INFLUENCE OF SOCIO-ECONOMIC FACTORS ON SCAVENGING IN MAIDUGURI METROPOLITAN COUNCIL, BORNO STATE, NIGERIA

Kindness Siben[1]

Alhaji Bukar Mustapha[1]

Shehu Usman Adam[1]

Abstract

This study analysed the socio-economic factors that influence scavenging in Maiduguri Metropolitan Council (MMC). The study examined the socio-economic characteristics of scavengers in MMC. Primary data was sourced using questionnaire; simple random sampling (lottery) and convenient sampling techniques were employed to select 320 respondents. The study made use of frequency, percentages, mean and correlation to analyse the data. The results on socio-economic characteristics indicated that an average respondent was 24 years old who only attended primary school. An average respondent in the area had been in the business of scavenging for nine years, where average hours worked was 8 with an average daily income of ₦1788. Result on correlation revealed a positive and significant correlation between age and scavenging experience, marital status and hours worked lastly hours worked and daily income of scavengers in MMC. Since most of the scavengers in the area where youth, the study recommends policies that will discourage children from venturing into the business.

Keywords: Scavengers, Middlemen, Collection points, Recyclable wastes, Socio-economic factors, Scavenging,

Introduction

Scavenging is the process of searching through waste for items that could be used for different purposes. Poor individuals around the globe are often seen on streets, dumpsites and landfills picking recyclable materials in order to sell them for survival. They also move from house to house to buy these materials and when they gather a reasonable quantity, it is then taken to the waste market, sold and profit is made in the process. There are two categories of scavengers they are; Mobile and Residential scavengers. Mobile scavengers move from one household, street, dumpsite and landfill to the other pushing a locally fabricated cart, picking and buying materials they consider valuable. The final destination of the scavenger by the end of the day is the waste market where the materials are segregated, weighed using a Salter scale and sold to the residential scavengers. The Residential scavengers on the other hand, stay at the collection points where recovered items are bought from both mobile scavengers and members of households who take the materials to waste markets directly. It is noticeable that children have also ventured into the business of scavenging may be due to increase in population which consequently increase waste generation. The age of scavengers can influence the magnitude of their scavenging activities because it sometimes requires trekking from one place to the other. The question is at what age

[1] **Department of Economics, Faculty of Social Sciences, University of Maiduguri**

should an individual be engaged in scavenging activities? Another question is whether scavengers have any form of education. The level of education of an individual can also influence one's involvement in a particular business. More so, the size of a family can influence level of education and consequently the kind of business venture undertaking. Again, the hours and the number of years used in a business may influence experience and maybe income.

Nigerian government at all levels have not paid adequate attention to scavenging activities in Nigeria, especially through policy formulation despite their potential capability of employing the teeming youth roaming the streets with no factories to employ this surplus labour. Scavenging can improve the income generation of youth in Nigeria, because households in Nigeria are gradually becoming aware of the economic value of some forms of waste materials that are recyclable. This may be due to the emergence of alternative technologies to recycle these materials. Scavengers are motivated to move from one house to the other buying waste materials to resell for profit. This study considered only the solid forms of waste because in Nigeria it appears to be more recyclable than other forms of wastes.

It seems that the high concentration of Internally Displaced Persons IDPs in MMC has resulted to generation of more recyclable waste. More so, Maiduguri is the commercial hub of the northeast and this contributes to increase in population and consequently waste generation. All of these make MMC a good area for scavenging activities and a viable market for scavenged materials. The activity of scavengers has generated a number of studies for example, Muktar (2011), Samuel (2017), Ikechukwu (2015), Mishelia (2015).However, there seem to be no documented study on the socio-economic factors that influence scavenging in MMC. The aforementioned studies gave more attention to scavengers on the streets and dumpsites with little attention on scavengers at collection points. This study included scavengers at the collection points. Because they buy recyclable waste little by little from mobile scavengers and sell same to middle men in large quantities at a later date thereby collecting more recyclable waste and generating more profit. In addition, more attention is given to the socio-economic status of scavengers even though these socio-economic variables can influence each other either positively or negatively. This study therefore analysed the socio-economic factors that influence scavenging in Maiduguri Metropolitan Council using Pearson correlation.

