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Small and Medium Size Enterprises (SMEs) and Multidimensional Poverty Index: Empirical Evidence from Nigeria

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Abstract
The aim of this paper is to investigate the role of Small and Medium Enterprises (SMEs) on poverty reduction in Nigeria. Data were obtained from 432 small and medium entrepreneurs of Niger State in eight Local Government Areas selected through a cluster sampling technique. Using a Confirmatory Factor Analysis (CFA), the measurement model fit was determined, the outer loadings the structural model are highly significance at 0.05 level. The results indicate that all paths in the model are significant i.e. all their $\beta$ are positive and $p$-values are $< 0.05$, and the four hypotheses proposed are supported. The result shows that there are positive changes in the poverty status of the people due to their involvement in SMEs activities of employment, innovation, human capital development and income. The result implies that policy makers, government and their agencies should create an enabling environment through the provision of facilities such viable credit support, reduction in corporate taxes and the infrastructures needed for the opportunities in the SMEs to be harnessed optimally.

Keywords: Poverty Reduction, Nigeria, Confirmatory Factor Analysis, PLS-SEM

Introduction
Nigeria is regarded as the highly populated black nation (Folola, & Oyeniyi, 2015; Adunbi, 2015) endowed with privileged wealth from oil (Mduduzi, 2015), having the opportunity of business potentials and great market in relation to other economies of the world (Federal Ministry of Youth Development, 2013). In 2017, the ranking of Nigeria based on GDP Purchasing Power Parity (PPP) per capita, which put into account the variation between countries in terms of cost of living standard, ranked Nigeria as the 60th poorest country in the world (Atlas & Boots, 2018) and 37th in Africa (World Atlas, 2018).
On this note, Nigeria’s Human Development Index (HDI) value as at 2015 is 0.527 placing the country in the category of low human development, positioning the country as 152 out of 188 countries and
territories in the attainment of three basic dimensions of long and healthy life, access to education and a decent living standard (Human Development Report, 2015).

The task of reducing poverty and unemployment in Nigeria has been a great concern making the country to alternate among several programmes. Among them were National Accelerated Food Production Programme (NAFPP) in 1972, Green Revolution (GR) in 1979, Directorate of Food, Road and Rural Infrastructure (DFFRI) in 1986, National Directorate of Employment (NDE) in 1986, Better Life Programme (BLP) in 1986, People’s Bank of Nigeria (PBN) in 1989, Community Bank (CB) in 1990, Family Support Programme (FSP) in 1993, Family Economic Advancement Programme (FEAP) in 1997, National Poverty Eradication Programme (NAPEP) in 2001, National Economic Employment and Development Strategy (NEEDS) in 2004, Subsidy Re-Investment Programme (SURE-P) in 2012, to mention but few. All these programmes recoded limited successes due lack of commitment in the part of government (Hussaini, 2014).

Despite several programmes put in place by the government toward poverty eradication in the country, majority of people still live in absolute poverty. On a sad note, Nigerian economy is ranked the biggest economy in Africa and the real Gross Domestic Product (GDP) growth rate is rising, but the poverty rate is increasing. In fact, Nigeria was unable to meet up with the 2015 MDGs target No. 1 enunciated by the global community of eradicating poverty and hunger by 2015, which was attributed to poor implementation of poverty alleviation programmes in the part of the government. (Aidelunuoghene, 2014).

In 1980, poverty rate in Nigeria was very low at 27.2%, this skyrocketed to 69% in 2010 (National Bureau of Statistics, 2012). Chilaka and Odoh (2014) also reported that about 112.519 million Nigerians live in relative poverty condition which keeps increasing. This is about 69% of the total population of the country roughly estimated to be 163 million. For absolute poverty, it is at 99.284 million equivalents to 60.9%.

Nigeria is a federation consisting of thirty seven (37) states including Federal Capital Territory (FCT). It is also sub-divided to six (6) geo-political zones namely; South South, South West, South East, North West, North East and North Central respectively. North Central geopolitical zone consists of seven (7) states including Federal Capital Territory (FCT) namely; Benue, FCT-Abuja, Kogi, Kwara, Nassarawa, Niger and Plateau respectively. Figure 1 shows poverty trends in the north central geo-political zone of Nigeria for the period of 2004 to 2014:
As depicted in Figure 1, Niger State records the highest rate of poverty which is about 61.20%, then follows by Benue State having 59.20%, and the state with the least poverty rate in the zone is FCT-Abuja with 23.50%.

