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Use of Multiple Logit Regression Model in the Evaluation of Socioeconomic Variables Influencing Poverty among Households in Maiduguri, Nigeria

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ABSTRACT

The study examined socioeconomic variables influencing poverty among households in Maiduguri Metropolis, Nigeria. The study used self-developed questionnaire to collect data from four hundred (400) respondents. The study employed descriptive and inferential statistics for data analysis. Descriptive statistics (frequency counts, percentages) was used to analyze the socio-demographic data of the respondents, while inferential statistics (logit regression analysis) was used to analyse the influence of socioeconomic variables on poverty among households. The results were presented in tables and discussed according to the research objectives. The study revealed that socio-economic variables have significant influence on poverty among households. Also, socio-economic variables (Gender of household head, Marital status of head, educational level of household head, Employment, Household size, Access to credit facility and Property) were the determinants of poverty in Maiduguri Metropolis. The study recommended that increase in household size increases the incidence of poverty, hence efforts should be made towards family planning for effective population control and also policies should be made towards increase in employment opportunities in order to reduce dependency ratio among households, thereby alleviating poverty.

Keywords: Socio-economic Variables, Poverty, Households, Logit Regression.

1.1 INTRODUCTION

Nigeria is the top oil exporter in Africa, which has helped to create wealth related to crude sales that account for more than half of government revenue. But a failure to diversify the economy and to build much-needed system of revenue generation to better the welfare of households through poverty reduction and increase growth for the nation has pitched the country against extreme poverty. Rapid population growth outstrips economic growth, which stands at about 2%. The United Nations estimates that Nigeria will have a population of 400 million by 2050 NBS (2019). In Nigeria, poverty continues to exist as a major socioeconomic issue in spite high level of economic growth. Despite all technological discovery and policy reforms to actuate the Nigerian economy, large proportions of Nigerians still live in a world where more than half of the population live in hunger, lack access to basic necessities such as safe drinking water, shelter, clothing etc. live in a state of despair. However, the government has achieved some level of progress at the global level in terms of strategies for poverty reduction, but indication of poverty in Nigeria still remains at alarming rate.

Even before the COVID19 crisis, around 4 in 10 Nigerians were living in poverty and millions more were vulnerable to falling below the poverty line, as growth was slow and was not inclusive. Based on the most recent official survey data from the Nigerian National Bureau of Statistics, 39.1 % of Nigerians lived below the international poverty line of $1.90 per person per day in 2018/19. Pre-crisis poverty in Nigeria disproportionately affected rural dwellers and households living in northern Nigeria. Among those living below the $1.90 poverty line in 2018/19, 84.6% lived in rural areas and76.3% lived in the North Central, North East, or North West zones (World Bank, 2020).

The situation in Maiduguri is even more compounding due to insurgency. The State Government, family, associates of the displaced as well as various non-governmental organizations are burdened. Maiduguri is not an exception when it comes to the issues of poverty. This is because the relationship between the people and household welfare has been an interesting one due to poverty intensity which is deeply rooted among households. This widespread persistent poverty could have serious economic, social and mental consequences on the area.

Although previous studies have investigated trends and profiles of poverty (Talba *et al*., 2010, Anyanwu, 2012, Akinbode, 2013) empirically, there is a limited number of studies investigating the determinants of poverty and its effects on household welfare in Maiduguri, Borno State, Nigeria. Furthermore, this study is motivated by previous findings from the existing studies which have not offered clear evidence regarding the determinants of poverty and its effects on household welfare, which creates a gap in the literature and has serious policy implications. Therefore, the need for this study. Lastly, the

study aimed at responding to recommendations by Anyanwu, (2012), Talba & Munakur (2019) and few other researchers who called for further studies on the same matter by extending time frame as well as analytical tool. Based on this, an understanding of the empirical analysis of factors influencing poverty in Maiduguri is a prerequisite.

1.2 Objectives of the Study

The objectives of the studies are to:

    i.   identify the socioeconomic characteristics of the respondents;

    ii.   examine the factors influencing poverty in Maiduguri;

1.3 Scope of The Study

The scope of the study is influence of socioeconomic of households on poverty in Maiduguri Metropolis, Borno State, Nigeria.

2.1 LITERATURE REVIEW

2.1.1 Conceptual Issues

This section discussed the various concepts related to the subject matter under investigation. It is an abstraction from related study carried out by other researchers in the field.