Conceptual Issues

Scavengers

These are individuals who pick and buy recyclable waste materials in other to sell and earn income as a means of livelihood. According to Downs and Medina (2000) scavengers have been portrayed as poor, yet in both agrarian and industrialised societies there is clear evidence that they are not always poor and they play an important role in supplying raw materials to recycling industries. Some notable individuals have been associated with these activities. An example is Abraham Lincoln's father who was a part time peddler (scavenger) when he decided to move to Indiana where he acquired a truck full of objects to peddle along the way. A onetime Indian presidential candidate, Wendell Wilkie swept and collected metal waste in his hometown in Elwood, Indiana. Scavengers usually specialise in one or two types of

materials and are very good at recognizing such materials in the waste bin (Muktar, 2011).

Waste *Recycling*

According to Adeyemi (2001) wastes are things considered as unfit, unwanted and discarded due to economic reasons or ignorance of alternative technologies to re-use them. Wastes are any discarded or abandoned materials that can be regarded as useless, unwanted product derived from the activities of the society. It is produced by either the production sector through production process (residuals) or consumption sector after the consumption of goods. Waste can be classified as biodegradable waste, recyclable waste, electrical waste, hazardous waste, toxic and biomedical waste.

This work is concerned with recyclable waste. It includes all kinds of glasses, metals and plastic materials. They are collected from dumpsites, streets and landfills. The materials are also bought from commercial and residential areas by mobile scavengers. These materials are also brought to collection centres or waste markets by members of households or by mobile scavengers to be bought by middle men. Sometimes the residential scavengers sort and clean these materials to be sold for re-used. The degree to which a particular waste material is scavenged depends on the availability of a market for such a commodity and the need for secondary raw materials. According to Downs and Medina (2000) in the pre-industrial period, metals were collected in Europe and melted down for perpetual reuse. Also in Britain dust and ash from wood and coal fires were collected by "dustmen", which served as base material used in brick making, Beverage bottles were recycled with a refundable deposit at some drink manufacturers in Great Britain and Ireland around 1800, and as a result, glass bottle could be refilled over 20 times on average. Also Downs and Medina (2000) revealed that waste recycling existed as early as the pre- industrial period where waste generated by hunters and gatherers were mostly organic in nature such as bones, feathers, shells and pieces of broken pottery. In the thirteenth and eighteenth centuries, papers were made from rags. This was of great economic importance to the extent that the economy of Spain banned the exportation of rags, and there was a free trade law between Spain and its territories in that America exempted the rags collected in the Spanish colonies from the payment of taxes. This agreement was reached to encourage Mexican rag collectors to collect more rags, which were shipped to Spain to be transformed into paper.

In developed countries, government often intervene by placing legal and financial responsibility with manufacturers and/or by providing subsidies and other economic incentives to other stakeholders in the system. For example, when a ship with waste paper from Europe entered the port of Mumbai, the price of local waste paper drops immediately.

Theoretical Framework

Marx's labour theory of value

Marx coined what he called "labour power" as worker's capacity to produce goods and services. He explained that the value of labour power must depend on the number of hours it takes society, on average to feed, cloth, and shelter a worker so that he or she has the capacity to work. The relationship between scavengers and middlemen can be described using this theory in terms of self-employed informal workers who like factory labourers engage in scavenging of which the surplus value

benefited the middlemen. Scavengers (workers) are left at the mercy of middlemen (capitalist) since they do not have strong bargaining power over the recovered materials. According to Karl Marx, they are given the amount that will only sustain them or keep them alive to salvage more materials. Middlemen lend money to scavengers on the premise that they will source materials and sell to them. This makes scavengers loyal to middle men who fix low prices on the materials to their advantage as a result may have negative effect on the socio-economic status of scavengers.

