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Impact of Tricycle Transportation Earning on Poverty Reduction in Kaduna Metropolis, Nigeria

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ABSTRACT

This study assessed the impact of tricycle transportationpopularly known as (Keke-Napep) on poverty reduction in Kaduna metropolis. The main source of data for the study is primary and was obtained through the use of structured questionnaires. A total of 370 questionnaires were administered to tricycle operators within Kaduna metropolis by the use of clustersamplingtechnique. Foster,Greer and Thorbecke model of mathematical poverty measurements were used for the data analysis in the study. Findings of the workshown that, 85 percent of the tricycle riders earned above poverty line. This implies that 15 percent of the tricycle riders earn below minimum wage level in Nigeria.It was concluded that commercial tricycle as subset of transportation in Kaduna state has a significant impact on income generation to the riders. The study recommended that Government should recognize tricycle operation as an agent of development since it has the capacity to create employment and reduces poverty in the state.

Keywords: Poverty line,Poverty severity, Tricycle,Fostre, Greer and Thorbecke

1. Introduction

Poverty is a wide spread phenomenon and the greatest challenge in the world today. The persistent increased in the level of poverty has become a leading public issue in this twenty one century. According to Ajegi (2011) about 2.8 billion people in the world live in complete poverty. Ikon (2010) observed that in all parts of the world, the extent, severity and characteristics of poverty may differ greatly within and across countries. Incidence of poverty in Nigerian is about 53.3 percent of the population based on Oxford poverty and human development initiative (OPHI,2016) observation. The World Bank (1996) postulated that Nigeria is rich but its people are still living below the poverty line. Most of the succeeding governments in Nigeria established poverty alleviation programs and job creation schemes. Some of the programs are National Poverty Eradication Pogramme (NAPEP) in 2001, Community Skills Development Programme (CSDP) in 2010,Youth Enterprise with Innovation in Nigeria (YOUWIN) in 2011, Subsidy Reinvestment and Empowerment Program known as (SURE-P) in 2012 and Social Investment Programme like N-power in 2016. It seems that these programmes have not significantly reduced mass poverty among Nigerians.

Kaduna State government banned the use of the motorcycle as a means of commercial transportation in the major cities of the state because Boko Haram insurgents have been accused

of using motorcycles to perpetuate crimes in the State. To cushion the effects of the ban, the government gave out 1000 tricycles to the commercial motorcycle riders on loan in order to support the transportation system. The ban on commercial motorcycle riders led to the movement of tricycle transport business by these displaced on the ban. The introduction of tricycle through (NAPEP) by both government and private individuals was meant to empower the poor, jobless and unemployed Nigerians. But poverty and unemployment still remain on the increase in Nigeria. Unfortunately, noknown study by the researchers have been carried outciting Kaduna state on income and poverty reduction implication of commercial tricycle (Keke-Napep) mode of operation. This is therefore an attempt to fill the gap of existing literature in this field. It is on this reason, therefore that the study seeks to investigate the contribution of commercial tricycle transportation (Keke-Napep) business on rider's income in the Kaduna metropolis.

The study is significance because it would unveil the potentials of tricycle transportation to the government, the poor and the unemployed in Kaduna state. The research will add to the depth of the literature on tricycletransportation (Keke-Napep) in Nigeria and this would be a merit to researchers in the study area.

2.literature Review and Theoretical Framework
Conceptual Review
The Concept of Poverty
Poverty can be defined base on statistical or expert people derived ones. The statistical definition referred to the definition of poverty on figures, numbers and percentages to define poverty. For instance, OPHI, (2016) observed poverty as any income earned below US $1.90 a day for the developing countries. Expert derived definitions of poverty are those definitions coined by development expert. These experts could be development researchers, economists and social scientist (Ndagi and Yusuf, 2015). Alukodefines (1975) poverty as lack of command over basic needs such as food, clothing and shelter while Nnamani (2005) defined poverty as a situation where individual cannot carry out the funding of special services to self. Poverty is also defined as the inadequate of material resources to have in possession of amenities for decent living (Raji,

2012). In this study, we adopted the definition by (OPHI, 2016) on earning above US$1.90. While Opayemi (1995) refers to the poor as people who's economic situation could not allow them to have command over basic necessities of life such as food, clothes and decent, shelter. Mohammed (2009) postulated that those who are unable to obtain three square meal per dayare said to be poor.