2.1.2 Poverty

The meaning of poverty is one of the issues that has beget different opinions, disputes and intense debate among experts and researchers in development Economics and such debate tends to be overshadowed by researchers' socio-cultural, ethical, political, or ideological orientation, and norms and conventions of his/her community, institution, or organization (Iyenda, 2007).

A precise and unanimously accepted definition of poverty is elusive principally because it affects several aspects of the human sphere, such as physical, moral and psychological conditions (Ajakaiye & Adeyeye, 2002). The notion of poverty is connected to different number of indictors depending on perception by region, society or communities and it can take various forms depending on the issues being addressed.

One of the broadest contemporary views of poverty is that of the European Commission, which claims that "people are said to be living in poverty if their income and resources are so inadequate as to preclude them from having a standard of living considered acceptable in the society in which they live. Because of their poverty they may experience multiple disadvantage through unemployment, low income, poor housing, inadequate health care and barriers to lifelong learning, culture, sport and recreation" (European Commission, 2004).

Fundamentally, poverty refers to lacking enough resources to provide the necessities of life-food, clean water, shelter and clothing. However, nowadays that can be broadened to include access to health care, education and even transportation. In government circles, poverty is often further defined as "absolute poverty" and "relative poverty (Omotola, 2008). There are many types of poverty as the definition of poverty further entails absolute poverty as defined by Balami and John (1999) which refers to lack of the minimum physical requirements of a person or a household for existence, so extreme that those affected are no longer in a position to live "a life worthy of human dignity". Relative poverty refers to a person or household whose provision with goods is lower than that of other persons or households (Balami & John, 1999). Furthermore, Balami & John (1999) quoted conjectural poverty as a temporary phenomenon which normally self-sufficient individuals go through in crises while structural poverty is long term and normally caused by individual circumstance. Poverty is also categorized as either chronic or transitory. A chronically poor household is poor throughout but if it is only for some time, then it is transitory poverty.

Poverty is a condition of having insufficient resources or income and can also be defined as the state of one who lacks a certain amount of material possessions or money (Encarta, 2009). Poverty is a state of insufficiency or inadequate resources of either financial or physical materials needed. *"Poverty is hunger. Poverty is lack of shelter. Poverty is lack of money to attend to one's health problem.* UNDP (2000) gives a comprehensive summary of the basic definitions of poverty. They are divided into two major categories, income and human poverty. Income poverty is further divided into extreme poverty and overall poverty. It is defined as the lack of income necessary to satisfy basic food needs usually defined on the basis of minimum calorie requirements. Overall poverty is the lack of income necessary to satisfy essential non-food needs such as shelter, clothing, and energy. On the other hand, human poverty is the lack of basic human capabilities, illiteracy, malnutrition abbreviated life span, poor material health, and illness from preventable diseases.

Poverty is the lack of the means to satisfy basic material and social needs, as well as a feeling of powerlessness. Poverty is non-uniform, complex, multi-dimensional, cyclic and seasonal (Mabangi 2000). This means poverty can be classified based on different needs and it is multidimensional. Talba *et al.*, (2010) viewed poverty as the condition of lacking basic human needs such as nutrition, clean water, health care, clothing and shelter because of the inability to afford them.

Poverty entails more than the lack of income and productive resources to ensure sustainable livelihoods. Its manifestations include hunger and malnutrition, limited access to education and other basic services, social discrimination and exclusion, as well as the lack of participation in decision-making (UN, 2019). Poverty is multidimensional, it is conceptualized in different views by different societies and scholars, and it also involves deprivations in several aspects of life including economic, social, cultural, political and environmental dimensions. *Poverty is being sick and not being able to see a doctor, Poverty is not having access to school and not knowing how to read, poverty is not having a job, is fear for the future, living one day at a time." (Babatunde, 2018).*

The World Bank's (2020) poverty definition says, "A person is considered poor if his or her income level falls below some minimum level necessary to meet basic needs." It sets this minimum level, or international poverty line, as living on less than $1.90 a day.

Talba and Munakur (2019) define poverty as a state or condition in which a person or community lacks the financial resources and essentials to enjoy a minimum standard of life and well-being that is considered acceptable in society.