Empirical Review

The socio-economic characteristics of scavengers

Age is one of the socio-economic factors that can influence scavenging activities because sourcing recyclable waste may require a lot of energy. It will be important to know the age that is suitable and can influence the business of scavenging in an area. Samuel (2017) conducted a study on organizing waste pickers in Lagos, Nigeria and adopted qualitative method of data collection from respondents at purposively selected dumping sites. He found out that most scavengers in Lagos were within ages 19 and 47. Ikechukwu (2015) studied the activities of scavengers in Rivers State Nigeria. The study made use of questionnaire, field survey, and oral interview to collect data. Data were analysed using simple percentage, while the hypotheses were tested using chi-square. The result indicates that scavengers in the area were within ages 20 and 30 years old. Moreover, he concluded that they are at the peak of their formal productive years. Mishelia (2015) studied the socio-economic characteristics of waste pickers in Mubi and revealed that most scavengers in the area were youth and perhaps ventured into the business because they are unemployed. His result revealed that about 54% of scavengers in Mubi, Nigeria were of the age bracket 20-29 years. Aida,*et al* (2011)carried out a study on the socio-economic characteristics of scavengers in Malaysian landfills. Three landfills were selected using field observation and social survey to collect data. The result indicated that majority of their ages were within the ages of 26 to 35 years old. The findings in Asibor and Edjere (2017) revealed that 66% of the respondents were within ages 20-39 years old. Moreover, most of the scavengers residing around the dumpsites in Warri metropolis were youth. The findings in Sekyere (2014) revealed that 80% of the age of participants were between 20 and 49 years. While, the mean age was 34. The study in Kingsley (2012) revealed also that 40% of the respondents were within the age 31- 50 years old.

Gender is also a factor to be considered as far as scavenging business is concern. It is often said what men can do women can do even better. Samuel (2017) conducted a study on organizing waste pickers in Lagos, Nigeria. Adopting qualitative method of data collection from respondents at purposively selected dumping sites. He found out that most scavengers in Lagos involved both male and female waste pickers predominantly occupied by male waste pickers. The result in Ikechukwu (2015) showed that 100% of scavengers are males. Mishelia (2015) in his study, conducted a focus group discussion and field observation to collect data at the scrap (waste) market in Mubi, the study made use of descriptive statistics to analyse data. His result revealed that all respondents in the sampled area were males and he concluded that scavenging activities in the area were dominated by males. The study by Jay *et al.* (2014) revealed that 50.3% of respondents in Philippines were males and 49.7% were females. Magaji and Dakyes (2011) did an assessment on the socio-economic impact of waste

scavenging as means of poverty alleviation in Gwagwalada, Abuja. The study revealed that 100% of the respondents were males. Asibor and Edjere (2017) also conducted a study assessing the activities of scavengers and their economic impact in waste recovery in Warri Metropolis, Delta State, Nigeria. Questionnaire and interview were used to collect data. Descriptive statistics was used to analyse the data collected. The result showed that 58% of the respondents were males. He concluded that the business in the area was dominated by males. The findings in Sekyere (2014) posit that 83% participants included in the study were males. A female scavenger conceded in an interview that the male dominance in the occupation was not strange because the strain and stress associated with the job makes it unfit for women who are normally considered as the weaker sex. Kingsley (2012) conducted a study on the market operation of waste pickers in Delta State using questionnaire to collect data. Descriptive statistics was used to analyse data and the result revealed that 50% of the respondents were males.

The educational level of individuals has influence on the available jobs and choice of job they will make. The formal sector most times has jobs only for educated individuals compared to illiterates. The study in Samuel (2017) found out that most scavengers in Lagos have low level of western education. Some of the waste pickers have no training on other trades for survival. According to Ikechukwu (2015), scavengers in Rivers State Nigeria have no western education. Because his result indicated that about 59% of scavengers in the area had no formal education. Mishelia (2015) found out that few students engaged in the activity of scavenging after school hours. Wee (2012) carried out a study on socio-economic characteristics of scavengers in Malaysia using questionnaire to collect data. The study used descriptive statistics to analyse data. The result showed that most scavengers in the area attended only secondary school. Magaji and Dakyes (2011) did an assessment on the socio-economic impact of waste scavenging as means of poverty alleviation in Gwagwalada, Abuja. The result indicated that 81.3% of respondents attended either Islamiya or conventional primary schools only. The study conducted by Jay *et al* (2014) revealed that 62.67% of respondents were in elementary school. Based on Philippines' Educational System, educational system are categorised into number of years, that is, nursery (4-6), elementary (7-12), secondary (12-16) and collage 17 and above. The study conducted by Asibor and Edjere (2017) indicated that 42% of the respondents have been to primary school. He concluded that most of the scavengers residing around the dumpsites had only primary education. Mbeng (2013) conducted a study on informal waste recovery and recycling in Douala, Cameroon using both quantitative and qualitative methods of data collection. Descriptive statistics was used to analyse data collected. The result revealed that most scavengers have low or no academic background and without skilled manpower. According to Kingsley (2012), 44% of the respondents in Delta State had secondary school certificates.

