TECHNICAL INFORMAL SECTOR ACTIVITIES AND POVERTY ALLEVIATION: EVIDENCE FROM GOMBE STATE, NIGERIA

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Abstract

This study was conducted to empirically examine the role of informal sector in poverty alleviation in Gombe metropolis, Nigeria. Structured questionnaire was used to gather first hand information on variables of interest. Both descriptive statistic and logistic regression analysis were conducted. Empirical results obtained from the study indicated that Vocational training among informal sector operators have a negative and significant impact on likelihood of poverty alleviation in Gombe metropolis in Gombe state; level of education also has negative and significant tendencies of alleviating poverty among informal sector operators in Gombe metropolis; age of the operator has a negative and significant probability on poverty alleviation in Gombe metropolis; and household size is also found to have a negative and significant probability on poverty alleviation in Gombe metropolis. We conclude by presenting concluding remarks and policy implications for decision making toward repositioning of technical and vocational education in order to effectively alleviate poverty in Nigeria.

Keywords: Informal Economy, Technical and Vocational Training, Poverty Alleviation, Entrepreneurship Development, Job Creation

INTRODUCTION

Eradication of poverty is one of the greatest challenges to growth and developmental needs of developing countries and it is therefore an indispensable requirement for the attainment of sustainable development (United Nations, 2015). As a result countries as well as regional and international organizations are committed toward eradication of chronic poverty and hunger in such a way that resources and action plans (e.g Millennium Development Goals) are designed with view of curbing poverty among others. This enthusiasm at the international level led to the declaration of Sustainable Development Goals (SDGs) with well defined targets and measurable outcomes among which is to end poverty in all its form everywhere by 2030 (United Nations, 2015). Thus, SDGs declaration is commendable as performance by developing countries of Asia, Latin America, and Africa in eradicating poverty is not encouraging despite appreciable growth recorded in such economies as documented by Collier (2007). The SDGs declaration is pertinent because, despite decline in poverty rate in Sub-Saharan Africa, the proportion of those living in extreme poverty has been on the rise as noted by Maku, Ogwumike, & Adesoye (2014) and specifically in Nigeria for example, although poverty rate remains relatively stable but the situation worsened after implementation of MDGs as documented by Abdullahi (2014).

In an effort to fight poverty in Nigeria, successive regimes in the country at both national and sub national levels formulated one form of poverty alleviation or reduction program meant to reduce the level of poverty, give hope and succor to the poor and/or move towards some sort of wealth creation. Some of these strategies articulated with view of poverty eradication in Nigeria include Operation Feed the Nation (OFN); the Green Revolution; Directorate of Food Roads and Rural Infrastructure (DFFRI); Agricultural Development Program (ADP); National Directorate of Employment (NDE); National Poverty Eradication Program (NAPEP); National Economic and Empowerment Strategy (NEEDS); Small and Medium Enterprise Development Agency (SMEDAN); and Subsidy Reinvestment and Empowerment Program (SURE-P) among others. In a similar passion the government of Gombe State opted to create technical and vocational schools across the entire Local Government Areas of the state in the year 2005. The policy was conceived to redirect prospective labor toward self-employment and curb the excessive reliance on government for job opportunities as well as to reduce the level of poverty particularly among the youths. The policy was timely conceived as there was perceived inaction and marginalization of technical and vocational education and training (TVET) and its role in poverty reduction by donor investment and governments in developing countries (Bennell, 1999 and Hartl, 2006).

Technical training and expertise is believe to drive entrepreneurship development which contributes significantly in terms of poverty reduction through expansion of existing markets and increase social wealth by creating new market (Hussain, Bhuiyan & Bakar, 2014). Technical and vocational education and training (TVET) can serves as an effective mechanism of facilitating poverty reduction, job creation and economic expansion in the developing countries of Africa. In tandem with the above assertion, there is a general believe that technical training is critical to acquisition of skills and competences which empower labor and capable of poverty reduction (Aoun, 2004; Nwachukwu, 2014; and Wallenborn, 2009). In addition, despite the fact that informal sector remain the highest sector that serve as a source of job opportunities to labour in both rural and urban areas in Nigeria. The sector does not receive treatment it deserves from both policy makers and researchers in Nigeria. Hence, this study was conducted to empirically answer the following questions:

i.   Does Informal technical services have influence on poverty alleviation?

ii.   How does Vocational training among informal sector operators influence poverty alleviation?