2.1.3 Socioeconomic characteristics of the respondents

Akerele and Adewuyi (2011) studied assessment of household poverty and welfare among households in Ekiti State, Nigeria. Using a multistage sampling approach, a total of 80 households were selected and interviewed with the aid of well-structured questionnaire. Data collected were subjected to analyses such as descriptive statistics, poverty index and multiple regression analysis. The result revealed that 38.30 % of the households covered by the study were poor and would have to mobilize financial resources up to 41.80% of 1 US Dollar (N130) per day (for each household member) to be able to escape poverty. Female headed households in the study area appear to be more vulnerable to income poverty with poverty incidence, depth and severity of values 0.221 and 0.239, 0.402 and 0.191, respectively. Highest levels of poverty were found among household with 7-9 dependents with values 1.00, 0.715 and 0.511 for the incidence, depth and severity of poverty respectively. Educational levels of household head and spouse, gender of household head and dependency ratio are factors that exact significant influence on household welfare. In order to reduce poverty and promote peoples' welfare, policies that would promote employment opportunities; educational status of household head, spouse and household members as well as efforts to enhance women access to more productive resources and investment in infrastructural development are recommended.

In a different study Umeh *et al.,* (2013), examined the socio-economic characteristics and poverty on small scale farmers in Apa Local Government Area of Benue State, Nigeria**.** Respondents (120) were selected based on multi-stage sampling procedure, and structured questionnaire was used to generate appropriate data. Descriptive and inferential statistics were employed to analyze data. The respondents were predominantly male (79.80%) between 41 – 50 years and with more than twenty years farming experience. About 45% of them have households comprising 6-10 people and implies large family size. About 48.70% of them had only primary school education and 65.80% have dependents of between 1- 5 people. A large proportion (44.50%) of respondents does not have off-farm income, and majority (62.20%) was poor. Logistic regression results showed that age (0.336) and farm size (0.415) significantly and positively affect poverty status of respondents. Years spent in formal school (-2.138) and farming experience (-0.349) were also significant. Most (62.20%) of the farmers live on less than one US dollar per day. Human capital development and training opportunity, if provided, will not only enhance the acquisition of more human capital, but also more income that will combat poverty.

Adekoya (2014) examined the poverty status of farm households in Ogun State, Nigeria using a descriptive statistic, Foster, Greer and Thorbecke poverty (FGT) indices and Logit regression model. The data used were generated from a survey involving 117 farm households randomly selected using multistage sampling technique. Results of analysis revealed that majority (70.9%) of the farm households do not have access to potable water; they live in mud buildings while the common toilet facility was the bush. The mean per capita consumption expenditure among the farm households was ₦9,103.85 with the FGT poverty incidence, poverty gap and severity of poverty estimated to be 78.1%, 55.8% and 43.0% respectively. Poverty incidence was found to be higher among male headed (60%) and farming (63.9%) households and those having over five members (66.1%). The logit regression further indicates that the likelihood of being poor were more with large households, non-educated farm households head and households without access to credit and other non-farm income. It is therefore recommended that government should strengthen the various government credit agencies in order for them to make enough credit available to farmers, strengthen the adult literacy education programmes and encourage farmers to expand their farm land for increased production.

In a different country, Maloma (2016) studied the socioeconomic determinants of household poverty status in a low-income settlement in South Africa. In the study a survey questionnaire was used to collect data from a sample of 300 households in Bophelong Township in Gauteng province during the second half of 2013. The aim of the study was to evaluate the impact that certain household and individual characteristics (size of the household, gender of the head of the household, etc.) can have in determining the poverty status of a household. A binary logistic regression was used to analyze the data. The results show that the education level of the head of the household, his/her employment status and age were inversely related to poverty status. Improvements in the education level and increases in the age of the head of the household were found to decrease the probability of a household being categorized as poor. Households in which the head of the household is employed have a lower probability of being categorized as poor.

In a similar study, Ojeleye and Okojie (2017) examined some socio-economic (income, personal savings, age, belief system) characteristics and poverty level of commercial motorcycle riders popularly known as Okada riders and poverty level in Gusau Metropolis, Zamfara state. Four socioeconomic variables; income, savings, age and belief system are the independent variables while poverty level is taken as the dependent variable. Multiple linear regression model is used to understand if there is any significant relationship between Poverty and personal income, personal savings, age and belief system. Structured questionnaires were handed over to 200 commercial motorcycle riders in Gusau metropolis. The finding suggested that there is a

significant relationship between socioeconomic (personal income, personal savings, age and belief system) characteristics of commercial motorcycle riders and poverty level in Gusau metropolis, Zamfara state.

