SCRAP METAL BUSINESS: A VIABLE CHANNEL OF INCOME GENERATION IN KWARA STATE

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Abstract

Scrap metal industry is a lucrative business. The income obtained from the scrap business is sufficient and reliable to provide basic necessities such as food, clothing, shelter etc .This study investigated scrap metal as a viable channel for income generation in Kwara State. The specific objective was to investigate the impact of entrepreneurial practices on the income generation on metal scrap business in some selected Local Government in Kwara State. Primary source of data was used to obtain data for the study. Regression analysis was employed to test the formulated hypothesis while statistical package for Social Sciences (SPSS) version 16 was adopted in the analysis of data. Findings revealed that scrap metal contributed significantly to income generation and job creation in the area of study which invariably has led to economic development. The study also recommended that youth should be creative in their thinking and optimize entrepreneurial competencies. It was suggested that metal scavenging is a viable key to getting cheaper raw materials for steel industries, and that government should encourage the scavengers by formulating enabling laws for formalizing the group and providing them with soft loans to buy and sell the scraps scavenged.

Keywords: Metal Scrap, Income Generation, job Creation, Entrepreneurship

Introduction

Entrepreneurship is viewed as a significant factor contributing to socio-economic growth and development because it creates job opportunities, provides consumer goods and services, and in the broadest sense increases national prosperity and competitiveness (Karimi, Chizari, Biemans & Mulder, 2010). Ogundele (2012) sees entrepreneurship as a process of identifying and exploiting activities that are capable of contributing to the growth of the nation by generating income through potential revenues from such activities as a result of their operations and providing employment opportunities to a growing population of unemployed. (Adenutsi, 2009) observe that entrepreneurship should be seen as a means of identification of potential business opportunities and the use of economic resources to initiate a new business or revive an existing business under conditions of risks and uncertainties for the sole objective of making profit irrespective of risks and uncertainties. Critical evaluation of the scholarly views expressed above, shows that entrepreneurship requires identification of business opportunities and the creation of business activities that develops into entities that are capable of providing job opportunities, wages, contribute to socio-economic development and also provide income to owners in form of profits.

Recalling the historical antecedents of entrepreneurship development globally till date, it may not have totally eradicated poverty but may have cushioned the harsh realities of financial instabilities for those who embrace entrepreneurship practice in both developed and emerging economies on the global scale. Scholarly postulations may provide frameworks for actual practice which may not achieve success in reality,

because of the effect or impact of uncontrollable factors existing in the external environment. Although, the promotion and development of entrepreneurial activities will aid the dispersal and diversification of economic activities and induce even development in a country. (Ogundele, 2007) further opined that entrepreneurship activities encouraging both economic and political growth of an environments. Entrepreneurship can also be seen as a catalyst to stimulate the rate of economic growth, providing job opportunities as well as reducing the dependence on the import of manufactured products (Osuagwu, 2006). From a subjective perception, it could be deduced that entrepreneurship embraces all activities that bring income in one form or the other to the owner.

Entrepreneur is one who create new business ideas. Entrepreneurship as a whole contributes to social wealth by creating new market, new industries, new institutional forms and net increases in real productivity. The jobs created through their activities in turn lead to equitable distribution of income which culminates in higher standards of living for the populace. Entrepreneurship brings these benefits such as new job; higher incomes, increases wealth of small enterprises, and sustain jobs for the poor people which provided income that needed to purchase goods and services (Schumpeter in Rutashobya & Nchimbi, 1999).

The benefits of entrepreneurship are numerous. Entrepreneurship is essentially about striving to earn a good living as entrepreneurs are often rewarded with substantial financial gain in the form of profits. Another benefit derived from entrepreneurship is self-employment and own-bossing, which often offer unlimited job satisfaction and flexibility. Entrepreneurship also create jobs for others and this assist to reduce the rate of emigration and unemployment in an economy. Entrepreneurship is a source of income generation which propels economic growth. Entrepreneurship also has the potential of enhancing the development of new markets as well as development of entrepreneurial qualities and attitudes among potential entrepreneurs to bring about significant improvements in societies.