The remainder of the paper is organized as follows: section two briefly reviews theoretical framework and literature on informal sector activities and vocational education and training and its impact on poverty alleviation. Section three discusses the econometric methodology and sources of data used in the study. Background information on the study area has been anchored in section four. Presentation and discussions of results as well as conclusion and policy implication are done in section five and six respectively.

LITERATURE REVIEW

Theoretical Framework

We adopt the theory of economic dualism to achieve specific objectives of the study. Implicit in economy structure and structural change theories is the notion of dual societies in the developing countries like Nigeria. Dualism is a popular concept in development economics. It depicts the presence of increasing divergence between rich and poor, formal and informal sectors, traditional and modern sectors. According to Todaro and Smith (2011) the following key arguments persist in the concept of dualism:

i.   Two conditions of which one is superior (formal sector) and regulated while the other is inferior (informal sector) and unregulated exist together;

ii.   The existence is a permanent phenomenon. Therefore, coexistence is no transitional; and

iii.   The relationship between the formal and informal sector does little or nothing to pull up informal sector. It may eventually push it down to promote the underdevelopment of the informal sector.

Empirical Review

Role of informal sector in poverty alleviation have been empirically investigated by different scholars and researchers both in Nigeria and other countries around the globe or world. Some of these researches include Tshuma & Jari (2013) who examined the role of informal sector in augmenting household income in Alice town in the Eastern Cape province of South Africa. The data use for the study is mainly obtained through interviewer administered questionnaire. The study reveals that informal sector provides employment opportunities for the less educated and formally unemployed there by providing them with income. Based on their findings they find out that, the contribution that small business or informal sector has to the nation show that the poverty line can be escaped and faster rate economic growth and development can be achieved especially if these informal sectors are supported. Agupusi (2007) examined the role of the small business sector in poverty alleviation by the support from government and private sector initiative in Alexandra, South Africa. He applied critical analysis of secondary material complemented with primary data obtained through semi-structured interviews with key informants and actors, entrepreneurs and potential entrepreneurs. The found that with positive interaction between development agencies, and small businesses in Alexandra, predominantly informal and semi-formal SMMEs in Alexandra could not only alleviate poverty but could also contribute to the general transformation process.

Also, Delbiso (2011) investigated the role of informal sector in reducing youths unemployment. Data for the study are gathered from a sample of 204 youth's informal sectors operators in Hawassa city, Ethopia. The study makes use of logistic regression to determine the factor that can contribute to livelihood improvement of the operators. The study revealed that, informal sector plays a crucial role in alleviating poverty in the urban area through creation of jobs opportunities. Mbeng (2013) investigates the role of informal waste recovery and recycling sector in Douala, Cameroon in alleviating poverty, environmental pollution and unemployment. The methodology used for the study consists of quantitative survey using random sampling and qualitative interview to add depth and details to the survey result. The study reveals that, poverty trends in Cameron are higher in the rural areas than in the urban areas which serve as a major cause of rural-urban migration.

In Nigeria most of the studies focused on the role of informal sector in providing job opportunities and income generation. For instance Phillip, Samson & Ogwu (2013) explored the

role of informal sector as a strategy for reducing poverty in Nigeria with reference to Kogi state. The study makes use of data from both primary and secondary sources. The data were analysed using tables and chi-square statistical tools. From the study conducted they finds out that informal sector plays a vital role in the socio-economic advancement of Nigeria. Oluranti (2011) examined the role of urban informal transport sub-sector; motorcycle taxis (popular called Okada) towards the provision of self-employment and income generating opportunities to urban unemployed youths in south-west Nigeria. The data for the study was generated from a survey of 777 randomly selected motorcycle riders in the study area. The study uses two econometric models which are specified and estimated using ordinary least square techniques. The study revealed that the sub-sector is a high employer of young school leavers in the accident prone job of Okada riding. It also revealed that the operators earned above the minimum wage level. Farinmade (2012) investigated the challenges of improving informal sector activities conditions in Lagos Island, Nigeria. The survey was carried out using stratified random sampling to ensure a fair representation of the population on each selected streets. The study revealed that there is a relationship between employment in the informal sector and formal sector unemployment, illiteracy, environmental degradation and the rampant violation of planning regulations.

