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The Determinants of Micro, Small and Medium Enterprises’ (MSMEs) Performance in Nigeria: Evidence from Business Enterprise Survey

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Abstract

In this paper, we provide new evidence on the determinants of business enterprise performance by combining the structure conduct performance, efficiency structure and business environment factors. In particular, we focus on the major determining factors of MSMEs performance in Nigeria. We further account for possible regional variation in MSMEs performance using a cross sectional Ordinary Least Squares (OLS) with fixed effects. The latest 2014 World Bank Enterprise Survey (WBES) data for Nigeria was used and the results obtained shows that skilled labor, capital intensity, age, size, foreign ownership, percentage of export, research & development as well as bribe payment have a positive impact on MSMEs performance. Although, bribe payment is positive, it is not significant to MSME performance. This is because bribery does not translate to outright performance, rather it is a form of illegal extortion from MSMEs by government officials in order to allow them remain in business. On the other hand, the study found degree of competition, poor electricity supply, high insecurity and difficulty in accessing finance as major setbacks to MSMEs performance in Nigeria. While we found skilled labor, age of enterprise and size to contribute significantly to MSMEs performance, contrary to some findings in the literature, we found capital intensity, foreign ownership, firm’s export, bribe payment, research & development, degree of competition, outage intensity, insecurity and difficulty in obtaining finance to be insignificant to MSMEs performance in Nigeria.

Keywords: MSMEs, Performance, Enterprise survey, Regional effect, Nigeria

JEL Classification: L25, L26, N87
1.0 Introduction

Recently, studies on the determinants of Micro, Small and Medium Enterprises (MSMEs)\(^1\) performance is gradually gaining traction in the field of industrial and strategic management literatures\(^2\). This is because the performance of Micro, Small and Medium Enterprises (MSMEs hereafter) is particularly linked to economic transformation and sustainable development of any nation (Soderbom & Teal, 2002). A strong MSMEs sector promotes innovation and investment opportunities which in turn facilitate employment generation and sustainable growth in Gross Domestic Product (GDP hereafter) of an economy (World Bank, 2013; Jegadeshwari & Velmurugan 2017; Ogbeide & Adeboje 2017).

Globally, MSMEs accounts for over 50% of GDP and 75% of new jobs created (World Bank 2015). In developing countries, MSMEs have been adjudged to be responsible for about 50% of their GDP and over 60% of employment generation (World Bank, 2015). With respect to developed economies, the narration is not different. It is said to be responsible for about 60-70% of the total employment created and over 55% of the GDP in the developed world (Evbuomwan et al., 2016).\(^3\) In spite of these huge contributions of MSMEs globally, empirical evidences however, have shown that MSMEs in Nigeria have performed below their peers in many developing countries (Evbuomwan et al., 2016).

Notwithstanding, the overwhelming evidences of the importance of MSMEs in achieving sustainable development, there is no consensus in the theoretical literature on what generally constitute the determinants of MSMEs performance in an economy. As a result this has continued to generate an unending debate on the subject. Following our investigation into the theoretical literature we observed that, there are basically three views that lend credence to the performance of MSMEs across the global economy. The first school of thought argued that the market structure a business enterprise operate in, largely determines its performance. Studies within this framework focuses on market concentration, firm age, firm size, foreign ownership, capital intensive nature of the enterprise, the degree of competition among others (see Schumpeter, 1976; Acs & Audretsch, 1987; Evanoff & Fortier, 1988; Lloyd-Williams et al, 1994). The second school of thought believed that some MSMEs perform better because of their superiority in managing the available human and material resources at their

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1 MSMEs are those business enterprises that employs 199 or fewer workers. Within the MSMEs category, micro enterprises employ not more than 10 workers; small enterprises ranges from 11 to 49 workers; while the medium enterprises consist of employees between 50 and 199 (SMEDAN, 2013).

2 See for example, (Purwanto and Wijaya, 2016; Shibia and Barako, 2017; Ssempala and James, 2018)

3 Other contributions of MSMEs include: improvement in standard of living, Gross Domestic Product (GDP) and government revenue through various forms of taxes and business levies (Aminu & Shariif 2015; Okafor, 2017; Obi et al. 2018).
disposal. An enterprise superiority could emanate from its innovations, capital intensity, research and development among others (see Demsetz, 1973; Goldberg & Rai, 1996; Makhija, 2003; Samad, 2008). Whereas the third school of thought opined that the business environment an enterprise operates in, largely determines its performance (see Soehadi, 2001; Dollar, Hallward-Driemeier, & Mengistae, 2005). The lack of a consensus on this topic, echoes a number of factors as theory cannot provide a conclusive guidance as to which factors affect the performance of MSMEs in developing countries especially in a heterogeneous society like Nigeria.