Theoretical Framework
Basic Needs Theory
The study is anchored on the Basic Needs Theory. The basic needs theory was propounded by Maslow (1943). The fundamental idea behind this theory is that people are motivated to achieve certain needs and that some needs take precedence over others. Most basic needs are for physical survival, and this will be that thing that will motivate our behavior. Once the level is fulfilled the next level up is what motivates us move on.Maslow arranged the needs into five stages from biological or physiological, safety needs, love and belongingness needs, Esteem needs and self- actualization needs. Maslow (1943) noted that the efforts and behavioral changes observed in individuals are meant to achieve one of these needs. Nevertheless, the transmission channel which relates the commercial tricycle transport in connection with and poverty reduction is thus in terms of its relationship, poverty reduction is the function of commercial tricycle transport (correspond to hard working to become self employed). This implies that poverty reduction depend on commercial motorcycle transport.
The theory is suitable in this work because it will help to increase efficiency and productivity in business operation.

Empirical Literature
Bamidele (2016),studied the political economy of tricycle transportation business in Osogbo metropolis, Osun State. The study used probabilistic sampling method with random techniques to select 500 respondents. The study discovered that, 61.6 percent of the respondent agreed that they are engaged in "Keke NAPEP" business because they abandoned their various trade and artisans, not because expanding tricycle market economy but because income is sure and almost certain. The study also discovered that "Keke NAPEP" Unions are becoming second arms of political parties which are forming strong pressure influence in the State Osobo, Osun State.

Obinna and Ugwu, (2015) carried out a research on Users' Perception of Commercial Tricycle Services in Intra urban transport in Enugu residential areas, Nigeria. The study used primary and secondary data. 82% of the questionnaire were returned which constitute a total number of 287 properly filled were returned, collated and used for analysis out of the 350 distributed across twelve representatively chosen neighborhoods in Enugu. Cluster sampling and simple random sampling techniques were used. The study shows a significant difference in the performance of commercial tricycle services as measured by users' satisfaction indices among the different neighborhoods in the study area. Comfort, Scheduling, Appearance, Speed, Safety and Cost were the prominent passengers' satisfaction attributes that attracted passengers to use commercial tricycle in area. The study further revealed that students and youth which are teeming constitute predominant community group that uses this tricycle most in the various neighborhoods in Enugu urban.

Chinniah and Kalimuthu (2014) conducted a study on the problems and prospects of tricycle in Haussawa, Ethiopia. The study used stratified sampling technique. Data were collected with the use of structured questionnaire from tricycle operations. The study revealed that poor infrastructure which has negatively resulted into high cost of maintenance on tricycle in Hausawa. Also, the study discovered that the sector is an engine room of employment in the area.

Dike (2012) carried out a studied on the use of tricycle as a public transport mode in Nigerian cities. Questionnaires were administered to 200 public transport passengers in Owerri, Imo State, The results were analyzed by means of spearman's rank correlations and paired samples test techniques. The findings indicated that the tricycle has made significant contribution to public transportation in Nigeria cities. The study did not examine earnings and employment in commercial motorcycle business.

Shankar (2012) carried out a research on the impact of revenue of Auto Rickshaw in Vellore Town, United State of America. The study used descriptive research and data were collected using questionnaires and direct interview method. Non probability sampling techniques were used with a sample size of 70 and the result was analyzed using chi-square. The findings revealed that 97% consumers prefer auto rickshaw transportation to other means of transportation because of its safety and convenience.