The family size of an individual can influence his level of education as well as available jobs at his disposal since scavenging activities seems to provide immediate source of livelihood. Members from larger families with low income may tend to venture into the business of scavenging. Jay *et al.* (2014) conducted a study on socio-demographic profile of scavengers in Philippines. Questionnaire and survey research methodology were used to collect data. Descriptive statistic method of data analysis

was used to analyse data and the result revealed that each household had average members of 7 with a maximum of 15 and a minimum of 1. All members of the households participated in the business of scavenging. Sachchidananda and Sinha (2001) studied the socio-economic profile of scavengers in India using purposive method of sampling to select respondents. The study also highlighted the living and working conditions of scavengers in the area using descriptive statistics to analyse data. Result indicated that 76% of respondents who live in urban centres had more than 8 members in a family while 51% of respondents who reside in the rural areas had about 6 - 8 members in a family. Akhta *et-al.* (2016) conducted a field survey of 150 scavengers in Karachi City to assess the working conditions and organisation of production pertaining to different aspects of child labour. Using descriptive statistics to analyse data, the result revealed that an average respondent had a family size of about 4-19. Alam *et-al.* (2011) studied the socio-economic conditions of scavenger children in Peshawar, Pakistan. A sample size of 80 persons of the total population in the study area was purposively selected. The study made use of descriptive statistics to analyse data and the result indicated that 66% of respondents had a family size of 10 - 20 members.

In terms of Scavenging Experience, it is obvious that the length of time put in a job has effect on the level of experience on that particular job. Individual who spend more years on a particular job tends to have more experience and satisfaction on the job. The study conducted by Magaji and Dakyes (2011) revealed that 87.7% of respondents have been in the business for five years and below. Moreover, the findings in Asibor and Edjere (2017) posit that 37% of the respondents have been in the business of scavenging for about 5-10 years working all year round. Nyamai (2016) did an assessment on the effects of human scavenging on livelihood and welfare of low-income earners at Dandora Dump-site in Nairobi, Kenya. The study used questionnaires and oral interviews to collect data. Tabulations, pie charts and bar graphs were used to analyse data and the findings indicated that 72% of respondents began scavenging in the years between 2008 and 2012. The study conducted by Sekyere (2014) investigated how long respondents have been in the business, the result revealed that 59% of the respondents had been in the business for more than 10 years.

On the Hours Worked, the more hours put in a particular job is expected to influence the level of income of an individual. The findings in Sekyere (2014) revealed that an average scavenger in Kumasi, Ghana reported spending 5.5 hours each day going through the deposits of refuse for their stocks. According to Jay, *et al* (2014) most of the scavengers in Philippines worked 7 days per week. Muktar (2011) conducted a study on the economics of waste scavenging in Kano State using primary source of data through oral interview with scavengers. The study also employed research survey among scavengers to find out the hours they spend and the income they earn from scavenging. Three types of areas were selected; residential area, commercial area and dumpsites. The result indicated that 53% of the respondents worked for 6-12 hours per day. It was observed that an average scavenger worked between the hours of 8am to 6pm, which is 10 hours in a day. The result on correlation indicated that there was no correlation between hours worked and earnings, negligible correlation between age and earnings while a strong relationship exited between area of operations and earnings. Furedy (1990) posits that refuse collectors in Bangkok

spend 40% of their working time recovering recyclable materials thereby doubling their wages

