

SAHEL ANALYST
Journal of Management Sciences (SAJMS)

Volume 19 No. 1 March 2021

A Publication of Faculty of Management Sciences, University of Maiduguri, Borno State, Nigeria

CONTACT US
Faculty of Management Sciences, University of Maiduguri
Bama Road, Maiduguri
PMB 1069, Maiduguri, Borno State, Nigeria

Contact No:
Business Managers: **+2348067209220** or +2348032689693
Contact Email: **sajmsfmsunimaid@gmail.com**
Website: **http://www. saheljournalsonline.org.ng**

Business Managers:
Dr Joel O. Silas - Business Manager I (+2348032689693)

Dr Mustapha Momoh - Business Manager II **(+2348067209220**)

Printed by Skisoft Publishing Co. Kaduna, Nigeria.
All rights reserved. Reproduction in any form is prohibited.
Copyrights @ SAJMS, 2021 (ISSN1117 - 4668)

EDITORIAL BOARD

Editor-in-Chief – Prof M. D. Madawaki
Dean, Faculty of Management Sciences, University of Maiduguri

Managing Editor – Dr Akinniyi K. Opeyemi
Sub-Dean, Faculty of Management Sciences, University of Maiduguri

Editors

Prof Haruna D. Dlakwa – Dept of Public Administration, University of Maiduguri
Prof Abdullahi H. Godowoli – ”
Prof Ayuba A. Aminu – Dept of Business Administration, University of Maiduguri
Prof S. K. Msheliza – Departmen
+t of Finance, University of Maiduguri
Prof Dauda Abdulsalam – Department of Business Administration, Usumanu Danfodiyo University, Sokoto, Nigeria
Prof M. M. Maishanu – ”
Prof Abdullahi Sani – ”
Prof Dahiru Balami – Department of Economics, University of Maiduguri
Prof W. C. Ndubusi – Michael Okpara University of Agriculture, Umudike, Nigeria
Prof Dauda Abubakar – University of Michigan, USA
Prof Hauwa A. Biu – Dean, Faculty of Education, University of Maiduguri
Prof Emmanuel Dawha – Department of Library Science, University of Maiduguri
Prof A. M. Gimba – Department of English, University of Maiduguri
Prof Paul Mbaya – Department of Public Administration, University of Maiduguri
Prof M. I. Bazza – Department of Business Administration, University of Maiduguri
Prof A.G.Alooma–Department of Business Administration, University of Maiduguri
Prof R. O. Folorunsho – Department of Marketing, University of Maiduguri
Prof R. H. Wazis – Department of Marketing, University of Maiduguri
Prof S.Y. Ibrahim – Dept of Public Administration, University of Maiduguri
Dr (Mrs) Razinat T. Mohammed – Department of English, University of Maiduguri
Dr Mustapha Momoh – Department of Business Admin., University of Maiduguri
Dr Usman D. Umaru – Department of Public Administration, University of Maiduguri

Editorial Advisers

Prof R. B. Badejo – Department of Language and Linguistic, University of Maiduguri
Prof Joseph A. Ejere – Department of Geography, University of Maiduguri
Prof M. M. Daura – Department of Geography, University of Maiduguri
Prof Aminu S. Diyo – Federal Commissioner for Kogi/Kwara, Federal Service Commission, Abuja, Nigeria (http://www.fedcivilservice.gov.ng/)
Prof A. S. Mikailu – Department of Business Administration, Usumanu Danfodiyo University, Sokoto, Nigeria
Prof L. Osuagwu – Department of Management, American University of Nigeria (AUN), Yola, Nigeria
Prof Yusuf M. Yusuf – Dean, Faculty of Law, University of Maiduguri

TABLE OF CONTENTS

1. Modeling the Socioeconomic Determinants of Scavenging Business in Maiduguri Metropolitan Council, Borno State, Nigeria 1 – 9
Kindness Siben, Shehu Usman Adam & Alhaji Bukar Mustapha

2. Effect of Resistance to Change Management on Employees Performance in Selected Textile Manufacturing Firms, Lagos State, Nigeria 10 – 26
Amosa, Jimoh Rafiu; Omolabi, Issa & Suleiman, Ahmed Aremu