Mustapha, Akande and Jimoh (2017), in their study on the impact of poverty reduction program in kwara state, Nigeria: lessons from "kekemaigida".The study focused on the "KekeMaigida" (commercial tricycle) poverty reduction program and obtained data from 112 beneficiaries, using a structured questionnaire. Questionnaires were distributed randomly (probability sampling method) in major Kwara commercial tricycles terminals in Ilorin metropolis. The study used descriptive analysis. It was found that there is significant impact to wealth creation to the riders. Therefore, the study concluded that poverty reduction program in Kwara State (Nigeria) has impact on the beneficiaries.

Ipingbemi and Adebayo (2016) conducted a study on Tricycle as a Mode of Public Transportation in Ibadan Metropolis, Nigeria. The study used primary and secondary data. Multi-stagesampling was adopted in selecting 147 tricycle registered operators from 10 loading points within the study area. Descriptive statistics were used for the data analyses. Findings indicated that all the operators were male, 73.4% had no more than secondary education and 72.8% earned belowN4, 0001daily. Unemployment was the main reason why 55.5% of them went into the business. Only 35.4% of the operators had valid license.

Raji (2012) carried out a study on the use of Auto-rickshaw (three - wheeled cycle) as poverty alleviation scheme in metropolitan areas of Lagos state, Nigeria. Data were obtained from secondary and primary sources. The study used 200 structured questionnaires. Questionnaires were randomly administered through the use of stratified sampling technique. escriptive statistics techniques were used for the data analyses. Findings indicated that in Lagos 73.5% of the operators benefited from the scheme. Also, t male operators (97.3%) dominated the scheme on an average daily income of N2000 and above.

Muktar, Waziri, Abdulsalam and Dankani (2015) carried out a study on assessment of tricycle as a

tool of poverty alleviation in Maiduguri, Bornu state, Nigeria. They used multi stage sampling techniques in collecting data and analyzed those using descriptive statistical tools. The findings revealed that male gender dominated the tricycle operation while females only surfaced as owners of the tricycle. It also increased economic activities where it reduced poverty and increased income to the tricycles operators in the state. The study did not capture the means of acquisition for tricycle transport and savings among commercial motorcycle operators.

3. Methodology

This section deals with the process of data collection, sampling and sampling procedures, the model specifications and techniques of data analysis. This premised on the result of the field survey carried out among tricycle riders operating within the four(4) metropolitan local Government of Kaduna State. These local Governments are Kaduna South, Kaduna North, Chikun and Igabi.

The study made use of primary data. The primary data were generated using questionnaire administration. In the administration of questionnaires, cluster sampling techniques was adopted and questionnaires were administered to the tricycle riders within the metropolis. They respondents were selected randomly from the four local governments that make the metropolis. From each local government, four major leading points were selected. In each of the loading points, questionnaires were randomly administered to the t r icycle operators who served as the respondent.The choice of the four local government's council areas is predicted that they are the only registered association with the state government. The population of the study covers the tricycle operators in Kaduna North, Igabi, Chikun and Kaduna South Local Government Area with a total population of 15,000 registered commercial tricycle operators(ACOTMORAN, 2016). However, 370 operators were used as the sample size. The sample size for the study was arrived at using Yamane (1967) sampling model as adjusted by Smith (1983) and cited in Usman and Umar (2013).

Thus: n=

Thus: $n = \dfrac{N}{3 + N(e)^2} = 370.33 \Rightarrow 370$

Where: n = The desired sample size, N= The population size, 3= Adjusted constant value, e= Level of precision (significant level). This is usually set at 0.05 and occasionally at 0.01.

Using the above formular, the research used the sample size of 370 tricycle operators, given that the population of the tricycle operators are 15,000.

Model Specification
Foster, Greer and Thorbecke Mathematical Model of Poverty

The model that is applied to this study had been previously used by Ishiaku, Haruna, Danwanka and Suleiman (2017)employed a mathematical model developed by Foster, Greer and Thorbecke (1984), known as the FGT model of poverty measurement. The study adopted the model to determine the incidence, poverty gap ratio, head count ratio, depth and severity of poverty in the study area. Poverty line was calculated on the basis of mean data on household income.

The model is specified as:

$$P_\alpha = \frac{1}{N} \sum_{1-P}^{H} \left[\frac{Y_p - Y_i}{Y_i} \right] \quad \dots\dots\dots\dots\dots\dots (3.1)$$

Where:

y_p = poverty line

y_i = average income of respondents household(?)