On the Daily Income, the findings of Nyamai (2016) revealed that the daily income of a scavenger in Dandaro dumpsite was about Ksh 150-200 equivalent to a day wage in the industrial area. The study conducted by Muktar (2011) indicated that average daily income of a scavenger in the area is ₦400. Jay,*et al* (2014) conducted a study on socio-demographic profile of scavenging in Philippines. Questionnaire and survey research methodology was used to collect data. Descriptive statistic as method of data analysis was used to analyse data and the result revealed that scavengers were informal settlers who often, are not provided for by the government with basic services and they rely on scavenging as their major source of income and an average weekly income of 700 PHP (RM50) (USD 13.16) earned by the scavengers.

Methodology

Maiduguri urban is the capital of Maiduguri Metropolitan Council (MMC). It became the capital of North-East in 1976, located in the North-Eastern part of Nigeria. Maiduguri lies on latitude 11.85^{o}north, longitude 13.16^{o} east and about 300 meters elevation above the sea level, bounded by Jere LGA in the north, Konduga LGA in the west, south and south-west, Mafa LGA in the North West. (Figure 3.1) It is covered with an area of about 543km^{2}, (Haruna 2010, in Mayomi and Mohammed 2014).The city was estimated to have a population of about 540,016 (census 2006) and projected that by 2016 and 2019 estimated population will be 758,700 and 1,181,382 respectively.

Maiduguri is occupied by many ethnic groups, though the Kanuri ethnic group constitutes the majority, other ethnic groups include; Shuwa-Arab, Bura, Babur, Marghi, Fulani and Hausa. There is a considerable population of other tribes from all over the country who do business in the region as well as civil service. The people engage in small-scale industries ranging from the production of handcrafts such as pottery, hide and skin, blacksmithing and shoe making. Maiduguri Metropolitan Council consists of sixteen wards namely; Bullabulin, Hausari, Zajeri, Gwange I, Gwange II, Gwange III, Shehuri North, Shehuri South, Fezzan, Limanti, Bolori I, Bolori II, Gamburu, Maisandari, Mafuni and Lamisula. The temperature in Maiduguri is relatively high throughout the year. The hotest months are March and April with temperatures ranging between 39.4^{0}C and 40.1^{0} C. Minimum temperatures are recorded from November to January ranging between 30.1^{0} C and 31^{0}C. The city receives rainfall mostly from June to September. Due to the nature of the soil, short duration crops such as millet, maize, rice, wheat, beans, and guinea corn are mostly cultivated.

Maiduguri is also blessed with health institutions such as University of Maiduguri Teaching Hospital (UMTH), State owned health institutions and many private owned hospitals, where people from other neighbouring states, towns and villages come to access health care. As a result, waste is being generated in large quantities. In addition, the effects of insurgency in the state is the influx of internally displaced persons into Maiduguri, this also suggest increase in waste generation. The waste materials from destroyed houses and vehicles also increased waste generation thereby making the area a good market for scavenging. It enjoys local and international

commercial activities. The effect of such increased commercial activities, increases human traffic, suggesting high generation of wastes. With the ever-increasing tonnage of waste due to expansion of the urban centre, scavenging as an aspect in recycling process can provide income and employment for the youth in Maiduguri metropolitan council.



Figure 1:The Map of Maiduguri Metroplitan Council
Source: *Department of Geography, University of Maiduguri, 2019*

To get the sample size, the study made use of an online calculator used by Westland (2010) because the population size is unknown. Using 0.2 anticipated effect size, 0.8 desired statistical power level, 21 number of predictors, that is the number of variables contained in the questionnaire and at 0.05 probability level. The recommended minimum sample size is given as 124.Cognisant of the fact that Maiduguri Metropolitan Council is made up of fifteen (15) wards. Firstly, the study used simple random sampling (lottery) to select ten (10). This was done to give all the wards equal chances of being selected. To facilitate the distribution of 320 questionnaires, the questionnaire was divided by the number of selected wards (10) that is 32. Secondly, the study made use of convenience sampling technique to administer the questionnaire in each ward because the potential respondents were found at various collection points in the morning and evening hours. In the process of administering the questionnaire, no questionnaire was administered in Shehuri ward. This was because there were no collection points in the ward. Furthermore, due to the same reason only 8 questionnaires were administered in Fezzan Ward. The remaining questionnaires were shared to the 8 wards in addition to the initial administered questionnaire. 11 questionnaires had incomplete information, while 8 potential respondents could not attend to us due to the fact that they were busy at the time of data collection making a total of 19 questionnaires unreported. 301 questionnaires were used for the analysis.