3. Entrepreneurial Network and the Performance of Small and Medium Enterprises: Influence of External Environmental Characteristics 27 – 45
Buba Musa Pulka, Tawa Suleiman Tijjani & Muhammad Sani Gawuna

4. Influence of Learning Capability and Innovation Strategy on the Performance of Nigerian Small and Medium Entrepreneurs in Food and Beverage Manufacturing Sector 46 – 63
Yakubu Salisu

5. Aggregate Employment Generation Stride by Small and Medium Enterprises (SMEs) in Maiduguri, Borno State 64 – 79
Iliya Hudson Usmana & Ruth Haruna Wasis

6. Utilising Service Quality Dimensions to Achieve Customer Satisfaction in the Banking Industry 80 – 89
Abdulfatah, Odua & Bitrus Fulani Kwajaffa

7. Consumers Perception and the Willingness to Patronise Mobile Marketing Contents among the Generation Zs 90 – 105
Kingsley Chibuike Ugbechie; Henry Odigwe Olannye & Hillary O. Odor

8. Effects of Coronavirus Pandemic on International Financial Reporting Standards (IFRS) Based Financial Statements 106 – 116
Ebiaghan Orits Frank

9. Perception of the Effect of Treasury Single Account on Payment of Claims: A study of Employees in University of Maiduguri 117 – 125
Daniel Eli Anthony, Kayadi Biradawa & Bulus Jonah Saidu

10. Promoting Investment in Community-Scale Renewable Energy in Sub-Saharan Africa: Lessons from Denmark, Germany and UK 126 – 135
Ahmed Ibrahim Butu & Hauwa Auwal Baffa

MODELING THE SOCIOECONOMIC DETERMINANTS OF SCAVENGING BUSINESS IN MAIDUGURI METROPOLITAN COUNCIL, BORNO STATE, NIGERIA

Kindness Siben[1]

Shehu Usman Adam[1]

Alhaji Bukar Mustapha[1]

Abstract

Scavenging from dumpsites and dustbins allows resource recovery of valuables from discarded waste materials that could be reused or recycled. This study models the socio-economic determinants of scavenging business in Maiduguri Metropolitan Council (MMC), Borno state, Nigeria. The Primary data was obtained through the administration of questionnaire to 320 randomly sampled scavengers in the study area. Subsequently, regression analysis based on ordinary least square estimators was used to analyse the data collected. The results showed that age, educational level, hours worked and scavenging experience were positive and significantly determinants of scavenging business activities in MMC. The coefficients of determinant revealed that the estimated model captured about 59% of the variation in scavenging business. Since age was found to influence scavenging activities, among others, in MMC, the study recommends the implementation of policies discouraging under aged scavenging.

Keywords: Scavengers, Scavenging, Recyclable wastes, Collection points

Introduction

Youth in developing countries are often faced with issues regarding employment and this has resulted into poverty, which is one of the reasons why some illegally migrate to other countries in search for greener pastures. Meanwhile, entrepreneurship literature has shown that even youths who want to carry out businesses lack adequate funds to invest (Abeh, 2017).

Waste scavenging provides an alternative to this issue especially in developing countries of the world, Nigeria inclusive. This is because youths' involvement in the activity of scavenging provides them employment opportunities without much seed capital. Scavenging is a resource recovery process for valuables that entails the mechanical act of pick reusable and recyclable items from discarded waste materials at dumpsites and dustbins to be sold to earn a living. At times, scavengers also act as intermediaries by buying the materials and resell to make profit (Aida *et al.*, 2011).