In line with the development of poverty alleviation through Millennium Development Goals (MDGs), several poverty reduction strategies aimed at creating an atmosphere for every person to develop and attain his or her full potential and contribute in a well-off and healthy society, have been established by government and multilateral lending institutions especially in developing economies in combating the menace of poverty and to reduce it to a bearable level. The poverty alleviation programmes such as microfinance, conditional cash transfers, unconditional and universal transfers, employment guarantee schemes, property rights and governance reforms employ income-consumption approach, however, there has been an increasing recognition that small and medium enterprises (SMEs) development could be put forward to act as a tool for poverty alleviation (Oba & Onuoha, 2013).

According to Adebayo and Nassar (2014), SMEs has been recognized as an essential instrument for poverty reduction in developing economies. Policy makers and academics have given much attention to the role of SMEs in poverty alleviation. Evidence abound that SMEs adopts labor intensive technology in its operation and requires little or no education which result in the creation of mass employment to people and improves more equitable distribution of income. SMEs emergence in all knock and crannies of developing countries fosters industrial dispersal and reduces rural and urban
migration (Asikhia, 2010), and promote economic growth through economic diversification (Downes, 2010).

SMEs are regarded as the most effective instrument of poverty alleviation due to the fact that they are the emerging private sector in poor countries which constitutes large share of firms and employment (Dowers & Masci, 2013). Mostly, micro, small and medium enterprises serve as the only opportunity for the poor; owners and workers of small businesses are ranked in the lower half of the income distribution; hence, their growth generates more equitable distribution of income. The recent studies particularly in developing economies focus on agro allied SMEs, for instance, in Bello et al. (2015); Nmadu et al. (2015); Oo (2015) and Mohammed and Onwurah (2016), little is known on general SMEs, which makes their significance on multidimensional poverty unclear. In addition, the few studies on general SMEs focus on empowerment, employment and women entrepreneurship, as shown in Adebayo and Nassar, (2014); Mohammed and Obeleagu-Nzelibe (2014); Emerole and Edeoga (2015); Hassan and Almubarak (2016) and Hossain (2017), where little is known on multidimensional poverty.

However, sequel to this background, the paper analytically investigate the role of SMEs in reducing occurrence and rate of poverty amongst people of Niger State, Nigeria, particularly, the factors inducing the ability of SMEs to reduce poverty through assessing the contribution of SMEs components/activities to poverty alleviation in the area.

The remaining of this paper consists of sections dealing with the theoretical studies of SMEs and poverty, literature on SMEs and poverty, research model and hypotheses, methodology, indicators of reliability validity and structural equation modelling results.

Past Studies
This study is hinged on the following theories, namely: Lewis-Fei-Ranis theory, trickledown theory, theory of proportionate growth and need for achievement theory.

**Lewis-Fei-Ranis Theory**
This is an economic model of unemployment in underdeveloped countries, which was made known by Lewis (1954) and Fei and Ranis (1964). According to this theory, excess labor supply in the non-profit oriented traditional sector, which cannot be engaged by public and large private enterprises led to the rise and development of SMEs. These efforts symbolized economic reality as they involved human capital. Consistent with this theory, SMEs’ growth and development are as a result of the high rate of unemployment and for which SMEs serve as a refuge for the unemployed. In the circumstances of economic crises, such as slow growth or contraction of labor absorption, the SME sector is anticipated to grow in order to serve as an alternative. Conversely, SMEs are at the same time expected to expand when formal employment grows (Willis, 2005).

**Trickledown Down Theory**
The Trickledown Theory propounded by Anderson (1964), opined that laying much emphases on the growth in the short run will substantially promote equality in the long run. Six propositions are
depicted by the theory which are linked in chronological order, these includes: (1) business can be encouraged so long as there is a direct profits to entrepreneurs or investors; (2) such encouragement will hearten the growth of the enterprise; (3) the profits realized from the growth will be invested or reinvested; (4) new jobs will be created from the investment; (5) the jobs will assist in satisfying the total needs of poor persons employed; (6) through earnings, savings and fresh opportunities in an open society including vocational training, education etc., consequently inequality may be reduced eventually. In line with this theory, the growth realized at first benefits only the high income groups which later descend to lower income groups after sometimes. The wealth created by entrepreneur as well trickle down to other poor family members and the society through wealth distribution.