Results and Discussion

The Socio-economic Characteristics of Scavengers in MMC

The importance of socio-economic characteristics of scavengers cannot be over emphasised, because one's involvement and continuity in the business of scavenging can be determined by his or her socio-economic status. Some of the socio-economic variables considered are: age, gender, educational level, marital status, family size, scavenging experience, hours worked and daily income.

Table 4.1: Socio-Economic Characteristics of scavengers in MMC

Socio-economic variables	Frequency	Percentages	Mean
Gender:			
Male	301	100	
Female	0		
Age:			23.65
Minimum 7			
Maximum 68			
Educational Level:			
Never Been to formal School			
Primary School	100	33.1	
Secondary School	97	32.1	1.05
NCE/Diploma	93	30.8	
HND/University	10	3.3	
Marital Status:	1	0.3	
Single	215	71	
Married	86	29	
Family Size:			11.59
Minimum 3			
Maximum 41			
Scavenging Experience:			
Minimum 1			9.1
Maximum 40			
Hours Worked			7.51
Minimum 2	186	61.6	
Maximum 12			
Daily Income			₦1788

Source: Field Survey, 2019

Gender

Gender is an important variable in scavenging activities, because it requires long distant movement and the weight of some of the recyclable materials scavenged can be very heavy. The result on gender shows that male (n=301) constitute 100% of scavengers in the area. This could not be unconnected to the facts that scavenging activity requires more energy to move from one place to the other and women, who are considered as weaker vessels, may not be able to do that effectively. In addition to that, in this part of the country, women culturally are not predisposed to certain line of activities of which scavenging is one of them. This result agrees with the result of Ikechukwu, (2015) which revealed that 100% of scavengers in Port Harcourt, River State were males. Lastly, the result corroborates with the study conducted by Magaji and Dakyes in Gwagwalada, which revealed that 100% of scavengers were males.

Age

Age is an important variable in scavenging business, because it requires strength to move from house to house buying recyclable materials. The earlier a scavenger ventures into the business of scavenging, the more years he will spend and more experience he will gain. In the table 4.1, the statistical mean for age is approximately 24. The mean of 24 years suggest that most scavengers in the area were youth. This is because scavenging is an activity that requires more energy as a result; old people could not do the business effectively. This suggests that as scavengers advance in age, their experiences in scavenging and income increases and they consequently become middlemen overtime. To confirm this, a correlation test was done between age and experience and between experience and income. The result (0.720) revealed that correlation is significant at 0.01 level (2-tailed) between age and experience of scavengers in the area. The finding of this study supports the work of Ikechukwu (2015), which revealed that majority of scavengers were at the peak of their formal productive years. It also agrees with the study of Mshelia, (2015) which indicated that 54% of scavengers were of the age bracket of 20-29 years and he concluded that most of the scavengers in the area were youth. The study also agrees with the study conducted by Asibor and Edjere (2017), where he concluded that the reason people in their productive years engaged in the business is because it is labour intensive and the elderly may not be able to withstand the stress. In addition, the study of Areo and Ogungbile (2014) revealed that 75% of scavengers in the southern part of Nigeria were within the ages of 23-32 years old.

Educational Level

Educational level is considered because the level of education determines scavenging activities. The table 4.1 shows a mean value on educational level to be 1.05. Meaning an average respondent in the study area attended primary school. Even though some of the respondents did not complete primary school, at least they attempted and dropped out at primary level because they did not have the means of furthering their education. This cannot be unconnected to the fact that scavenging provides immediate mean of livelihood as a result, it makes it attractive even to first school leavers and primary dropouts. It can be inferred that an average scavenger in the area attended primary school. This suggests that the level of education of scavengers could have impact on their decision to venture into the business of scavenging. This is because venturing into the business of scavenging does not require any educational qualification.

