 0.204. and the F= 10.582. Meaning that more than 20% of the variation in the average expenditure of the respondents is accounted for by independent variables are as follows; Experience of the rider (0.240), Age of the rider (-0.055), Level of Education of the rider (0.037), Mode of Operation (0.090), Marital Status (-0.090), Number of Dependents (-0.134), Number of Hours Worked (-0.096) and Turnover (0.327). The coefficient of experience of the riders (EXP) has a positive sign and significant at 1% level. The result confirms the earlier result presented using income as proxy for level of poverty. It indicated that experience is a major determinant of the daily expenditure of the self-employed motor cycle riders in Minna Metropolis. However, the coefficient of age of the rider (AGE) carries a negative sign but is not significant. This is contrary to the result presented earlier. It implies that, age is not a determinant of the daily expenditure of the riders in the study. The coefficient of Education (EDU) of the rider is 0.037 and also positive but not statistically significant at any level. This show that is education is not a major determinant of the daily expenditure of the self-employer motor cycle riders in the Metropolis of the study. In line with a priori expectation, the coefficient of Mode of operation (MOP) is β =0.090, it carries a positive sign and statistically significant at 10%. This implies that owners' operator riders spend more than hired operators and hire purchase riders. The result is similar to the earlier result presented. The coefficient of Marital status (MST) is β =-0.090. It carries a negative sign but statistically not significant at any level. This implies that marital status is not a determinant of the daily expenditure of the riders in the study. The coefficient of the Number of dependents is positive and statistically significant at 5%. This confirms our a priori expectation implies that number of dependents is a major determinant of the income level of the motor cycle riders. The positive relationship indicates that the higher the number of your dependent the higher your expenditure. The coefficient of Number of Hours of operation (HOP) is 0.085. It is positive but statistically not significant at any level this implies that Hours of operation is not a major factor that influences the daily expenditure of the motor cycle riders in metropolis. The coefficient of Turnover (TOV) is 0.327. It is positive and statistically significant at 1%. The result is similar to the result presented in the income model it implies that turnover is a major determinant of both income and expenditure of the motor cycle commercial riders in Minna metropolis. The R² for employment stood at 0.204, whereas F-statistics coefficient was found to be 10.582. This implies that all the variables were approximately jointly significant. The model was found to be adequate in explaining the relationship between dependent variable and the independent variables. This implies that there is a significant relationship between riders' socio-economic characteristics and their daily expenditure. Therefore we reject null hypothesis two and accept the alternative hypothesis. It shows that the only determinants of the daily expenditure of the motor cycle riding business in Minna

Metropolis of Niger state of Nigeria are experience (EXP), mode of operation (MOP), number of dependents (NOD) and turnover (TOV).

The Result of Multiple Regression analysis on the factors determining poverty level of the Self-employed motorcycle riders using wealth accumulation as proxy for poverty is presented in Table 4.5. The constant variable in the model representing other variables not mentioned in the model is statistically not significant at any level. The $R^2 = 0.156$ and the F= 7.627. From the model, coefficients of independent variables are as follows; Experience of the rider (0.015), Age of the rider (-0.064), Level of Education of the rider (0.168), Mode of Operation (β = 0.288), Marital Status (-0.063), Number of Dependents (-0.023), Number of Hours Worked (-0.173) and Turnover (-0.173). From the result, the coefficient of experience of the rider (EXP) has a positive sign and statistically significant at 5% level. This is in line with our a priori expectation. This shows that experienced riders accumulate more wealth than the less experienced riders in the self-employed commercial motor cycle riding in Minna Metropolis. Similarly, the coefficient of age of the rider (AGE) is (-0.064), and it carries a negative sign but is statistically not significant. This is in line with our a priori expectation. It implies that, age is not a determinant of wealth accumulation in the commercial motor cycle riding business in the metropolis. Moreover, the coefficient of Education (EDU) of the rider is 0.168. It has positive sign and statistically significant at 1% level. The interpretation is that, education is a major determinant of the wealth accumulation of the self-employer motor cycle riders in the Metropolis. In other word educated rider accumulate for asset from their income in the business than the less educated rider