In South-Eastern Nigeria, Eze *et al.,* (2019) examined the socio-economic factors influencing poverty among rural households in Onicha Local Government Area of Ebonyi state, Nigeria. The study adopted multistage random and purposive sampling techniques to select 120 household heads. Primary data used for the study were collected using structured questionnaire. The data were analysed with the aid of means, percentage and frequency count and OLS multiple regression model. The result indicated that the households spent an average of N31, 250 monthly to take care of their families and other essential personal needs. The result of the socio-economic characteristics showed that majority (53.3) of the respondents were females. The mean age was 36 years with majority (64.2%) married while an average of 6 persons per household was recorded. The predominant occupations were farming (36.0%) and civil service (35.8%). The households cultivated a mean farm size of 3.8 hectares, the mean monthly income was N19, 720 while their average monthly expenditure amounted to N31, 250. Moreover, 73.3% of the respondents belonged to one social organization or the other with over 90.0% of them having acquired various forms of formal education. The multiple regression result showed the coefficient of determination (R^2) was 0.644 or 64.4%. The overall model was statistically significant ($P<0.05$), signifying that the selected socio-economic characteristics of the households have significant influence on their poverty level. The coefficients of age, sex, educational attainment, household size, farm size, income and membership of social groups were statistically significant. The hypothesis tested led to the conclusion that the selected socio-economic characteristics have significant influence on the poverty level of the households. The study recommended improvement of socio-economic attributes that improve the poverty level of rural households.

2.1.4 Factors influencing poverty

 Chaudhry and Rahman (2009) put forward an empirical analysis of gender inequality in education and its impact on rural poverty in Pakistan using survey data. Empirical findings from the study indicate that household size and female-male ratio have more probabilities of being poor. While, female-male enrollment ratio female-male literacy ratio, female-male ratio of total years of schooling, female-male ratio of earners, and education level of household head have significant negative probability on rural poverty.

Achia *et al.,* (2010) conducted a logistic regression analysis to identify determinants of poverty in Kenya using demographic and health survey, 2003. This study revealed that household headed by a protestant, household headed by a Muslim, rural communities, and ethnicity are significant factors explaining distribution of poverty in Kenya.

In Another study by Anyanwu (2010), studied the determinants of gendered poverty in Nigeria using 1996 National Consumer Survey dataset. The study results revealed that female headed household model suggests that age of the household head and her level of education have negative probabilities of being poor. Households residing in rural areas, north central, working in manufacturing sector, household size and age square have positive probabilities of being poor.

2.2 Theoretical Review

This section presents the theories adopted for the study.

2.2.1 The Theory of Individual Deficiencies

This theory of poverty attests that the individual is liable for their own poverty condition. Bradshaw (2006) reprimands the poor for causing their own circumstance, contending that with constancy on difficult work and better decisions the poor might have stayed away from and tackled their issues. He clarified further that poverty is brought about by absence of hereditary characteristics, for example, knowledge that are not so effectively turned around. This hypothesis depends on American qualities and confidence in the unregulated economy framework, a framework thought to give freedom to all. Rank (2004) affirmed that the confidence in independence puts a lot of accentuation on individual difficult work, and obligation to obtain essential necessities including food, asylum and medical care administrations. The individual hypothesis of neediness is condemned because with the presentation of the idea of acquired insight in the nineteenth century, the genetic counseling development proceeded to excuse poverty and surprisingly sanitized the individuals who seem to have restricted capacities. According to Bradshaw (2006) convictions that the poor are brought about by the sign of Cain; they are intended to endure, should endure in reality as a result of their ethical failings.

3.1 METHODOLOGY

This study adopted the survey method. The choice for the survey method is as a result of the fact that it focuses on getting subjective opinion of respondents and aims at drawing an accurate assessment of the entire population by studying sample derived from the population (Osuala, 2005). Data sources employed include the internet, journals, articles, textbooks, and primary data.

The population of this study comprised all the households in Maiduguri Metropolis. The study area was stratified according to high, medium and low residential areas as geographical locations (Maina *et al.*, 2012). These represent the three income groups of the households. The area is purposively selected, MMC comprises fifteen (15) wards in which 6 wards were randomly selected after grouping the 15 wards into income groups. Purposive sampling technique was adopted in selecting respondents as there is likelihood of mix up of income groups in the wards areas. The total number of

households in Maiduguri Metropolis is 210,708. A total of four hundred (400) households were interviewed in the six wards (Shehuri north, Gwange 1, Lamisula, Gamboru, Maisandari and Bolori 1) selected for the study.