Objective

The main objective of this study is to investigate the impact of entrepreneurial practices on income generation on metal scrap businesses in Kwara State Nigeria, the following hypotheses are formulated to achieve the above objective.

Hypotheses

Ho_1: there is no significant relationship between mentoring in entrepreneurship and income generation among metal scrap businesses in Kwara State Nigeria.

Ho_1: entrepreneurial mindset does not significantly have impact on income generation on metal scrap business in Kwara State Nigeria.

Ho_1: there is no significant relationship between creativity, innovation and income generation in metal scrap businesses in Kwara State Nigeria.

Ho_1: product development does not have significant impact on income generation.

Scrap metal collection is largely performed by young men in their teens and twenties. Collection usually spans from early hours of the morning to late in the afternoon lasting about eight hours daily. Scrap metal collectors may usually go as individuals or in groups of two or more. The method of scrap metals collection varies from the use of simple technogical tools to the use of hands. Scrap metals are usually collected from dumpsite and stored and later sell depending on the local area (Moyos 2005). Different tools were used to identify the type of metal such as metal detectors, magnetic detecctor, the tools are used to differentiate between ferrous and non-ferrous scraps. Ferrous scrap are attracted to the magnetic detector.

Growth of Metal Scrap Market in Nigeria

In a free-market economy, scrap prices react quickly to changes in supply and demand (Fenton, 1998). If the demand for steel mill and foundry product is low, demand for scrap is low and prices fall. Dealers cannot influence sales of scrap if mills and foundries do not need to change their furnaces. Furthermore, the prices

of scrap depend upon the market condition for new products, the scrap industry uses inventory to absorb price differentials, that is, inventories increase as scrap prices decrease (Fenton, 1998). Prices of scrap are influenced by technological changes in mills, processing of scrap, the use of scrap substitutes, environmental controls and other government regulations and export demand.

Types of Scrap Metals

The metal industry is divided into ferrous and non-ferrous metal (Turkish Metal Industry Report, 2010):

Ferrous Scrap: Ferrous scrap comprise metal containing iron. Iron and steel scrap play an important role in the processing and final production of new ferrous products. Recycling of ferrous scrap prevent the environmental burden of large accumulations of scrap building up in landfill sites and other disposal area.

Sources of ferrous scrap for recycling can be broadly classified into three (Fenton, 1998, Javaid and Essadiqi, 2003).

- Internal Arising Scrap - these are materials reject from casting, rolling mill and other manufacturing processes. With more efficient steel and production, these scrap quantities have fallen over recent years.
- Prompt Industry Scrap – these scraps are producing from normal machining, stamping and other fabrication operations, in some cases manufacturers sell directly to the steel industry.
- Obsolete or Capital Scrap - when a products has served its useful life time and is then discarded for example cars, domestic appliances.

Non-Ferrous Scrap - these is comprises metal that do not contain iron. The most common non-ferrous metals include aluminum packaging waste, cable wires and electronic equipment form homes.

Growing Volume of Metal Scrap Wastes in Nigeria

Entrepreneurship offers a reliable source of income earning, not only to the entrepreneur and labour, but other factors inputs. Given the long-term focus and the growth potential of entrepreneurial activities, the entrepreneur and labour, and indeed, all income earners from entrepreneurial activities, become more economically independent and confident to confront the challenges of life. It can therefore, be stated that entrepreneurship promotes income empowerment in an economy. Entrepreneurship provides a new approach for fighting poverty and stimulating economic growth in developing countries.

Lack of an Efficient Infrastructural System to Cater for Metal Wastes in the Country and Growing Challenges

The Nigeria government recognizes the role of income generation in metal scrap as a viable solution to employment creation and poverty alleviation. In addition, income generating activities are crucial to the development of the economic growth of the country. Though, economic development wealth is created (MIT, 2004); income generating activities in metal scrap business play a vital role in social-economic development. The business plays the role of a socio-safety by providing incomes and employment, particularly to the under employed and those who can not find jobs in the labour market.

Income generation from metal scrap business are very important in developing new skills, services and job opportunities for the members of the society. It also stimulates the local economy and create financial income, therefore, bringing a lot of relief to the Nigerians (Danish Refuge Council, 2008). Furthermore, metal scrap business aims at positive impact in terms of self-reliance empowerment and community development.