Furthermore, Oloyede (2008) examined two critical but interrelated issue namely, to what extent has informal financial sector been able to mobilized rural savings, and to what extent has savings resulting there from been channel to productive investment that help in rural development in Nigeria. The study critically analyses primary data collected from field survey and questionnaire, using random sampling techniques in sourcing data. The study shows the relative important of the informal financial sector over its formal institution in mobilizing funds for rural development. The study also revealed that, myriads of problems still be said their effective performance. Onwe (2013) studied informal sector and its role in development of the Nigerian economy. The study employed the survey of the Nigerian informal sector carried out by CBN. The study revealed that the traditional or informal sector is continuously expanding in developing countries and has been serving as safety belt in the provision of employment and income to the teeming poor. Yusuf, Ijaiya. & Ijaiya (2009) evaluated the role of informal financial institution (rotating savings and credit association, ROSCAs) in reducing poverty among people in Offa, Kwara State. The study source of data was mainly through primary and secondary sources. In analysing the data collected p-alpha-class measure and multiple regression analyses were used. The studies revealed that, the informal financial institution play an important role in reducing poverty among the people.

Background Information about Gombe State

Gombe is a state in north-eastern Nigeria comprises of 11 local government areas. The state has been governed by both military and democratic leaders and is currently being governed by democratically elected governor. The state shared a border to the North by Yobe Sate, Adamawa and Taraba States to the South, Borno State to the East, and Bauchi State to the West respectively. The state has an area of about 20,265 sq. km with a total population of 2,587,042 based on 2005 Census. The state consists of many ethnic groups including Fulani, Tera, Waja, Tangale, Kanuri, Bolewa, Jukun, Tula, Cham, Lunguda, Dadiya, Pero, Kamo and Hausa (Mustapha, 2003). This clearly indicates rich and diverse socio-cultural orientation in the state and the people are predominantly Muslims, Christians, or practicing African traditional believes.

Agriculture is the major source of livelihood of the people in state as most of them are predominantly farmers and an approximate 70-75 percent of the population engaged in farming and fishing (Mustapha, 2003). Both food crops and cash crops, and livestock are produced in the state due to its conducive agricultural climate. For instance, they include cereals (like maize, sorghum, millet, rice, and wheat); legumes (e.g cotton, ground nuts, beans, soya beans, and bambara nuts); fruits (like mango, guava, banana, paw paw, and lemon); vegetables (e.g pepper, tomatoes, onions, okra, pumpkin, and melon); and livestock (including cattle, camels, sheep, goats, poultry, and rabbits).

In addition, state is blessed with abundant natural endowments that can meet the demand for both national and international industrial needs. These minerals that are found across the state include coal, limestone, gypsum, and uranium. The state is a host to some industries like Ashaka Cement Plc, cotton ginneries, and cluster of ground nut mills as well as rice processing. Also, the state hosts the multipurpose Dadinkowa Dam (Nigeria's second largest dam) with capacity of generating hydropower for both domestic and industrial needs of the six states in the zone (Sunday, 2014).

On a final note, a part from favourable arable land for agricultural activities in the state, there are also scenic landscape and tourist attraction sites for tourism and leisure. These monuments include Bima Hill, Tomb of Sultan Attahiru II, Killang Hill, Tula Plateau, Bulak Warm Spring, Kalam Hill, Cham Valley, Tula Hideout Caves and Kanawa Forest.Thus, the state has a potential of being one of the major tourism destinations in Nigeria.