In calculating the sample size for the study, the researcher applied the formula propounded by Taro Yamane (1973) with 95% confidence level on the study population. The calculation formula of Taro Yamane is presented as follows:

$$n = \frac{N}{1+N(e)^2}$$

Where :

n= sample size required

N = total population of households in Maiduguri Metropolis (210,708)

e = margin of error (0.05%)

Substituting the numbers into the formula:

Maiduguri Metropolis, Households population was estimated by Borno State Primary Health Care, 2023 to be 210,708.

$$n = \frac{210,708}{1+210,708(0.05)^2}$$

$$n = 399.24209 \simeq 400$$

Data collated were analyzed using descriptive (frequency distribution tables, simple percentages) and inferential (Logit regression) statistics with the aid of Stata version 9 software.

3.2 Logit Regression Model

Essentially, logit regression model makes inferences about poverty status; it has been widely used to measure the determinants of the probability of household being poor in developing countries (Sekhampu, 2013; Geda *et al.,* 2005; Khalid *et al., 2005* among others). These studies specified the dependent variable as a binary variable taking a value of 1 if the household is poor and a value of 0 if the household is non poor. Despite the popularity of this approach, it has been criticized for leading to loss of information from collapsing income or consumption data into a binary variable, since all non-poor households are treated alike, as censored data (Datt and Jolliffe, 2005).

The logit model is specified as:

$$\frac{P_j}{(1-P_j)} = \delta_0 + \left(\sum_{i=1}^{n} \delta_i X_{ij}\right) + u_j \quad - \quad - \quad - \quad - \quad\quad 1$$

Where P_j is the probability that the jth household is poor?

δ_o and δ_i are parameters to be estimated

u_j is the random error term

X_{ij}'s are the explanatory variables.

Where:

W = η0 + η1G + η2M + η3E + η4Z + η5A + η6D + η7C + η8R + ε

Where

W = Per capita expenditure of the household

P= Poverty (1 if poor, 0 if non poor) - -   -   - dummy

G = Gender of head

M= Marital status of head

Divorce, single, widow or widower)

E= Educational level of household head (in years spent in

School)

Z= Employment (1 if employed, 0 if unemployed)

R = Household size

A= Age of household head (in years)

D = Dependency ratio)

C = Access to credit facility (1 if head has access, 0 if

Otherwise)

O= Property (1 if yes, 0 if otherwise)

4.1 RESULTS AND DISCUSSION

4.1: Socio-economic Characteristics of the Respondents

Table 1: Gender and Age Frequency Distribution of the respondents   n = 400

Variables	Frequency	Percentage (%)
Gender		
Male	370	92.5
Female	30	7.5
Age (in years)		
41-50	225	56.25
31-40	128	32
Above 50	43	10.75
21-30	2	0.5
Less than 20	2	0.5
Total	**400**	**100**

Source: Field survey, 2023

Table 1 shows gender and age distribution of the respondents. 400 respondents participated in this study, out of which 92.5% were males and 7.5% were females. Majority of the household heads were males. Households in the study area were guided by religious beliefs and cultural inclinations regarding household headship. This implies that the incidence of poverty is highest among male household heads. This may be due to increase in responsibility (Adekoya, 2014).

Table 1 also shows that 56.25% of the household heads were between the ages of 41-50 years, 32% were between the ages of 31-40 years, 10.75% were above the 50 years and 0.5% were between the ages of 21-30 years and below 20 years. Household headed by person above 50 years is likely to be more vulnerable to poverty than household headed age below 50 years. The figures generally show that levels of poverty increase as we move up the age ladder. This is because youthful age (working age) people are more active and productive than old people (Umeh *et al.,* 2013).

Table 2: Marital Status of the Respondents   n = 400

Variable	Frequency	Percentage
Marital Status		
Single	4	1
Married	377	94.25
Divorced	6	1.5
Widow	13	3.25
Total	**400**	**100**

Source: Field survey, 2023

Table 2 shows that majority of the household heads were married (94.25%). This means that majority of the households headed by married persons are more vulnerable to poverty. This is because a married person tends to have more financial burden than an unmarried person (Eze *et al.,* 2019).