Economic Policies Adverse Effort on Income Generation in Metal Scrap sector

There are a lot of constraints on their development and growth in this sector. Lack of proper funding has been a major threat in this sector. Many that engaged in this type of business could not thrive because there

is no enough funding. Also, lack of acquiring appropriate skills in the field of the business, limited access to market and lack of infrastructure are responsible for failure of generating income in this sector.

Scrap Metal as a Source of Raw Materials in a Non-Circular Role Economy Like Nigeria

Metal scrap can generate incomes; it can also be re-used and recycled as resource recovery measure in a circular economic model for a developing country like Nigeria. The most abundant of the metals found is aluminum while copper is most expensive. The sales of metal scrap is profitable, and it generate a lot of money to the unemployed. Much of the scrap was dumped at the various waste dumping sites in the municipal, some of the residents do not have knowledge about profit this waste could have generated.

Scrap metal recovery is a very important factor in building circular economy in the developing countries. For scrap metals to have any economic advantage, they should be able to plan a key role in one or all of the following four models within circular economy. (Accenture, 2014):

- Lasting resources that can be continuously regenerated over time not only to last longer (efficiency) but to last forever (effectiveness).
- Liquid markets where products and assets are optimally utilized by becoming easily accessible and convertible between users (for example, sharing or trading idle product and asset).
- Long life cycles where products are made to last in terms of upgrade, use and remanufacturing.
- Linked value chains where zero waste is generated from production to disposal by boosting recycling and resource efficiency.

Metal Wastes Central to Entrepreneurship, Wealth Creation & Economic Development

Entrepreneurship has been a powerful channel through which developing country like Nigeria create wealth and developed economically and employment opportunities are created for the citizens. This has several multiplier effects on the economy, innovation and encouraged investors, which serves as a better source of competitive advantage than other natural resources which can be depleted. An entrepreneur is someone who searches and identified opportunities in an economic system, assembles the necessary resources successfully to exploit opportunities, create and delivers a value in an economic system. These resources may include technology, finance, human and organization (Ogundele, 2007).

Innovation by independent forms is a mechanism for wealth redistribution. Even though, the distribution of wealth may change as established firms destroy competitors by means of innovations which lead to increase in the concentration of wealth since one large firm gains wealth at the expense of another.

Metal Wastes Collection: A Source of Wealth and Employment Creation

- The Role of the Individual: The entrepreneur is committed to wealth creation, capital accumulation and to business growth and is willing to forgo direct consumption in order to expand the scale of his/her entrepreneurial activities.
- The Role of Government: The government see entrepreneurs as a problem solver and to encourage economic performance and promote job creation. The key drivers of long-term growth in emerging economics are investment and productivity improvements. This has helped the government to have interest in both developed and developing countries on how government policies could be implemented in order to influence the rate and types of entrepreneurship.

Another way to view the role of government in entrepreneurship is to see government as the arbiter of background roles. This conception of government expands the scope of the concept of entrepreneurship and the role of the individual emphasizes the important role played by institution (both formal and informal institutions) for providing the incentives for entrepreneurial activity.

Benefits of Collecting Metal Wastes in the Manufacturing Sector

As earlier stated, scrap metal industry is a lucrative business and the income obtained from the scrap is sufficient and reliable to provide basic necessities such as food, clothing, shelter. In most of the developing countries there is child labour in the scrap metal business (Moyes, 2005). Despite all the benefits derived from this business, there are associated hazard such as inhalation of fumes and working in extremely hot environments which can cause health risk (Muchova and Eder; 2010). The scrap metal industry has employed a number of people in Nigeria, most of them being scrap metal collectors, who receive income from the trade. However, income generated per person per day is not well documented.

There are many benefits derived from metal scrap business and this can be categorized into three-economic, social and environmental benefits:

Economic Benefits

The economic benefit of the scrap metal business at the international level is so great. In 2010, the United States alone earned more than $30 billion from experts of products manufactured from scraps (Wiener, 2011). Metal scrap that is collected for recycling is material that does not have to be managed as a waste thus reducing the overall cost of waste management.