Also, government in the past have made several efforts through various reforms to enhance the performance of MSMEs sector in Nigeria, the sector is however, yet to attain its full potentials. This could be due to poor infrastructures; difficulty in obtaining finance; high level of insecurity, multiple taxation, poor transportation and communication network among others. According to WBES (2014) difficulty in obtaining finance, electricity outages and corruption are the major obstacles to firm performance in Nigeria. Specifically, the survey revealed that about 30.2% of business enterprises in Nigeria mostly MSMEs reported to have difficulty in obtaining finance for their businesses; about 27.2% of the firms, experience frequent electricity outages; while about 12.7% of firms offer bribes to public officials to remain in business. Therefore, the aim of this paper is to explore the factors that mainly drives the performance of MSMEs in Nigeria in order to guide policy makers in their actions to offering better support to MSMEs. To achieve this objective, the study carefully examined the three lines of argument advanced by the various school of thoughts in the literature which is a major deviation from past empirical studies. Also, investigating the determinants of MSMEs performance in Nigeria is of great significance to policy makers and funding partners in the MSMEs sector.

This paper contributes to the vast amounts of literature in industrial organization and strategic management in the following ways: (i) this paper to the best of our knowledge, is the first to strictly investigate the determinants of MSMEs performance in Nigeria; (ii) in addition, we account for regional effects in our model. Accounting for these effects is very essential given the heterogeneous nature of the Nigerian society (see Okafor, 2017) and (iii) lastly this study used the most recent 2014 business enterprise survey for Nigeria. This survey includes questions and data information from firms with respect to research & development; cost of providing security around business premises among others. Notwithstanding the relevance of these variables to business enterprise
performance, they were however, not captured by past studies on business enterprise in Nigeria due to inadequate data information on these variables from past business enterprise surveys conducted for Nigeria (see Okafor, 2017). Therefore, given the importance of research & development in an enterprise; and the rising rate of insecurity in Nigeria, excluding these variables when estimating the determinants of business performance, will give a false and inconsistent estimate about the true performance of business enterprises in Nigeria. Thus, including these variables becomes very essential in our study.

The rest of the paper is structured as follows: Section 2 gives brief stylized facts about MSMEs in Nigeria. Section 3 discusses the empirical literature on the determinants of MSMEs performance. Section 4 presents the model and variables description. Section 5 deals with the preliminary data analysis and discussion of results while Section 6 contains the conclusion and recommendations.

2.0 Stylized Facts about MSMEs in Nigeria

MSMEs in Nigeria have contributed about 48.47% to total GDP and 84.02% to employment generation. This is possible because MSMEs constitutes over 80% of the total business enterprises in Nigeria. Most of which are in the education, wholesale and retail sectors. Out of these businesses, the education sector dominates the small and medium enterprises sections with about 32.85% and 66.04% respectively. While the wholesale and retail businesses overshadow other sectors in the micro enterprise segment (NBS, 2013).

Following the global economic meltdown in the 1980s largely triggered by fall in crude oil price, the Nigerian government adopted the Structural Adjustment Programme (SAP)\(^4\) to cushion the effect of its declining revenue in order to promote inclusive growth and development of the economy (Evbuomwan et al., 2016; Ogbeide & Adeboje 2017). Ever since the adoption of the Structural Adjustment Programme (SAP hereafter) in 1986 by the government, there has been a gradual shift of emphasis from a large scale agricultural and industrial oriented production to MSMEs in Nigeria (Evbuomwan et al., 2016). This is because MSMEs was a major component of the SAP reform, aimed at stimulating a rapid economic recovery from the global financial crises (Ogbeide & Adeboje 2017). MSMEs was the major crux of the reform because of their capacity to cope with rapid policy changes especially during economic downturn. In addition, they easily adapt under difficult and challenging situations than larger enterprises due

\(^4\) A policy reforms imposed by the World Bank and International Monetary Fund (IMF) as a pre-requisite for granting loans to countries that are experiencing economic crises. The major reforms of the policy include: interest rate liberalization and privatization of government owned corporations (Ogbeide & Adeboje 2017).
to their low capital intensity (Adebusuyi, 1997; Olorunshola, 2003; Evbuomwan et al., 2016).

Also, successive governments in the past two decades or so have made several efforts to revive the MSMEs sector through various reforms which led to the creation of Small and Medium Enterprises Development Agency of Nigeria (SMEDAN); National Enterprise Development Program (NEDEP); MSMEs national and state councils; Youth Enterprise with Innovation in Nigeria (YOUWIN); the revised national MSMEs policy; and other counterparts funding access of the Central Bank of Nigeria (CBN) and Development Banks (NBS, 2013). Many efforts are going on concurrently within the last twelve years to boost this sector of the economy, starting from the creation of an Agency solely responsible for the promotion and development of this sector SMEDAN, implementation of the NEDEP (National Enterprise Development Program), creation of the MSME national and state councils, Youth Enterprise with Innovation in Nigeria (YOUWIN), the revised National MSME Policy and other funding access of the Central Bank of Nigeria and development banks (NBS, 2013).