Table 3: Level of Education of the Respondents   n = 400

Variable	Frequency	Percentage
Level of Education		
No formal Education	48	12
Primary Education	23	5.75
Secondary Education	180	45
Diploma	76	19
University	73	18.25
Total	**400**	**100**

Source: Field survey, 2023

Table 3 shows that majority of the household heads had secondary education (45%). This means that majority of the households are vulnerable to poverty because level of education is a determinant of income and poverty. Nigerian poverty is high for those with little (primary and secondary) or no education. Table 3 also shows that the level of education is an important determinant of poverty. It can be concluded that majority of the household head (45%) had O' Level Certificate. Household heads with no education has a higher proportion of poverty than those with education, increase in the level of education increase the likelihood for higher income (Akerele and Adewuyi, 2011).

Table 4: Household Size of the Respondents   **n=400**

Variable	Frequency	Percentage
Household Size		
1-5 members	81	20.25
6-10 members	285	71.25
11-15 members	23	5.75
16-20 members	11	2.75
Total	**400**	**100**

Source: Field survey, 2023

Table 4 shows that majority of the respondents were 6-10 members in their household. This implies that majority of the household under study are vulnerable to poverty. This implies larger households are more vulnerable to poverty than small households size (Eze *et al.,* 2019). While households with one person showed the least incidence of poverty, households with more persons especially those with 6-10 households size showed the highest incidence of poverty.

Table 5: Sources of Income of the Respondents   **n = 400**

Variable	Frequency	Percentage
Source of Income		
Small scale business	218	54.5
Salaries/wages	83	20.75
Grant	58	14.5
Sales of farm produce	32	8
Remittance	6	1.5
Pension	2	8
No income	1	0.5
Total	**400**	**100**

Source: Field survey, 2023

Table 5 shows that majority of the household heads sources of income were incomes from small scale business (54.5%). This implies that majority of the respondents were vulnerable to poverty. This is because business has a lot of financial risks that if not being taken care of it can result in business closed down.

Table 6: Assets of the Respondents   **n = 400**

Variable	Frequency	Percentage
Assets		
Household furniture	132	33
House	123	30.75
Land	6	1.5
Animals	92	23
Shops	27	6.75
Others	11	2.75
No assets	9	2.25
Total	**400**	**100**

Source: Field survey, 2023

Table 6 shows that 33% have furniture, 30.75% have houses as assets, 1.5% have landed assets, 23% have animals, and 6.75% have shops as assets. This implies that majority of the respondents have furniture (33%) as assets (Eze *et al.,* 2019). But furniture has a limited life span and cannot be used to secure capital since it decays and changes form overtime and its value also depreciates which can make the household vulnerable to poverty.

Table 7: Monthly Income of the Respondents   n = 400

Variable	Frequency	Percentage
Monthly Income		
10,000-50,000	265	66.25
51,000-100,000	2	0.5
101,000-150,000	2	0.5
151,000-200,000	22	5.5
201,000 and above	109	27.25
How frequently is the income?		
Unpredictable	219	54.75
Predictable but changes dramatically	90	22.5
Predictable throughout	86	21.5
Predictable but changes slightly	5	1.25
Total	**400**	**100**

Source: Field survey, 2023

Table 7 shows that majority of the household heads (66.25%) earned ₦10,000-50,000 monthly and mostly the incomes are unpredictable (54.75%). This implies that majority of the households under study were vulnerable to poverty. This is because household head that earns ₦ 10,000-50,000 monthly and with income unpredictable cannot cater for his basic needs especially with the high cost of living and inflation. Income is a significant characteristic in explaining poverty (Ojeleye and Okojie 2017).

Table 8: Monthly Expenditure of the Respondents   n = 400

Variable	Frequency	Percentage
Monthly Expenditure		
10,000-50,000	264	66
51,000-100,000	56	14
101,000-150,000	45	11.25
151,000-200,000	31	7.75
201,000 and above	4	1
Total	**400**	**100**

Source: Field survey, 2023

Table 8 shows that majority of the household heads (66%) spend ₦10,000-50,000 monthly. This implies that majority of the households under study spend almost all their income on personal needs and can't afford to save which makes the households vulnerable to poverty (Eze *et al.,* 2019). This is because household head that earns ₦ 10,000-50,000 also spends almost same amount especially households with larger size.