This result aligns with the result in Magaji and Dakyes (2011) who assessed the socio-economic impact of waste scavenging as means of poverty alleviation in Gwagwalada, Abuja. The result indicated that 81.3% of respondents attended either Islamiya or conventional primary schools only. In addition, the study conducted by Jay *et al* (2014) revealed that 62.67% of respondents were in elementary school. Asibor and Edjere, (2017) assessed the activities of scavengers in Warri, Delta state. The result indicated that 42% of the respondents have been to primary school. He concluded that most of the scavengers residing around the dumpsites had only primary education. More so, the result in Samuel (2017) indicated that most scavengers in Lagos have low levels of western education and have no training on other trade for survival. It also agrees with the findings of Sekyere (2014) which revealed that none of the scavengers

in Kumasi were sufficiently literate to gain quality employment in the formal sector. To test whether educational level correlates with marital status, a correlation test was done and the result (-0.075) revealed that there was negative and insignificant correlation between educational level and marital status of scavengers in the area. This means that even a scavenger who attended only primary school can get married and have a large family.

Marital Status

It is obvious from table 4.1 that about 71% (n=215) of respondents were single. It can be inferred therefore, that most of the scavengers in the area were either single or divorced. This suggests that marital status is also an important variable in scavenging activities. The tendency for scavengers' expenditure to increase when married is high. This finding aligns with the finding of Samuel (2017) who found out that majority of scavengers in Lagos were unmarried youth. In addition, the findings of Areo and Ogungbile, (2014) revealed that 80% of scavengers in southwestern Nigeria were unmarried. To test whether a significant correlation existed between marital status of scavengers and hours worked. The result (0.178) showed weak but positive and significant relationship between marital status and hours worked at 0.01 level (2-tailed). Meaning scavenger that are still singles tend to spend more hours scavenging.

Family Size

Family size is also an important variable to be considered in scavenging business because the larger the family size of low-income earners, the more likely that their children and wards will be enlisted into scavenging activities. Table 4.1 above, revealed the mean value of family size to be 12. It can be concluded that an average scavengers' family size was 12. This could be because of the African extended family system and scavenging is a readily available job that can provide livelihood. This implies that an increase in the family size of a scavenger can necessitate increase in daily time spend on the job, especially in a situation where many of the other household members did not generate any income but only depend on the family head in the case of an adult scavenger. However, in the case of a child scavenger, it may be said that when a family size is large and the income of the family head is low, there is a tendency for the child to venture into the business of scavenging. This is to say the larger the family size with small income, the more the children will venture into the business. The probability that scavengers' expenditure would increase as family size increases is high.

Scavenging Experience

Experience is gained because of employment. That is to say, the more the number of years spent in scavenging, the more the experience gained. Table 4.1 above revealed the mean value of 9. This means that an average scavenger in the area have been in the business for 9 years. It can be generalised that an average scavenger in the area had good experience in scavenging business and it provided employment for him all along. According to ILO (1992), all persons within the labour force with employment experience over a long reference period (a year) are considered employed. This implies that long stay in scavenging business has provided livelihood and employment to the scavengers in the area. This result agrees with the study conducted by Asibor and Edjere (2017) in Warri Metropolis, Delta State, Nigeria, which indicated

that majority of the scavengers, had been in the business of scavenging between 5-10 years. It also agrees with the findings in Sekyere (2014), which revealed that most scavengers in Kumasi, Ghana have been in the business of scavenging for about 10 years.

Hours Worked

The more hours spent, the more the experience gained and the higher the income. The mean value for hours worked indicated 7.51. This means that an average scavenger in the area spent approximately 8 hours scavenging. This is because scavengers trek from one area to another on foot using carts popularly called wheel barrow and bags to carry scavenged materials. At times, they are found resting under trees just to refresh themselves and continue with the scavenging. Residential scavengers on the other hand, only come to the collection point in the morning hours as early as 7am to measure materials that mobile scavengers brought the previous day and at late hours. This result agrees with the result in Muktar (2011), which indicated that 53% of the respondents worked for 6-12 hours per day. It was observed that an average scavenger worked between the hours of 8am to 6pm that is 10 hours in a day. Correlation between hours worked and daily income was positive (0.214) and significant at 0.01 level (2-tailed). Meaning more hours tend to yield more income.