METHODOLOGY

Sources of Data

This study used cross sectional data which were sourced through a survey studies during the month of May, 2017 in Gombe metropolis with the help of three research assistants. The data were collected using cluster sampling technique. Informal sector operators in the study area have been divided in to clusters consisting of barbing/hair dressing saloon, welding, mechanics, refrigerator repairs, tailoring, and carpentering. Each of these clusters represents the heterogeneity of the population we are studying and they are homogeneous within each unit as posit by Adefila (2008). From the units, simple random sampling techniques was used in administering copies of the questionnaire to 430 informal sector operators in Gombe out of which 400 copies of the questionnaire (i.e. 93.00 percent) were valid and hence processed for this study. This is also in line with the assertion made by Hsieh, Block, & Larsen (1998) and Demidenko (2007) that about 350 observations would be required to achieve 95 percent statistical power in logistic regression with less than 10 independent variables and also conformed to central limit theory.

Model Specification

To achieve the specific objectives of this study the following empirical model is specified as:

$$Prob(Poor_i = j) = \frac{\exp(X^1_{ij}\ \beta_I)}{\sum_{j=0}^{1} \exp(X^1_{ij}\ \beta_I)}\ j = 1, 0.\ X_i =$$

$$Tech, Vtrain, Wincome, Age, Male, Educ, Hhsize_i, \qquad (1)$$

When transformed into a linear regression model, equation (1) thus becomes:

$$Prob(Poor_i = j) = \alpha + \beta_1 Tech_i + \beta_2 Vtrain_i + \beta_3 Wincome + \beta_4 Age_i + \beta_5 Male_i + \beta_6 Educ_i +$$

$$\beta_7 Hsize_i + \mu_i \qquad\qquad (2)$$

Where:

Poor = Dummy for poor households (Adopt poverty line obtained from average consumption expenditure per individual). If poor = 0; otherwise = 1

Tech = Dummy variable if informal activity is technical services = 1; otherwise = 0

Vtrain = Dummy variable if informal operator receive formal vocational or technical training = 1; otherwise = 0

Wincome = Weekly income generated from informal activities

Age = Age of informal sector operator

Male = Dummy variable if informal operator is male = 1; otherwise = 0

Educ = Highest level of educational training receive by the operator

Hsize = Household size of informal sector operator.

$β_{is}$ = parameters of estimates

$μ_i$ = error term

Estimation Techniques

Both descriptive and econometric analyses were used in the study in analyzing the data to achieve its preoccupation. Specifically, descriptive statistics was used to achieve the first research objective while the impact of technical activities and that of formal vocational training were analyzed with the aid of discrete choice model. The choice of the discrete model rather than the traditional regression analysis was informed due to the fact that, the study entails qualitative response in which the dependent variable is non-continues. Hence, the orthodox regression model may not be accurate in the analysis of such discrete model as specified in equation 2 above (Wooldridge, 2002; Baum, 2006; Cameron & Trivedi, 2009; and Greene, 2013).

RESULTS AND DISCUSSION

Respondent Profile

Table 1: Summary Statistic of respondents Age, Households Size and Weekly Consumption and Income

Variable	No. of Observation	Mean	Std. Dev	Minimum	Maximum
Age	400	31.6375	9.0307	18	67
Hhsize	400	5.3175	4.6670	1	25
Consumption	400	7942.748	6661.106	700	50000
Income	400	15021.76	14109.91	1000	150000

Table 1 presents summarised age distribution, household size, weekly consumption and weekly income (revenue) of the respondents. The table shows that age of youngest and oldest respondents were 18 years and 67 years respectively. On average the respondents were within the age of 31 years. This indicates that most of the respondents are at their youthful age and can actively engage in various activities in the informal sector of the economy. The table also show that the minimum and maximum household where 1 and 25 respectively. On the average the respondent's household size is 5. This indicates that majority of the respondent take care of one or more people. The table also shows that lowest and highest level of consumption expenditures per week by respondent were N700 and N50000 respectively. On the average the

weekly consumption expenditure is N7942. This may suggests that an individual live beyond the poverty line. The table also show the minimum and maximum income earn per week were N1000 and N150000 respectively. On the average the weekly income is N15000. This implies that, on the average, monthly revenue generated by the informal sector operator is N60000 which is far more than the minimum wage of N18000 per month in Nigeria. This is also more than the salary of a fresh graduate working with Gombe state government.