Table 9: Dwelling type, ownership and Meals affordability of the Respondents n = 400

Variable	Frequency	Percentage
What is your dwelling type?		
Mansion	56	14
Bungalow	74	18.5
One-bedroom Flat	58	14.5
Duplex	12	3
Tenement or many dwelling	183	45.75
Mud	17	4.25
Dwelling ownership		
Owner	220	55
Rent	180	45
How many times can you household afford to eat?		
Once	84	21
Twice	180	45
Thrice	136	34
Total	**400**	**100**

Source: Field survey, 2023

Table 9 shows dwelling type, dwelling ownership and affordability of meals of the respondents. 400 respondents participated in this study out of which 45.75 live in a tenement or many dwelling house, 55 % owned a house (face me I face you house) and afford two square meals and 4.45% live in mud buildings (Adekoya, 2014). Majority of the household heads owned their apartments, live in tenements and can only afford two square meals. Living in a tenement (houses with many households) is usually affordable (Rent), household with large family size deserves a more space to accommodate the

family size but most times you see more than five persons in a room which makes the household vulnerable to communicable diseases. Nutrition experts recommend eating three square balanced meals in a day but majority of the households can only afford two square meals and most times not minding to have a balanced meal, this is because they couldn't afford it.

Table 10: Household Economic Status of the Respondents   n=400

Variable	Frequency	Percentage
Household Economic status		
Vulnerable	267	66.25
Non-Vulnerable	133	33.75
Total	**400**	**100**

Source: Field survey, 2023

Table 10 shows that majority of the household (66.25%) were vulnerable, while (33.75%) are non-vulnerable using UN threshold 1.90 dollar per day. This implies that majority of the households under study are vulnerable to poverty. This is in conformity with Edoumiekumo., *et al.,* (2013) which analyzed the determinants of household poverty and vulnerability to poverty in Bayelsa State of Nigeria and revealed that out of the total population 59.73% were vulnerable.

4.2: Factors influencing Poverty in Maiduguri Metropolis

Table 11: Summary of Logistic Regression Analysis on factors influencing Poverty

Variable	Coefficient	Standard Error	Z	P-value	Odd Ratio
Gender of head	5.192	0.762	6.814**	0.000	179.828
Marital status of head	1.060	0.400	2.65*	0.008	2.886
Educational level	-0.833	0.454	1.835	0.066	0.435
Employment	-1.119	0.455	-2.459*	0.014	3.062
Household size	1.971	0.322	6.121**	0.000	7.178
Age of household head	0.229	0.346	0.662	0.509	1.257
Dependency ratio	22.597	4326.225	0.005	0.996	651.658
Access to credit facility	-3.777	0.741	-5.097**	0.000	0.023
Geographical location	0.436	0.460	0.948	0.343	1.547
Property	-1.723	0.481	-3.582*	0.000	0.179
Constant	13.210	4326.225	0.003	0.998	545795.695
Pseudo R^2	0.65				
Number of observation	400				

Source: Survey data, 2023, Note: ** significant at 1% level, * significant at 5% level

Independent Variables: Gender of head, Marital status of head, Educational level of household head, Employment status, Household size, Age of household head, Dependency ratio, Access to credit facility, Geographical location, Property

Dependent Variable: Poverty status

Table 11 shows that gender of household head has a positive coefficient that was significantly related to poverty at 1% level. This positive coefficient value may be as a result of the fact that household headed by woman tends to be more vulnerable to poverty than household headed by man. A unit increase in the number of households headed by woman has the likelihood of increasing households 'vulnerability to poverty by odd of 179.828. This is in conformity with the findings of Akinbode (2013) which revealed that gender has significant influence on poverty.

Marital status of head has a positive coefficient as expected and significant at 5%. This positive coefficient means that household headed by a married person is more likely to be more vulnerable to poverty than household headed by unmarried person. A unit increase in the number of households headed by married person has the likelihood of increasing households' vulnerability to poverty by odd of 2.886. This finding is in consonance with the findings of Biyase and Zwane (2017) which revealed that marital status is a significant determinant of poverty.

Educational level of household head was significant at 5% level and negatively related to poverty. The negative coefficient implies that education plays a crucial role in poverty alleviation. A unit increase in the educational level of household heads has a likelihood of decreasing poverty by odd of 0.435. This finding is in conformity with the findings of Lekobane and Seleka (2017) which revealed that educational level is a key determinant of poverty.

As expected, the coefficient of employment was negative and also significant at 1% level suggesting that a household headed by employed persons tends to be more financially secured than a household headed by unemployed persons. A unit increase in the number households headed by employed persons has a probability of decreasing household vulnerability to poverty by odd of 3.062. This finding is in consonance with the findings of Biyase and Zwane (2017) which revealed that employment is a significant determinant of poverty.