**Theory of Proportionate Growth**

The second theory related to SMEs and poverty reduction is a popular standard model of firm growth known as the Gibrat’s Law of Proportionate Effect which was well known in 1931, the theory postulates as follows: that there exist no relationship between the size of the firm and its growth rate and that enterprise growth rate are to some extent independent of firm size; each firm (large and small) faces some unexpected shocks; the growth of firm (large and small) depends on their management of shocks.

SMEs being small and flexible can easily resist any kind of distress that want to weigh the business down as compared to large firms. Each shocks experience by small firms could signify injection of new ideas or innovation which makes the firm to remain in business and even stronger (Mbizi, Hove, Thondhlana, & Kakava, 2013), in general, the more the shocks, the higher the growth of SMEs and the less the poverty level (Parker, 2009).

**Need for Achievement Theory**

Another theory is that of Need for Achievement Theory of McClelland, 1965. Need for achievement theory is a motivational based theory which focuses primarily on goal-directed behavior of need of achievement rather than multiple needs. The theory laid emphasis on individual and society and that societal level of needs for achievement varies which explain differences in economic growth. Therefore, the ultimate way to promote economic development in poor countries is to raise higher the levels of needs of achievement among indigenous populations. Based on this model, recent evidence abound that there exist a positive relationship between need of achievement and entrepreneurship activity. Entrepreneurship with high need of achievement will involves greater SMEs activities which will create wealth, then, this wealth will fosters poverty alleviation (Jex & Brith, 2014).

**The Theory Underpinning the study**

Based on the theories of SMEs and poverty explained in the preceding section, the trickledown theory was found to capture the relationship between the four components of SMEs (employment, innovation, human capital development and income) and poverty reduction, and thereby been adopted for the study. Established on the premises of the theory, innovative activities of the business provide direct profit (income) to the entrepreneurs or investors; the profit realized from the growth
of the business will be invested and re-invested, and new jobs (employment) will be created from the investment; the earnings from the jobs will help to meet the needs of the poor (persons in poverty) employed; and through earnings, savings may be realized which can open opportunity for further training or education (human capital development), and consequently reduces inequality eventually.

**SMEs and Poverty**

SMEs are regarded as facilitator to the socio-economic growth and development of every country economy, and serves as absolute instrument and engine for the accomplishment of macroeconomic objectives of employment creation at little investment cost and enhancement of entrepreneurial capabilities, reducing rural-urban migration, promoting indigenous technology, utilization of local resources and poverty alleviation (Asikhia, 2010). Small businesses are accredited as the seedbed of industrial development. In Nigeria, SMEs besides their employment and income creation for the larger proportion of the county’s citizens, it is also acknowledge as the medium for indigenous entrepreneurial capabilities, industrial innovativeness, practical skills and organizational skills for business sector development (Abdullahi, Tahir, Aliyu and Abubakar, 2015).

According to Begum and Abdin (2015), the private sector which mainly comprise of micro, small and medium enterprises have the capacity to generate larger share of employment and income opportunities. For example, in Bangladesh, there are about 177 SMEs clusters having 19, 37,809 employees and workers and for which 14, 33,979 and 5, 03,830 constitutes number of male and female respectively. Though substantial number of jobs created by SMEs constitutes low paying, but makes possible for families to survive, educate their kids and in some instances move out of poverty (Lawal, Ajonbadi & Otokiti, 2014). SMEs provide rural employment opportunities particularly to the unskilled labour force and thus increases living standard of the rural poor (Vijayakumar, 2013). SMEs makes women who are more vulnerable to poverty to be self-employed, it serve as an umbrella for displaced workers from formal employment and also the disabilities (Munoz, Welsh, Chan & Raven, 2015).

Also, SMEs provide an important ground for creation and development of indigenous entrepreneurs in many aspects of economic activity. Some successful Nigeria entrepreneurs for example, Folawiyo, Okoya’s Eleganza, dantata, Dangote and Bank Anthony started their entrepreneurship career as small business owners (Lawal, Ajonbadi & Otokiti, 2014).