The concept of scavenging means moving recyclable waste from an exhaustible state to a valuable and usable state. This process of transforming these recyclable materials requires labour as a factor of production. Since human being will continue to generate waste materials from their day-to-day activities, recycling

[1] **Department of Economics, Faculty of Social Sciences, University of Maiduguri, Borno State, Nigeria.**

business could evidently be said to be both profitable and sustainable. In 2012, the world's cities generated about 1.3 billion tones of solid waste per annum amounting to a footprint of 1.2 kilograms per person per day, (Sridhar & Hammed, 2014). As income and spending power of the people continue to rise, more goods will be consumed leading to more waste generation. Rapid population growth will also result to increase in waste generation thereby expanding the business of scavenging. For example, in Nigeria waste generation is on the increase because of the rapid increase in population. According to Adigun (2018), Nigeria's economy generates about 65 million tons of waste annually and at the rate of 0.43kg/per head per day. As a result, scavenging business is gradually becoming an attractive market in Nigeria, yet government at all levels appeared not to have paid enough attention to scavenging activities, evidenced by the relatively rare policy formulation in waste management subsector despite their potential capability of employing the teeming youth roaming the streets.

In the peculiar case of Maiduguri, the city has continued to generate more recyclable waste occasioned by the influx of Internally Displaced Persons (IDPs) from other Local Government areas into the metropolis due to Boko Haram's attacks in the state. This has not only contributed to increase in population but consequently waste generation (Wunubo et al., 2017). All of these make MMC a resourceful location for scavenging activities and a viable market for scavenged materials, in conformity to the opinions of Medina (1997) and Mbeng (2013) who stated that scavenging provides alternative livelihood to poor individuals. Accordingly, a few scavenging studies have empirically investigated the socio-economic factors that affect scavenging business. These include, among others, Muktar (2011) in Kano, Areo and Ogungbile (2014) in South Western Nigeria, Magaji and Dakyes (2011) in Gwagwalada, Abuja and Nyamai (2016) in Kenya, Wee (2012) in Malaysia and **S**teuer *et al* (2017) in Beijing. Thus, there exist dearth of literature on this subject matter in the context of Maiduguri, particularly MMC. While results from studies conducted elsewhere could help in policy formulation, the disparities in socio-economic characteristics in MMC is not going to be similar to elsewhere, occasioned by insurgency and its consequent humanitarian crises. As such, this study models the socio-economic determinants of scavenging business in the face of insurgency in MMC.

Areo and Ogungbile (2014) estimated the socio-economic factors that influence youth's involvement in metal scavenging business in South Western Nigeria. The study found that the level of youth's involvement in scrap metal scavenging business had positive and significant relationship with age, level of income and dependency on sponsors. The study revealed a negative and significant correlation between educational level and level of youth's involvement in the business. The study concluded that metal scavenging is key to getting cheaper raw materials for steel industries while the business remains a veritable source of employment for Nigerian and other African youths. Meanwhile, Muktar (2011) examined the economics of waste scavenging in Kano state. The study conducted correlation analysis to examine the factors associated with the income of scavengers in Kano State. Descriptive and inferential statistics were employed to analyse the collected data. The result showed that there was no correlation between hours worked and earning of scavengers. Age of scavengers and earnings were also tested and a negligible correlation existed between the variables. However, a strong relationship existed between areas of operation and earnings of scavengers, implying the differences in the lucrativeness of the business

across different areas. The study concluded that scavenging activities create jobs for the unemployed youth who dominated the profession.

Nyamai (2016) assessed the effects of human scavenging on livelihood and welfare of low-income earners at dandora dumpsite in Nairobi, Kenya. The study showed that 80% of the respondents agreed that scavenging created self-employment. The study further noted that the sale of solid waste materials to the recycling industries was sustainable and able to withstand the challenge of livelihood and welfare. Magaji and Dakyes (2011) did an assessment on the socio-economic impact of waste scavenging as a means of poverty alleviation in Gwagwalada, Abuja. The study found that scavenging activities provided livelihood to scavengers and can reduced poverty among the youth. Also, **S**teuer *et al* (2017) conducted a study on informal stakeholders involved in waste scavenging in Beijing through observation and survey interviews and revealed about three stakeholders in informal waste recycling which are Waste Pickers (WPs), Waste Merchants (WMs) and the Middle Men (MM). The study also revealed that the number of informal stakeholders in urban Beijing has continued to increase over the years but the study did not assess factors determining their engagement in scavenging.