H = number of household below the poverty line

N = Total number of household

á = Foster, Greer and Thorbecke (FGT) Index which takes the values 0, 1, 2.

From the model in equation (3.1) the following indices or measures could be obtained:

(a) Head Count Ratio: This index measures the proportion of the population that are classified as poor. If alpha value equal to zero (á = 0) from equation (3.1) the poverty index becomes:

$$P = \frac{H}{N} \quad \dots\dots\dots\dots\dots\dots\dots (3.2)$$

(b) Poverty Depth (Gap): This index measure the extent of poverty as it reflects the distance the poor are from the poverty line. If alpha value equal to one (á = 1) from equation (3.1) the poverty index becomes:

$$P_1 = \frac{1}{N} \sum_{1}^{H} {}_P \left[\frac{Y_p - Y_i}{Y_i} \right] \quad \dots\dots\dots\dots (3.3)$$

(c) Severity of Poverty Index: This is the mean of the squared proportion of poverty gap. If alpha value equal to two (á = 2) from equation (3.1) the poverty index becomes:

$$P_2 = \frac{1}{N}\sum_1^H {}_P\left[\frac{Y_p - Y_i}{Y_i}\right]^2 \quad \dots\dots\dots\dots\dots \quad (3.4)$$

4.0 Interpretation and Discussion of Results.

Demographic Characteristics of the Respondents

	Variables	N=349		Variables	N=349
1.	**Gender:**	(%)	3.	**Age Bracket: (years):**	(%)
	Male	99.7		20-30	29.6
	Female	0.3		31-40	47.3
				41-50	15.3
				51 above	7.9
2.	**Marital Status:**		4.	**Level of Education:**	
	Married	70		No formal (Education)	7.4
	Single	19.7		Primary (Education)	32.0
	Divorced	10.3		Secondary (Education)	50.7
				Post Secondary(Education)	9.9

Source: Field Survey, 2017

On the demographic characteristics of the respondents, the distribution of the tricycle operator according to gender characteristics shows that 349 of them signifying 99.7 per cent of them were male while 0.3 per cent was female. This shows that the men are the major operator of tricycle business in Kaduna State. In terms of marital status, the distribution was highly skewed towards the married as 244 of them which comprises of 70 per cent of them are married, 19.7 percent are single while 10.8 per cent are divorced. This show that majority of the operator of tricycle have dependence as they are married.

Furthermore, the age distribution of the respondents shows that the tricycle operator were majorly youthful population between the age of 20 and 40. A total of 29.6 percent of them were distributed between age 20 and 30, while 47.3 per cent of them were distributed between 21 and 40 years. Only 15.3 percent and 7.9 percent of them were between 41-50 and over 51 years of age respectively. Moreover, on the level of education of the respondent majorly represented in this survey, 50.7 percent attend secondary education, 32 percent attain primary school level, and 9.9 percent attain post secondary school level while 7.4 percent have no formal education. Despite having majority who are of secondary school level, it was found out that they have problem in reading and writing. This

Therefore necessitate the use of junction secretaries to assist the tricycle operator when filling the questionnaires in order to obtain relevant information's for the study.

Foster, Greer and Thorbeck (FGT) Mathematical Measurement of Poverty for tricycle riders.

TIPHE	MHI	PL	HCR	PGR	PD	PS
906,989.51	2598.823	866.27	15%	44%	7%	3%

Where TIPHE= Total income per household equivalent daily: this was arrived by dividing each household income by the household size raised to the power of 0.7 being equivalent scale expressed as $INC/n^{0.7}$. The income per household equivalent was summed up to given below.

Total Income per household equivalent = ? 906,989.51

Mean household income (MHI)

Mean household Income = $\frac{906,989.51}{349}$ = ? 2598.8238109

MHI = ? 2598.8238109

Poverty line (PL)

Poverty line = $\frac{1}{3}$(MI) = $\frac{1}{3}$(? 2598.8238109)

Poverty line = ? 866.27

From the result above result, the study finds out that the commercial tricycle riders average daily income during the operation is above poverty line of 1.90% with is equivalent to ? 694 at 365 Nigerian exchange rate per dollar.