In addition, the high value of recycled metal scrap helps to sustain the economics of today's automotive and municipal recycling schemes (Martchek, 2000). It also reduces the cost of importing raw materials.

Social Benefits

In the United States alone, over 450,000 people are employed directly or indirectly by the scrap industry (Wiener, 2011). Another social benefit derived from scrap industry is that it minimises waste landfills, which reduces competition for urban lands for different uses and generates employment for collection and recycling activities (Martchek, 2000). The industry/sector improves the lives of local people involved in the scrap business, as also limited skills are required to be a partaker in the sector.

Environmental Benefits

Scrap recycling reduces green house gas emissions by requiring significantly less energy to manufacture products from recyclables than virgin materials by avoiding landfilling (Wiener, 2011). Apart from energy conversion, it also reduces land disturbance, water use, air emissions and waste generation (Global e-sustainability Initiative & Electronic Industry Citizenship Coalition, 2008).

Other Positive Impact of Metal Scrap Business are stated by (Areo & Ogungbile 2014)

- It is a source of employment for the teeming unemployed youths
- It re-directs the mind-set of the youth from crime to gainful vocation
- It helps in cleaning up the environment
- It reduces the risk of causing injuries to pedestrians
- It helps to reduce accident on roads
- Metal scrap are cheaps of raw materials for iron and steel mills.
- It helps to reduce gas emission through recycling. (Areo & Ogungbile 2014)

Limitations To Financial Empowerment in Scrap Metal Business

There are many benefits derived from the scrap business, at the same time, there are many negative repercaution from the business. In the process of recycling, heavy metals may be released into the air from burning of metal waste (Kimari, 2007). In the process of loading and unloading of scraps, employees or workers are exposed to many health hazard (Foulke, 2008) which can be prevented by using the appropriate combination of Personal Protective Equipment (PPE) such as hard hats, gloves, sturdy boots, thick clothing, and respirations (Foulke, 2008). Heavy manual labour may be required in the process of breaking the scraps

into pieces or sizes that can be fed in furnace. The employees who involved in this kind of activities may be exposed to metal times, smoke, hot environments, and hot materials when working near furnace, (Foulke, 2008).

Methods

Research Design

The study employed survey research design, this allowed for the use of a well structured research instrument for obtaining data that was used for this analysis. The target population for this study comprises of four thousand people (4,000) in metal scrap business, that is, scrap metal scavengers, depositors and ultimate users in selected Local Government Areas in Kwara State. The researcher physically visited the respondents (Association of Metal Scrap Business) at their locations in Ilorin South, Ilorin West, Ilorin East and Asa Local Government Areas respectively. From the total population, a sample size of three hundred and sixty five (365) respondents was selected from the population. The justification for chosen 365 was that it is greater than 5% of the choosing population (Gay & Diehl, 1992).

Taro Yamane Formula:

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

n = the sample size
N = the population size
e = the acceptable sample error
1 = constant
95% confidence level and p = 0.5 are assumed
N = 4,000
MOE = 5%

$$n = \frac{4000}{1 + 4000 (.05^2)}$$

$$\frac{4000}{11} = 363.63$$

To make room for challenges which includes incomplete questionnaires in some cases, non- return of questionnaires and non-response, 30% of 363.63 which is equal to 109 was added to 363.63 which make the sample size to equal to 473.

Sampling Techniques

This study adopted a probability sampling technique, where all the participants has an equal chance of been selected. Stratified sampling technique was employed in this study in which the target population was divided into homogeneous groups called 'Strata' and a sample was drawn from each stratum at random. The entire population was divided into four (4) strata groups and samples were drawn using the formulae below;

$n_s = n/N * s$

where n_s = stratified random sample
n = sample size
N = Population
S = Strata Group

S/N	*Local Government Area*	*Population*	*Sample*
1	Ilorin South	1450	172
2	Ilorin West	1240	146
3	Ilorin East	810	95

4	Asa	500	60
	Total	4000	473

Source: Author's computation

Sources of Data Collection

Method of Data Collection

Data for this research work were collected using primary source. Questionnaires were distributed to the scavengers, depositors and ultimate users in Ilorin West, Ilorin East, Ilorin West and Asa Local Government of Kwara State. The respondents were placed on a Modified four point Likert scale with scoring weight as follows: Strongly Agree (4 points), Agree (3 points), , Disagree (2 points), Strongly Disagree (1 point).