**Research Model and Research Hypothesis**

The research model was suggested based on the literature review presented. In this model, the outer factors include employment, innovation human capital development and income. The inner factor is the poverty alleviation. The PLS-SEM model of fit showing the variables is depicted in Figure 2. Thus, the research hypotheses based on the acceptance of the role of SMEs in alleviating poverty. Alleviating poverty seemed like only government responsibility to its citizenry based on public perception, people’s engagement in small ventures can equally make them particularly the poor to earn a living. For people to be enterprisingly conscious can make them to be involves in risk taking, tedious work, and at same time derive meaningful activities. In consideration of this, research hypotheses include:

H1: Perceived employment will have positive effect on poverty alleviation.
H2: Perceived human and capital development will have positive effect on poverty alleviation.
H3: Perceived income will have positive effect on poverty alleviation.
H4: Perceived innovation will have positive effect on poverty alleviation.

The variable used in this paper constituted both the dependent (Multidimensional Poverty) and the independent (employment, innovation, human capital Development and income) Variables. Bureau of Labour Statistics (2018) described employment in four categories which include employees that are paid wages or salaries, self-employed employers with one or more employees, own-account workers with no engaged employees and contributing family workers employed informally. Innovation as described by Reddy and Vijayachandra (2014), is a deliberate introduction of ideas, process or products to a job, work team or organisation that are new and beneficial to them. The human capital can be developed within SMEs activities such as interaction with co-workers, clients and consultants through which competences and skills are being gained (OECD, 2013). Income means a regular and coherent stream of money that is earned as salary or gained from investment (Barbora, 2018), it is as well a measure used to assess a firm’s performance or growth and also ascertain the extent of SMEs effect on people’s welfare (Lekovic & Meric, 2015). On the other hand, multidimensional poverty consists of many factors that comprise poor people experience of deprivation, for instance lack of education, poor health and inadequate living standard.
Sources of Data and Instrument of Data Analysis

This paper is on the role of SMEs in alleviating poverty in Niger State, Nigeria. SMEs activities have been identified by various researchers as an instrument for improving living standard. To investigate our hypotheses, data were gathered from SMEs owners (n=520), but there was an unreturned survey questionnaire (n=88). The valid sample was 432. To validate the research model, this paper pencils on Smart PLS 3.0, utilizing the weighting system. Two step approaches were adopted; the initial step is a confirmatory factor analysis which confirms the reliability and validity of the research instrument. The later step is to examine the structural equation model so as to evaluate the research hypothesis.

Indicators Reliability and Validity

To accomplish the assessment of the structural model, it is vital to achieve the reliability and validity of the latent variables. The measurement of the convergent validity is typically determined by the loadings, composite reliability and average variance extracted. Ramayah et al. (2017) submit that for the convergent validity to be achieved, the value of the loadings and composite reliability should be higher than 0.7 and that of average variance extracted should be higher than 0.5. The subsequent tables depict the several reliability and validity items which we verify and present in the conduct of a Partial Least Square Structural Equation Modelling (PLS-SEM) (see Table 1). The first to confirm is the “Composite Reliability”. The values of all the indicators are observed to be greater than 0.6, hence established among latent variables high degree of internal consistency reliability. To certify convergent validity, Average Variance Extracted (AVE) for each latent variable is assessed. It is discovered that all the values of AVE are larger than the recommended minimum level of 0.5, this confirmed the convergent validity.
Table 1: The CFA Report for Every Construct in the model

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
<th>Factor Loading</th>
<th>Composite Reliability (Minimum 0.6/0.7)</th>
<th>Average Extracted Variance (Minimum 0.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>EMP1</td>
<td>0.741</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMP2</td>
<td>0.887</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMP4</td>
<td>0.756</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMP5</td>
<td>0.795</td>
<td>0.874</td>
<td>0.635</td>
</tr>
<tr>
<td>Human Development</td>
<td>HCD3</td>
<td>0.782</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>HCD4</td>
<td>0.847</td>
<td>0.863</td>
<td>0.667</td>
</tr>
<tr>
<td></td>
<td>HCD6</td>
<td>0.837</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>INC1</td>
<td>0.799</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INC2</td>
<td>0.795</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INC3</td>
<td>0.825</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INC4</td>
<td>0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INC5</td>
<td>0.928</td>
<td>0.976</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>INC6</td>
<td>0.966</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INC7</td>
<td>0.955</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INC8</td>
<td>0.967</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INC9</td>
<td>0.939</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation</td>
<td>INN1</td>
<td>0.833</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INN3</td>
<td>0.807</td>
<td>0.842</td>
<td>0.639</td>
</tr>
<tr>
<td></td>
<td>INN5</td>
<td>0.758</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td>POV2</td>
<td>0.813</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>POV4</td>
<td>0.801</td>
<td>0.844</td>
<td>0.642</td>
</tr>
<tr>
<td></td>
<td>POV6</td>
<td>0.791</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Extracted from Measurement Model