Table 5: Regression Result on wealth accumulation as Dependent variable

Variables	Coefficient	Std. Error	T	Sig.
(Constant)		.490	1.076	.283
EXP	.150	.127	2.383	.018**
AGE	064	.144	-1.041	.299
EDU	.168	.051	3.236	.001*
MOP	.288	.094	5.484	*000
MST	063	.138	-1.050	.294
NOD	.023	.173	.398	.691
HOP	.173	.156	2.783	.006***
TOV	.173	.076	2.843	.005**
$R^2 = 0.156$				
F = 7.627				

Significant at 1% (*); 5% (**); 10% (***) levels.
Source: Computation extract from the Authors, 2019

The coefficient of Mode of operation (MOP) is -0.288, with the expected inverse sign and is found to be significant at 1%. This implies that owners' operator riders accumulate more wealth than the hired operators and hire purchase riders. This may be because the previous result shows that owner operators get more income in the motor cycle business than hired operators and hire purchase rides so they may accumulate more assets. The coefficient of

Marital status (MST) is -0.063 and is negative but statistically not significant at any level. This implies that marital status is not a major factor that determines the wealth accumulation level of the riders. Number of dependents is another independent variable that was studied. The coefficient is 0.023. It is positive but statistically not significant. This implies that number of dependents just like the marital status is not a major determinant of the wealth accumulation of the motor cycle riders. The coefficient of Number of Hours of operation (HOP) is 0.173. It is positive and statistically significant at 10%. This implies that Hours of operation is a major factor that influences the capacity of the motor cycle riding business in metropolis to accumulate wealth. In other word the high the hours worked the higher the wealth accumulation. Lastly, the coefficient of Turnover (TOV) is 0.1731. It is positive and statistically significant at 5%. This shows that turnover is the major factor that influences the wealth accumulation of the rider. The R² for employment stood at 0.156, whereas F-statistics coefficient was found to be 7.627. This implies that all the variables were approximately jointly significant. Even though the R² is low but the value of the F-statistics in the model was found to be adequate in explaining the relationship among the variables. This implies that there is a significant relationship between rider's socio-economic characteristics and his ability to accumulate wealth. Therefore, the null hypothesis three is rejected and the alternative hypothesis is accepted. Consequently, it is clear that only experience (EXP) and Education (EDU), mode of operation (MOP), hours worked (HOP) and turnover are the determinants of wealth accumulation of the motor cycle riding business in Minna Metropolis of Niger state of Nigeria.

5. Conclusion and Recommendations

One of the major finding of the study revealed that commercial motorcycle riding business in Minna Metropolis is very important tool in poverty alleviation in the state that the average daily income of the motorcycle riders is above the national poverty line of twe dollars a day. The study further revealed that experience (EXP), age (AGE), mode of operation (MOP), hours worked (HOP) and turnover (TOV) are the main determinant of poverty alleviation for the commercial motorcycle riders in Minna Metropolis of Niger state, Nigeria. The study utilized income, consumption and asset accumulation of the riders as the yardstick for measuring the level of poverty for the respondents

Also, the study revealed that commercial motorcycle business operation in study area serve majority of the market participants' means of livelihood. Accordingly, it generates employment opportunity, most especially for the youth in and around the Minna Metropolitan area of Niger state. Overall, on the basis of the aforementioned findings of the study, the following policy recommendations are put forward: The time has come for the government at all levels to take a holistic approach at the commercial motorcycle business operation with a view to strengthening the overall strategy of regulating the conduct of the operators. Consideration should be made to bring on board public private partnerships in managing the motorcycle industry in a manner that is economically viable and sustainable. Government should regulate the sector properly and promote safety net of the

riders and the pedestrian. Federal road safety commission and other related agencies should be instructed to conduct training of the riders to minimise road accident and other related traffic problems associated with the business. Finally, further research should be undertaken to investigate the effect of having saving schemes for the motorcycle operators on their livelihoods

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