Wee (2012) studied the socio-economic characteristics of scavengers in Malaysia discovered that most of the scavengers spent the productive period of their lives at the landfills while others work there temporarily when unable to find employment in the labour market. Holt and Littlewood (2017) also examined waste scavengers' livelihoods amongst the poor in Kenya using fieldwork from 2011-2013 focusing on two Kenyan social enterprises that support entrepreneurs in generating income through waste materials. The study made use of interview to collect data from three different entrepreneurs' groupings. The result showed that waste materials have significant potential for livelihood creation and income generation. Aida *et al* (2011) assessed the socio-economic identities of scavengers in Malaysian landfills. The result showed that 71% of scavengers were foreigners, mostly Indonesians, 85% of them chose scavenging because they lacked qualification for other job opportunities.

Overall, studies examining factors that determine scavenging entrepreneurship are scarce. Many of the existing studies on solid waste scavengers focus on understanding the type of waste scavenged, the identities of scavengers, their characteristics as well as the different groups of entrepreneurs in the supply chain. This study furthers existing literature by focusing on the assessment of factors determining scavengers' involvement in scavenging business in Maiduguri. The remainder of the study is structured as follows. Section 2 details the study's methodology including data collection, sampling technique, sample size and model specification for the estimated equation. Section 3 contains result and discussions while section 4 details conclusions from the study.

Methods

Data Collection, Sample and Sampling Technique

The study collected data through the administration of 320 questionnaires at major waste collection centres in MMC. The questionnaire was structured consisting of closed-ended questions, including socio-economic characteristics of scavengers as well as adapted scavenging business concerns questions from Areo and Ogungbile

(2014). Data collection was targeted at scavengers who were guided by trained interviewers since many of them were not literate. The study made use of Likert scale items with response anchors assessing their levels of agreement or disagreement to each statement as well as dichotomous choice items.

Maiduguri Metropolitan Council is clustered into fifteen wards (as shown in Figure 1) out of which ten wards were selected for this study through simple random sampling, using Microsoft Excel random number generator. Bullabulin, Hausari, Zajeri, Gwange I, Gwange II, Gwange III, Shehuri North, Limanti, Bolori I, Gamburu.



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

Each of these wards had an average of three collection points. One collection point from each of the selected wards was selected randomly and 32 questionnaires were administered at each. A total of 320 questionnaires were distributed. The questionnaires were distributed during morning and evening hours because the potential respondents were found at various collection points mostly in the morning and evening hours. This was adopted because there was no available list from which to draw the respondents. In the process of administering the questionnaire, 11 questionnaires had incomplete information while 8 were not returned, making a total of 19 questionnaires unreported. 301 questionnaires were used for analysis.

First step of preliminary field observation and informal interaction with various stakeholders was done to identify the locations where recyclable wastes were exchanged. It was at this point that the researchers discovered that there were other scavengers who stay at the collection point (as shown in Figure 2) to buy the materials and sell them in bulk to middle men.



Figure 2: A Collection point in Gwange II
Source: Field survey

Data collection was done in October 2019. Since the population size was unknown, the study relied on the suggestion by Westland (2012) in deciding the minimum sample size that will avail the conduct of multivariate analysis. To arrive at the sample size, the study made use of Soper (2019) online calculator, which requires assumptions about the anticipated effect size, desired statistical level and the number of specified independent variables in an equation. Accordingly, the selection of a moderate anticipated effect size of 0.1, desired statistical power level of 0.9 and a stringent type I error of 1% for seven (7) predictors (independent variables) in the model yielded as minimum sample of 252.

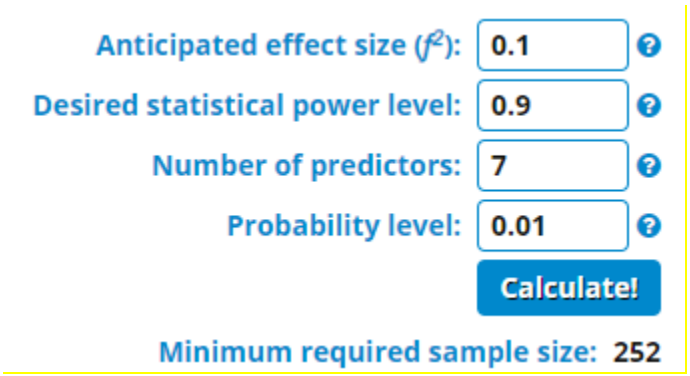


Figure 3: A-priori sample size calculation for multiple regressions.
Source: https://www.danielsoper.com/statcalc/calculator.aspx?id=1

Model specification

The model specified for analysis in this study was adopted from Phillip and Aruppillai (2014). The original model, which was bivariate, was extended to include covariates that constitute the socio-economic characteristics of scavengers in Nigeria as contained in Areo and Ogungbile (2014).