The coefficient of household size was positive and significantly related to poverty at 1% level. This implies that large households tend to be more vulnerable to poverty than small households. Hence, a unit increase in the number of people in a household has the likelihood of increasing household vulnerability to poverty by odd of 7.178. This is in conformity with the findings of Anyanwu (2010) which revealed that household size is a significant determinant of poverty.

The coefficient of age of household head was positive and insignificantly related to poverty. This implies that age of household head has no effect on poverty. Hence, age of household head is not a determinant of poverty in the study area. This opposed the findings of Sakuhuni *et al.,* (2011) which revealed that age of household head is significant and positively influences chances of household becoming poor.

The coefficient of dependency ratio was positive and insignificantly related to poverty. This implies that dependency ratio has no effect on poverty. Hence, dependency ratio is not a determinant of poverty in the study area. This disagrees with the findings of Akinbode (2013) which revealed dependency ratio (α=0.05) exerted significant effect on household welfare.

 Access to credit facility has a negative coefficient and significantly related to poverty at 1%. This implies that household that have access to credit facility tend to be more financially secured than households that have no access to credit facility. A unit increase in the number of household that have access to credit facility has the likelihood of decreasing household vulnerability to poverty by odd of 0.023. This is in conformity with the findings of Minch (2016) which revealed that access to credit facility has strong negative association with household poverty, while this is in disagreement with the findings of Talba and Umar (2019) which revealed that access to credit facility is key determinant of poverty and its reduction.

The coefficient of geographical location was positive and insignificantly related to poverty. This implies that geographical location has no effect on poverty. Hence, geographical location is not a determinant of poverty in the study area. This finding is in disagreement with the findings of Anyanwu (2010) which revealed that geographical location has negative probability of household being poor. Households residing in rural areas, north central, working in manufacturing sector, geographical location have positive probabilities of being poor.

Property has a negative coefficient and significantly related to poverty at 5%. This negative coefficient means that households that have assets tend to be more financially secured that households that have no assets. A unit increase in the number of households that have assets has the likelihood of reducing households' vulnerability to poverty by odd of 0.179 in the study area. This is in conformity with the findings of Adepoju (2018) which revealed that property or assets influenced transient poverty.

Table 11 also, shows a significant impact of Gender of household head, marital status of head, Educational level of household head, Employment, Household size, Access to credit facility, Property on poverty in Maiduguri Metropolis. This is because the probability values of the independent variables (Gender of household head, Marital status of head, Educational level of household head, Employment, Household size, Access to credit facility, Property) were less than the alpha value (P<α). This implies that Gender of household head, Marital status of head, Educational level of household head, Employment, Household size, Access to credit facility, Property were the determinants of poverty in Maiduguri Metropolis. The pseudo R^2 = 65% indicates that the model is suitable for explaining the impact of Gender of household head, Marital status of head, Educational level of household head, Employment, Household size, Access to credit facility, Property on poverty in Maiduguri Metropolis. Seven out of the nine variables included in the model were significant in explaining the impact of the independent variables on the dependent variable. These variables are: Gender of household head, marital status of head, Educational level of household head, Employment, Household size, Access to credit facility and Property respectively.

4. 3 Conclusions

Based on the results from this study, it was concluded that socio-economic variables (Gender of household head, marital status of head, Educational level of household head, Employment, Household size, Access to credit facility and Property) were the determinants of poverty in Maiduguri Metropolis. Basic Needs, Loss of livelihood means, Households Assets, Savings, Lack of Resources, Economic Status, Productive Assets, Emergency Shocks, Types of Shocks experienced and household recovery were the determinant of households' vulnerability to poverty in Maiduguri Metropolis. Low life expectancy, poor housing, high level of hunger and starvation, unemployment, insufficient health care services, lack of purchasing power, high rate of crime and violence, lack of clean water, high rate of illiteracy, unsafe neighborhood and incidence of infectious diseases were the effects of poverty on households in the study area.

Recommendation

Based on the findings of the study, the following recommendations were made:

i. Efforts should be made towards providing and tailoring more credit facilities (with minimal stringent conditions attached) towards females and less educated people in Maiduguri Metropolis and also free education be provided for the vulnerable.

ii. Increase in household size increases the incidence of poverty, hence efforts should be made towards family planning for effective population control and also policies should be made towards increase in employment opportunities in order to reduce dependency ratio among households, thereby alleviating poverty.

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