Table 2: Socio–Demographic Characteristics of the Informal Sector Operators in Gombe

Variable	Frequency	Percentage
Gender		
Male	326	81.50
Female	74	18.50
Marital Status		
Single	170	42.50
Married	205	51.25
Divorced	16	4.00
Widow	9	2.25
Educational Level		
Non Formal Education	41	10.28
Primary Education	34	8.52
Secondary Education	219	54.89
Tertiary Education	105	26.32

However, table 2 present socio demographic characteristics of the respondents. The table show that most of the respondents interviewed for this study were male as indicated by 81.50 percent against female respondents. This high proportion of male relative to female respondents can be linked to the nature of informal activities which by their nature exclude potential female participants.

Also, married respondents constituted 51.25 percent compared to any category of marital status as presented in table 2. This means that majority of the respondents have either a child or dependent. This also implies that those respondents know how it takes to shoulder the responsibilities of their families.

In addition, the table shows that respondents who have secondary education accounted for 54.85 percent. This implies that higher proportion of the respondents obtained at least secondary school education. This implies that one does not need a higher level of education to start operating in the informal sector. The statistic also means that with secondary education

one can earn more than the minimum wage of 18000 per month as result of his engagement in the informal activities. Indeed, with secondary school education one can earn income more than an actively engaged graduate who is working with Gombe state government.

Table 3: Distribution of Respondents Informal Activity in Gombe

Variable	Frequency	Percentage
Activity		
Tailoring	70	17.50
Hair Dressing	35	8.75
Mechanic	94	23.50
Welding	52	13.00
Barbing Saloon	43	10.75
Carpentering	55	13.75
Refrigerator Repairs	51	12.75
Employed		
Yes	154	38.60
No	245	61.40
Public	77	50.00
Private	77	50.00
Vocational Training		
Yes	254	63.66
No	145	36.34

Nevertheless, Table 3 presents distribution of respondent's informal activity in Gombe. The table indicates that, about 23.50 percent of the respondents are engage in mechanics activities. This may be informed by the decision of government of Gombe state not to ban the use of commercial motorcycle despite security challenges in North-East and the state in particular. The policy might also be that those in authority foresee a corollary between informal activities and poverty reduction among youths.

Also, the table depicts that 61.40 percent of the respondents are solely engaged in the informal sector. This means that majority of the respondent depends mainly on informal sector for their livelihood. That is, they do not have any other source of earnings aside the sector. The table further shows that out of the 38.6 percent that do engaged in the formal sector the ration of those employed in either public or private sector is 50:50.

In addition, the table shows that 63.66 percent of the respondent received formal vocational training before starting their business. This implies that in normal circumstances

those who received vocational training are expected to excel in their business because of the training they received.

Informal Sector and Poverty Alleviation Model Estimates

The empirical results of the effects of technical informal sector activity on poverty alleviation in Gombe metropolis have been presented in table 4. The table shows that five determinants of poverty alleviation included in the model were found to have significant likelihood of alleviating poverty among informal sector operators in Gombe metropolis. Evidence from the study suggests that revenue generated from informal activity as well as age of the operator have positive tendencies on poverty reduction. On the other hand, findings from the study indicate that operators with formal vocational training, increase in the level of educational attainment, and increase in operator's household size have negative likelihood on poverty reduction.