Method of Data Analysis

Regression analysis was employed in testing the formulated hypothesis while statistical package for Social Sciences (SPSS) version 16.0 was adopted in the analysis of data. The statistical correlation is significant. If co-efficient is more than 0 – 5. If the p-value is high, it cannot be determined that the correlation actually exist.

Results

A group of hypotheses is formulated to achieve the objective of the study.
Functionally we have

$y_1 = \alpha 0 + \bar{A}_1 x_1 + e$

$y_2 = \alpha 0 + \beta_2 x_2 + e$

$y_3 = \alpha 0 + \tilde{E}_3 x_3 + e$

$y_4 = \alpha 0 + ¥_4 x_4 + e$

$Y = x_1 + x_2 + x_3 + x_4 + x_5 + e.$

Table 4.1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	829[a]	.688	.686	13.130	2.399

a. Predictors: (Constant), product development, creativity and innovation, mentoring, entrepreneurial mindset
b. Dependent Variable: income generation

Source: Author's Computation 2018.

The table above presents the model summary of the impact of entrepreneurial practices on income generation of metal scrap business operators. The table shows R-squared and Adjusted R-squared to be 0.688 and 0.686 respectively. This implies that entrepreneurial practices explain about 69% of variation in income generation of metal scrap business operators in Nigeria. Durbin-Watson statistic value stood at 2.399, and this indicates this model is also free from serial correlation, as its value surrounds 2.

Table 4.2: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	160250.422	3	53416.807	309.828	.000[b]
	Residual	72756.244	422	172.408		
	Total	233006.667	425			

a. Dependent Variable: income generation
b. Predictors: (Constant), product development, creativity and innovation, mentoring, entrepreneurial mindset

Source: Author's Computation 2018.

The table above presents the analysis of variance (ANOVA) for the model. F-statistic is shown with value 309.828 and probability value 0.000 indicating the reported F-statistic is significant. This implies that the overall model is significant. In other words, entrepreneurial practices such as mentoring, creativity and innovation and product development jointly have significant impact on income generation of metal scrap business operators in Nigeria.

Table 4.3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
3	(Constant)	5.435	.961		5.653	.000		
	Mentoring	.358	.037	.430	9.630	.000	.371	2.694
	Creativity &innovation	.251	.035	.295	7.123	.000	.432	2.316
	Productdevelopment	.171	.033	.199	5.206	.000	.506	1.976
	Entrepreneural mindset	.238	0.34	.259	4.862	.003	.482	2.513

a. Dependent Variable: income generation

Source: Author's Computation 2018

Interpretation

The table above presents the coefficients of the impact of entrepreneurial practices on income generation of metal scrap business operators in Nigeria. The result shows mentoring, creativity and innovation and product development to influence income generation positively. The positive impact of each of these variables are found to be statistically significant. This is evident from each of their probability values (Sig.) being less than 0.05 (i.e. 5% level of significance). The statistically significant positive coefficient values of mentoring, creativity and innovation, product development and entrepreneurial mindset indicate that increase in mentoring, creativity and innovation, product development and entrepreneurial mindset increases income generation of metal scrap business operators by 0.358, 0.251, 0.171 and 0,238 respectively, and vice versa. The standardized coefficients show which of the entrepreneurial practices has the most impact on income generation of metal scrap business operators. Mentoring has a standardized coefficient value of 0.430, creativity and innovation has a standardized coefficient value of 0.295 and product development has a standardized coefficient value of 0.199 while entrepreneurial mindset has a standardized coefficient value of 0.259. This indicates that of these three statistically significant variables, mentoring has the most impact on income generation of metal scrap business operators in Kwara State, Nigeria followed by creativity and innovations, entrepreneurial mindset then product development.

Checking for the existence multicollinearity in the model, the variance inflation factor (VIF) is also presented in the table above. The VIF statistic shows values less than 3 for mentoring, creativity and innovations and value less than 2 for product development. This indicates that the model is free from multicollinearity since each of the variables has VIF statistic value less than 20 above which a variable is said to have linear relationship with another.