Table 2: Discriminant Validity Testing

<table>
<thead>
<tr>
<th>EMP</th>
<th>HCD</th>
<th>INC</th>
<th>INN</th>
<th>POV</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMP</td>
<td>0.797</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCD</td>
<td>0.509</td>
<td>0.823</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INC</td>
<td>0.203</td>
<td>0.502</td>
<td>0.905</td>
<td></td>
</tr>
<tr>
<td>INN</td>
<td>0.365</td>
<td>0.544</td>
<td>0.353</td>
<td>0.800</td>
</tr>
<tr>
<td>POV</td>
<td>0.421</td>
<td>0.591</td>
<td>0.456</td>
<td>0.480</td>
</tr>
</tbody>
</table>

To test the discriminant validity based on Fornell-Larker criterion, the AVE square root occurs in diagonal cells and correlations shows below it. The criterion suggests that if the number at the top (i.e. the square root of AVE) in any factor column is larger when compare to the numbers...
(correlations) below it, the discriminant validity is established (Chin, 1998). Thus, as indicated in Table 2, the top numbers in all the factor column are higher the numbers below it, this confirm the discriminant validity.

**Structural Equation Modelling Result**

After the measurement model has been successfully assessed, the structural paths test in the model has been done by employing PLS. All the responses gathered from the survey were used to develop a sample which has been adopted in the testing of hypothesis identified. In order to estimate the significance of the of the path coefficient, a bootstrapping technique was adopted at 5% significance level with one tailed T-test. The result of the bootstrapping estimates the normality of data. The bootstrap output is presented in Table 3.

Table 3: Results of PLS SEM on the Impact of SMEs on Multidimensional Poverty in Niger State, Nigeria

| Paths | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P-Values |
|-------|---------------------|-----------------|---------------------------|--------------------------|----------|
| H1: EMP -> POV | 0.154 | 0.149 | 0.049 | 3.168 | 0.002 |
| H2: HCD -> POV | 0.311 | 0.308 | 0.071 | 4.411 | 0.001 |
| H3: INC -> POV | 0.203 | 0.194 | 0.045 | 4.488 | 0.001 |
| H4: INN -> POV | 0.183 | 0.179 | 0.043 | 4.231 | 0.001 |

R² = 0.43
R² Adjusted = 0.42

Note: EMP = Employment, HDC = Human Capital Development, INC = Income, POV = Poverty Alleviation

After the path coefficient for the inner model has been reviewed, the outer model can be explored by examining the T-statistics in the outer loadings (i.e. Mean, STDEV, T-Values) window. In accordance with what is presented in Table 3, the all T-Statistics are greater than 1.96, the result shows that the outer loadings are greatly significance. These findings supported H1, H2, H3 and H4 that were formulated earlier in the course of this study, that there is significant positive relationship between SMEs activities (employment, innovation, human capital development and income) and poverty reduction. This is also in conformity with previous studies such as Kostka et al. (2013); Oba and Onuoha (2013); Olughur (2015); Udu (2015); Asikhia (2016); Pansera and Martinez (2016); Ikupolati et al. (2017) and Okpachu (2018). The coefficient of determination (R²) for the structural model is 0.43 indicating that 43% of the variance in poverty alleviation is explain by the model. PLS-SEM output is shown in Figure 3.
Conclusion
The paper introduced an empirical study on multidimensional poverty seen from the view point of SMEs activities. The second generation causal modelling procedure was applied in this paper to analyses the relationship between SMEs and multidimensional poverty. Thus, we proposed a model that explains the previous circumstances of reducing poverty. Our paper depicts that, the all sets of hypotheses that make up the model, are validated in our sample, showing the existence of positive relationship between multidimensional poverty on one side, and SMEs activities on the other.
Practically, these inferences suggest that the poor were able to minimally earn a living with their engagement with SMEs activities of employment, Human capital development, income and innovation.

Meanwhile, this study is mainly based on these four SMEs activities; the findings of this paper are valid for these four activities only. Besides these four SMEs activities, there are others and for which the outcome of this paper is not extended to them. Anyhow, the modelling technique used in this paper could be applied to other SMEs activities. For future research, an improvement in the measurement model to overcome the highlighted limitations may makes the outcome to be generalize to other SMEs activities in order to develop a theory of poverty reduction.

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Reference