Table 4: Results of Effects of determinants of Poverty Alleviation among informal sector operators in Gombe metropolis

Independent Variable	Logit	Marginal Effects
Tech	-0.3877	-0.0282
	(0.4580)	(0.0370)
Vtrain	-1.0227**	-0.0774**
	(0.3449)	(0.0358)
Wincome	0.0002***	0.0001***
	(0.0000)	(0.0000)
Age	0.0548**	0.0036**
	(0.0252)	(0.0016)
Male	0.5751	0.0325
	(0.5280)	(0.0273)
Educ	-0.4462**	-0.0293**
	(0.2009)	(0.0147)
Hhsize	-1.1105**	-0.0728**
	(0.1376)	(0.0148)
Constant	1.0257	
	(10762)	
Pseudo R – Squared	0.5381	
Observation	398	

*Note: Standard errors in parentheses. Dependent Variable = Poverty and ** & *** indicate significance at 5% & 1% respectively.*

Based on our findings therefore, it was established that revenue generated has the probability of alleviating poverty among informal sector operators in Gombe metropolis. This implies that an increase in revenue generated from informal activities will derive the operators to adequately cater for their family and other dependants and hence increase their chances of living above the poverty line. Also, the positive likelihood between increase in operator's age and poverty alleviation may be informed by not existence of diminishing marginal productivity of labour with reference to informal sector business. Impliedly, as an individual gained more experience in the business his/her skills and efficiency also increase which in turn increase tendencies of escaping the trap of poverty or lying above the poverty line.

The findings further revealed that informal sector actors that undergo formal technical and vocational training are more likely to be poor. This result contradicts yearnings and aspirations of policy makers in the state of youth empowerment and reduction of poverty. However, the result can be attributed to poor or ineffective instructional materials and/or curriculum development. Similarly, evidence from the study portray that increase educational attainment among informal operators is associated with less likelihood of poverty reduction. This may also be link to continue degradation of education standard in the country and less priority given to entrepreneurship development in our designed curriculum. In addition, the increase in household size of informal sector operator has the probability of becoming poor. This is because, as the size of family increases the income earned may not necessarily be adequate enough to take care of one's family needs.

On the other hand, second column of table 4 present marginal effects of the explanatory variables on likelihood of poverty alleviation among informal sector operators in Gombe metropolis. Essentially this will helps in determining the influence of each variable on probability of poverty reduction. Statistic from the table indicates that increase in revenue generation from informal activity and increase in operator's age have 0.0001 and 0.0036 more likelihood of poverty reduction among the respondents. The findings equally suggest that, operators with formal vocational training have 0.0774 less likelihood of living above poverty line in Gombe in the state. Similarly, increase education attainment and increase in the number of household members are associated with 0.0293 and 0.0728 less probability of escaping the trap of poverty.

CONCLUSIONS AND POLICY IMPLICATIONS

Our findings presented above suggest that formal technical and vocational education and training strongly influence likelihood of poverty reduction in Nigeria. To effectively reduce incidence of poverty in the country there is need for effective provision of instructional materials not only to technical and vocational institutions but also to other institutions of learning. There is

also need for stakeholders in the education sector of the economy as a matter of urgency to consider the need for redesigning our curriculum in such a way that emphasis will be place on entrepreneurship studies.

Secondly, basic infrastructural facilities that can aid and/or enhance productive activities in the informal sector need to be vigorously provided by government at all levels and encourage public–private partnership in some cases. This can serve as driven force for industrialization and sustain growth and development in the country.

Thirdly, actors in the informal sector must equally ensure quality service provision to their respective clients. This is necessary because, quality assurance in terms of service provision can enhance competitive power of prospective entrepreneur.

Finally, government should introduce family support programs particularly to vulnerable groups. Also, the operators should align family reproduction with their socioeconomic status and prevailing economic condition.

LIMITATIONS OF THE CURRENT STUDY

This study highlighted the role of informal sector's technical and vocational education and training in reducing poverty among youths in Gombe metropolis. Findings from the study suggest that informal sector activities in general and TVET in particular is an invaluable weapon that can be used in curbing poverty among the vulnerable groups in Nigeria, the study is not without limitations. Firstly, the main focus of the study is Gombe metropolis therefore its findings may not necessarily be applicable to other geopolitical regions or zones in the country. Also, the fact that the study examine the influence of technical know-how on poverty reduction in Gombe metropolis it does not exclusively study those that have attended the Vocational Training Schools in the State.

However, the above observed limitations of the study do not in any way rendered the empirical findings of the study invalid. Instead, we recommend further study to cover either any of the six geopolitical zones in the country or the country in general.

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