Discussion of Findings

The table above presents the model summary of the impact of entrepreneurial practices on income generation of metal scrap business. The table shows R-squared and adjusted R-squared to be 0.688 and 0.686 respectively. This implied that entrepreneurial practices explain about 45% of variation in income generation of metal scrap business operators in Kwara State Nigeria. Durbin-Watson statistic value stood at 2.399, and this indicates that this model is free from serial correlation as it value surrounds 2.

The table ANOVA present analysis of variance (ANOVA) for the model, F-statistics is shown with value 309.828 and probability value 0.000 indicating the reported F-statistics is significant. This implies that

the overall model is significant. In other words, entrepreneurial practices such as mentoring, entrepreneurial mindset, creativity and innovation and product development jointly have significant impact on income generation of metal scrap operators in Kwara State.

The statistically significant positive, coefficient value of mentoring, entrepreneurial mindset, creativity and innovation, and product development increases income generation of metal scrap business operations by 0.358, 0.251, 0.171 and 0.238 respectively and vice versa. Standardized coefficient show which of the entrepreneurial practices has the most impact on income generation of metal scrap business operators. The Standardized Coefficient for mentoring, creativity and innovation, product development and entrepreneurial mindset are 0.430, 0.295, 0.199 and 0.259 respectively. Mentoring has the most impact on income generation of metal scrap business operators in Kwara State followed by creativity and Innovation, entrepreneurial mindset and product development.

Conclusion

From the above tables it can be deduced that statistically significant positive coefficient values of mentoring, creativity and innovation, product development and entrepreneurial mindset indicate that increase in any of the variable lead to increase in income generation of metal scrap business operators in Kwara State Nigeria. Entrepreneurship has been a powerful channel through which developing country like Nigeria creates wealth and developed economically and employment opportunities. It is also concluded that sales of metal scrap is profitable, and it generate a lot of money to the unemployed. It is very important in developing new skills, services and job creation for the members of the society, therefore, bringing a lot of relief to the Nigerians.

Janvier, (2012) examined entrepreneurship and income level in developing countries and found out that the relationship between entrepreneurship and income per capital is U-shaped and identifies an income threshold estimated at $7300 above which income per capital is associated with increasing entrepreneurship. Also, paid employment provides higher risk adjusted income than survival entrepreneur. Beyond the threshold, high level of income per capital allows people who would otherwise be in paid employment to become creative, independent, and take more risk in choosing to engage in entrepreneurship. The findings of research question two and hypothesis two revealed that entrepreneurial mindset has significant impact on income generation on metal scrap business in Nigeria. The results support prior researches such as Duru (2011), Akintayo (2013), Imafidon (2014), Ibitoye, Atoyebi, & Sufian (2015) who opined that entrepreneurship contributes significantly to income generation and stimulates growth in the economy. The implication of the study shows that entrepreneurship mindset invariably leads to income creation and job creation which consequently leads to economic development. Therefore, Nigerian should exploit the various economic opportunities in the economy to their advantage and the government and other institutions should also channel their effort towards the meaningful development of entrepreneurship practices. Also, the ANOVA and Coefficient tables revealed that there is a positive relationship between mentoring, entrepreneurial mindset, creativity and innovation and product development and they jointly have significant impact on income generation in metal scrap operators in Kwara State

Recommendations

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

i. Youth should be encouraged to be personally involved in the scrap metal trade so as to get daily income.
ii. Also, the researcher recommended that this sector should establish training centres for both young and old people so as to be adequately equipped and funded to achieve the desired goals.
iii. Practical programmes in schools' curriculum, creating awareness through mentoring, entrepreneurial skills, training classes, development programmes, seminar, conferences and workshop should be encouraged.

iv. Metal scavenging is the key to getting cheaper raw materials for steel industries, therefore, government should encourage the scavengers by formalizing the group and providing them with soft loans to buy and sell the scraps scavenged.
v. Metal scrap business represents viable means of greater utilization of job input by many unemployed youths and therefore should be given better recognition by the government.

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