The specified model is expressed as:

$EMP = \beta_0 + \beta_1 GEN + \beta_2 AGS + \beta_3 ELS + \beta_4 FSS + \beta_5 SES + \beta_6 HWS + \beta_7 DIS + E.$

Where: EMP = Scavenging activities (multivariate)
GEN = Gender (Categorical)
AGS= Age (Numeric)
ELS= Educational Level (Categorical)
FSS= Family Size (Numeric)
SES= Scavenging Experience (Years)
HWS= Hours Worked (Per Day)
DIS= Daily Income (₦)
β_0= constant
β_1 to b_7 = coefficients
E= standard error

Results and Discussion

Different functional forms were explored and finally, linear equation was selected based on model diagnostics such as coefficient of determination (R^2), signs of the coefficients, significance of the coefficients, standard error of estimate and the a priori expectations. The result obtained is shown in Table 1.

Table 1: The Socio-economic Factors Affecting Scavenging Activities

Variable	Coefficient	Standard Error	t-value	P-value	Remark
GEN	0.001029	0.001993	0.516552	0.6059	NS
AGS	1.511878	0.055299	2733.999	0.0000*	S
ELS	1.511541	0.046714	3235.760	0.0000*	S
FSS	0.026045	0.023042	1.130358	0.2592	NS
SES	0.069578	0.031542	2.205877	0.0282**	S
HWS	0.226651	0.111249	2.037327	0.0425**	S
DIS	0.000109	6.99E-05	1.560086	0.1198	NS
R^2	0.599404				
Adj. R^2	0.496900				

Source: Field Survey, 2019

*, ** denote significance levels at 1% and 5%, respectively.

The age coefficient was positive and significant at 1% level in line with the *a priori* expectation. This means age is one of the socio-economic factors affecting scavenging activities. This implies that as age of scavengers increase, scavenging activities also increases. The possible reason is that scavenging activities provides immediate livelihood to the youth especially the unemployed. Another possible reason is that the earlier a scavenger ventures into the business of scavenging, there is tendency for him to gain more experience. Scavenging activities is tedious which requires movement from one place to another which old people cannot endure. This can explain why some of the scavengers who began as mobile scavengers over time became intermediaries and subsequently waste dealers. This result conforms to the result by Areo and Ogunbile (2014) which revealed a positive relationship between age and youth's involvement in metal scavenging.

The coefficient of education was positive and significant at 1% level. This is also in line with the *a priori* expectation. Meaning that the level of education of a scavenger is also a factor that affects scavenging activities. This implies that as level of education increases, scavenging activities will also increase. This may be due to lack of employment. Another reason is that the more educated a person is, the better he does his job. Although most scavengers in the area only attended primary education, the possibility that they will continue scavenging is high. This result does not agree with the result in Areo and Ogungbile (2014) which revealed a negative relationship between educational level and youth's involvement in metal scavenging.

The coefficient of scavenging experience is positive and significant at 1%. This means that the number of years scavengers spend in the business determines perceived employment opportunity in scavenging activities. The coefficient of experience was estimated at 0.06. This implies, a year increase in experience will increase perceived employment opportunity in scavenging activities by 0.06. Meaning the more experienced perceive more opportunities in the business.

The coefficient of the number of hours spent scavenging is also positive and significant at 5%. The coefficient, which was estimated at 0.22, implies else equal, an hour increase in the time spent scavenging increases perceived opportunity in the business by 0.22. This justifies the marginal increase in scavenging business earnings arising from additional our committed to the business. This is logical since hours spent

will influence income generated. However, this does not agree with the study conducted by Muktar (2011) which revealed that there was no correlation between hours worked and earnings.