Daily Income

The average daily income of a scavenger in MMC is ₦1788. This is above the minimum wage of a state government staff in Borno State. This means that this amount enabled scavengers to take care of their daily needs. The result and correlation indicates that there is positive and significant correlation (0.293) between age and daily income of scavengers in the area. This result corroborate with the result in Muktar, (2011).The findings in Olugbenga (2006) revealed that a cart pusher in Lagos made an average income of ₦2,600 per day. Moreover, the result in Mbeng (2013) showed that the average daily income of scavengers in Douala was estimated to be 1000 FCFA. Finally, in Sekyere (2014) it was revealed that on a good day, a scavenger could earn an average income of about $4.50.

Scavengers' Collection Points in MMC





Conclusion

The study examined the socio-economic factors that influences scavenging in Maiduguri Metropolitan Council (MMC).100% of Scavengers within the sampled area were males. An average age of a scavenger in the area was 24 years. The average scavenger in the study area attended primary school. Average family size of a scavenger in the area was 12. An average scavenger in the area spent about 9 years scavenging. Average number of hours spent scavenging by scavengers in the area is approximately 8 hours. Lastly, average daily income of a scavenger in the area was ₦1788.

The theoretical framework has also received a burst in that few scavengers in the area scavenged for about 12 hours. The issue is that can the daily income of ₦1788 be commensurate to the number of hours spent. The study provided empirical support to the fact that some socio economic variables influence others. The question to whether correlations between socio-economic variables of scavengers in MMC exist was addressed. This study represents one of the few empirical analyses on the issue that there is correlation between the socio-economic variables of scavengers. It can be concluded that there was a positive correlation between age and experience of scavengers in the area. Hours worked and daily income was also positive and significant this therefore encouraged scavengers to spend more hours in scavenging which led to more income.

Recommendations

In line with the findings of the study, the following recommendations are therefore made:

i. Since most of the scavengers in the area where youth, the study recommends policies that will discourage children from venturing into the business;
ii. The study recommends that youth from the age of twenty-four years are highly encouraged to participate in scavenging activities, because this is their prime age with much energy with which they can scavenge more materials.
iii. Result showed that average working period was 8 hours and that hours worked tended to influence income, scavengers should spend at least 8 hours a day to earn more income
iv. Since people who have never attended any formal education were involved in scavenging activities, government's policies should encourage them by giving them tax holiday and providing them with wheel barrow and gloves to burst their businesses.

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Appendixes

Correlations

		AGS	SES
AGS	Pearson Correlation	1	.720**
	Sig. (2-tailed)		.000
	N	301	301
SES	Pearson Correlation	.720**	1
	Sig. (2-tailed)	.000	
	N	301	301

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		ELS	MAR
ELS	Pearson Correlation	1	-.075
	Sig. (2-tailed)		.197
	N	301	300
MAR	Pearson Correlation	-.075	1
	Sig. (2-tailed)	.197	
	N	300	300

Correlations

		MAR	HWS
MAR	Pearson Correlation	1	.178**
	Sig. (2-tailed)		.002
	N	300	300
HWS	Pearson Correlation	.178**	1
	Sig. (2-tailed)	.002	
	N	300	301

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		HWS	DIS
HWS	Pearson Correlation	1	.214**
	Sig. (2-tailed)		.000
	N	301	300
DIS	Pearson Correlation	.214**	1
	Sig. (2-tailed)	.000	
	N	300	300

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		AGS	DIS
AGS	Pearson Correlation	1	.293**
	Sig. (2-tailed)		.000
	N	301	300
DIS	Pearson Correlation	.293**	1
	Sig. (2-tailed)	.000	
	N	300	300

**. Correlation is significant at the 0.01 level (2-tailed).