Total income of poor = ? 32421.50

Average income of poor = $\frac{32421.50}{54}$ = ? 600.39814815

Headcount ratio(HCR)

= $\frac{54}{349}$ = 0.1547277937 ≅ 0.15 = 15%

The **Head count ratio** (HCR) is the proportion of a population that exists, or lives, below the poverty line or cannot afford to buy the basic basket of food.

Poverty gap ratio (PGR) = $\frac{Y_P - Y_1}{Y_P}$

= $\frac{866.27 - 600.398}{600.398}$ = $\frac{265.872}{600.398}$ PGR = 0.44 ≈ 44%

The above finding is showing the poverty gap ratio is the average shortfall of the total population of tricycle riders in the study.

Poverty Depth (PD) = HCR X PGR
= 0.15 X 0.44= 0.066 or ≈ 7%

The **poverty** gap index is an improvement over the **poverty** measure headcount ratio which simply counts all the people below a **poverty** line, in a given population 7 percent of the income is required to bring the household that are poor up to the poverty lines. Furthermore, it is the total percentage of people that are close to the poverty line and are strugglingto moveout of the level of poverty line.

Poverty Severity (PS) = HCR X (PGR)^2
= 0.15 X (0.44)^2 = 0.02904 = 3%

Poverty severity among the commercial tricycle riders is 3 percent. This simply means that the 3 percent are the poor among poor.

5. Summary of Findings

The study has brought several important findings. In the study, only 0.3 of the riders are females in the business, commercial tricycle operations is a source of income for many Nigerian youths and this has shown the importance of the transport sector in the labour absorption process in the urban informal sector of Nigeria. The outcome of this study revealed that individual member of the tricycle rider by income, one-third(1/3) of the mean income of the whole sample under study was used to establish poverty line at ? 866.27per day. The poverty measures indicated in the above table 4.2 revealed that only 15 percent of the tricycle rider's households out of 349 sample tricycle were classified to be living below the poverty line, while 85 percent of the tricycle riders were above the poverty line. The poverty headcount, depth and severity were, 0.15,0.07and 0.03. This means that 15 percent of the sample riders live below poverty line of ? 866.27per day, while 7 percent of the income is required to move tricycle riders that are up to the poverty line. The poorest among the tricycle riders account for 3 percent. The findings also go in line with other studies whose range of results of incidence revealed the depth and severity of poverty were found to be Dontsop, DiagneOkoruwa, and Ojehomon (2015) 30 percent, 20 percent,14 percent and 9.9 percent respectively. The result of this study revealed that income obtained as a result of involvement in tricycle riding has made the riders to earn above the poverty line of US$1.90 as provided by Oxford Poverty Human Development Initiative (OHPI, 2016).

The findings also show that, 15% of the tricycle riders are non-poor. The result simply means that poverty percentage is reduced among the riders. According to (OHPI, 2016), Kaduna incidence of poverty is 57.3% which is relatively higher than the above studied incident of poverty.

Conclusion

Given the analysis in this study, some conclusions can be drawn. Commercial tricycle operators generate income daily to sustain their livelihood. The commercial tricycle rider earns an average of N866.27 daily. It then follows that all the commercial tricycle riders in Kaduna State live above poverty line. Precisely 85 percent of the commercial tricycle riders live above poverty line using the international benchmark of living at least on 1.9 dollar per day. Also, the earnings of tricycle operators were higher than those of the public servants based on N 18,000 minimum wage in Nigeria.

Recommendations

The government should recognize tricycle business as an agent of development since it create job and reduce poverty in the state. They should make their union as a link between the operators and the government.
Kaduna State government should increase the number of tricyclesgiven to the youth especially to the females since it has the capacity to reduce poverty within the metropolis.
Also, the study recommended that all the tiers of government in Nigeria are urging to look at the tricycle business as a viable means of generating income to the poor.

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