Conclusion and Recommendation

This study uniquely extends existing literature on scavenging studies. Most studies concentrated on identifying and describing the scavengers at dumpsites, landfills and streets without much attention on the scavengers at the collection points even though they buy more recyclable waste daily and earned more income. Specifically, the socio-economic factors that affect scavenging employment in the area were examined. The study found a significant effect of age, educational level, scavenging experience and hours worked by scavengers on scavenging activities in the area. The study provided empirical support to the fact that scavenging provided employment opportunities for youth. This study represents one of the few empirical analyses on the determinants of scavenging business in Maiduguri Metropolitan Council in particular and Borno Sate in general where the issue of unemployment has persisted, scavenging offers a potent alternative to generating employment and income among youth in the area since households and business will not cease to generate waste.

References

Abeh, O. (2017). The Problems and Prospects of Small and Medium Enterprises (SMEs) Growth and Development in Nigeria: A Study of Selected SMEs in Delta State *International Journal of Scientific Research in Education, 10(3):Pp 278-294.*

Adigun, O. (2018) How technology will turn Nigeria's 65m tone waste to wealth. http://sunnewsonline.

Aida, H.Z, Firuza, B.M, Fauziah, S.H (2011). Socio-economic studies of Scavengers in Malaysian Landfills. *International Conference on Population Dynamism of Asia 11-13 July University of Malaya*

Areo, A. B. & Ogungbile, P.O. (2014) Scrap Metal Scavenging: Consumer Market, Consumer Buying Behaviour and the Environment. *Academic Research International. 5(5)*

Holt, D. & Littlewood, D. (2017). Waste Livelihoods Amongst the Poor –Through Lens of Bricolage. *Business Strategy and Environment, No. 26. Pp 253-264. (Wileyonlinelibrary.com)*

Magaji, J.Y & Dakyes, S.P, (2011). Assessment of Socio-Economic Impact of Waste Scavenging as Means of Poverty Alleviation in Gwagwalada, Abuja. *Confluence Journal of Environmental Studies.* Vol. 11

Mbeng, L.O. (2013). Informal Waste Recovery and Recycling: Elevating Poverty, Environmental Pollution and Unemployment in Douala, Cameroon. *Journal of Scientific Research & Reports. 2(1): Pp 474-492.*

Medina, M. (1997). Informal Recycling and Collection of Solid Wastes in Developing Countries: Issues and Opportunities. *The United Nations University/ Institute of Advanced Studies, (UNU/IAS) Working Paper No 24. Pp. 10-13.*

Muktar, M. (2011). The Economics of Waste Scavenging in Kano State. Department of Economics, Bayaro University Kano, Nigeria, mustaphamuktar.blogspot.com

Nyamai, M. (2016). Assessment of the Effects of Human Scavenging on Livelihood and Welfare of Low-income Earners at Dandora Dumpsite in Nairobi, Kenya. A Research Project submitted in partial fulfilment of the degree of Master of Arts in Sociology in the University of Nairobi.

Phillip, P.M.G. & Arupillai, T. (2014). The Effect of Unemployment on Socio-economic Status of the People in Jaffna District, Srilanka. *Journal of management. X(1).*

Sridhar, M.K.C. & Hammed T.B. (2014). Turning waste to wealth in Nigeria: An overview. *J Hum Ecol. 46(2) Pp195-203.*

Steuer, B. Ramusch, R. & Salhofer, S. (2017). Analysis of the Value Chain and Network Structure of Informal Waste Recycling in Beijing, *China Recourses Conservation and Recycling 117. Pp 137-150.*

Wee, T. (2012). Socio-Economic of Scavengers: Study case at Johore State, Malaysia. *Research on Humanities and Social Sciences, 2 (7), 2222-2863 (online).*

Westland, J.C. (2010). Erratum to "lower bounds on sample size in structural equation modelling" (Electron, commerce Res. Appl. *Journal Homepage www.elsevier). Vol.* 9(6), Pp. 476-487.

Wunubo B., Biame C.C. & Bukar M.A. (2017): An assessment of waste management activities of Borno State Environmental Protection Agency (BOSEPA). *Journal of Environment and Waste Management,* 4(1), 173-180.