Despite all these efforts by the government in the past two decades or so, MSMEs in Nigeria unlike their counterparts in the developed countries, have underperformed below their potentials. This is largely due to poor infrastructures; difficulty in obtaining finance; high level of insecurity, multiple taxation, poor transportation and communication network among others. Among these factors difficulty in obtaining finance, electricity outages and corruption are ranked as the top three major impediments to MSMEs performance in Nigeria as shown in figure 1 below. In particular, the survey revealed that about 30.2% of business firms in Nigeria mostly MSMEs reported to have difficulty in obtaining finance for their businesses while about 27.2% of the business enterprises reported that poor electricity is a severe obstacle to their business operations. With reference to corruption about 12.7% of the firms indicated that it is a major obstacle to their businesses. However, obstacles such as tax rates, transportation,
political instability, informal sector, access to land, trade regulations and tax administration posed little threat to MSMEs performance in Nigeria (WBES, 2014).

With respect to firm size, the survey revealed that, difficulty in accessing finance, electricity outages and corruption are the most severe obstacles to business enterprise in Nigeria. For Micro Small and Medium Enterprises (MSMEs), the survey reported that difficulty in obtaining finance was a major obstacle to business operations, followed by electricity outages and corruption. In the case of large firms, poor electricity supply has been reported to be the most severe factor affecting their performance while the effect of corruption and inadequate access to finance is seen as less severe on large firms’ performance in Nigeria (WBES, 2014).

3.0 Empirical Literature Review

Two major hypotheses [the Efficient Structure (ES) and the Structure Conduct Performance (SCP)] as well as the business environment factors have been widely
used in the literature relating to the determinant of business enterprise performance (see for example, Fu & Hefferman, 2008; Okafor, 2017).

With reference to efficiency structure hypothesis, most studies in the literature found job training, experiences, human capital, innovation and Research & Development (R & D hereafter) to have a positive and significant impact on business enterprise performance (see for example, Carpenter et al., 2001; Hitt et al., 2001; Hall & Bagchi-Sen, 2002; Bryan, 2006). In a little contrast, Honig (2001) in his study found human capital to have an insignificant impact on the performance of large enterprise when apposed with MSMEs in West Bank. Similarly, Lin et al., (2006) also discovered that R & D alone does not enhance the performance of a business enterprise.

With regards to structure conduct performance, nearly all the studies on foreign ownership, entry barriers, firm age, firm size and capital intensity reported mixed findings. While studies with respect to foreign ownership and entry barriers reported mixed findings (see Schivardi & Viviano, 2010; Gurbuz & Aybars, 2010), almost all the studies relating to firm age, size and capital intensity reported to have a positive impact on firm performance (see for example, Chuang & Hsu 2004; Anic et al., 2009; Asimakopoulos et al., 2009; Lee, 2009; Schivardi & Viviano 2010; Muritala 2012; Kipesha, 2013; Okafor, 2017; Adewuyi & Emmanuel, 2019) with the exception of Lee and Xiao (2011) and Sattar et al. (2013) which found firm age and capital intensity to have a negative relationship with firm performance.

Besides the ES and SCP factors, the business environment is another major determinant of firm performance around the globe (Okafor, 2017). Studies within this frame work basically focus on the impact of conflict, corruption and poor infrastructure (electricity outages, poor transportation and telecommunication network) on business performance (see for example, Beck et al., 2005; Dollar et al., 2005; Fisman & Svensson, 2007; Ayyagari et al., 2008; De Rosa et al., 2010; Vial & Hanoteau, 2010; Atsush, 2011; Petracco & Schweiger, 2012; Klapper et al., 2013; Pless & Fell, 2017; Adewuyi & Emmanual, 2019). While Fisman and Svensson (2007) and De Rosa et al. (2010) found corruption to have a negative impact on firm performance, the ESC factors and the business environment together contribute significantly to the firm performance.

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5 The efficiency structure hypothesis argues that businesses enterprises perform better due to their superiority in managing the available human and material resources (Samad, 2008; Okafor, 2017). However, the SCP framework posits that the market structure an enterprise operates in largely determines its performance. Studies along this line focuses on foreign ownership, firm age, firm size and degree of competition (see for example, Siripaisalpat & Hoshino, 2000; Viani, 2004; Chuang & Hsu, 2004; Lee, 2009; Muritala 2012). Also, the business environment a firm operates in, to a large extent, affects its performance. Researches within this framework concentrate on corruption, conflict and infrastructure (Dollar et al. 2005; Fisman & Svensson 2007; Klapper et al. 2013).
performance, Vial and Hanoteau (2010) found corruption to have a positive effect on the performance of manufacturing firms in Indonesia. Their study supported the “grease to wheel” hypothesis where manufacturing firms in Indonesia who offers higher bribe, perform better than their counterparts who do not engage in bribery activity. On the other hand, Petracco and Schweiger (2012) and Klapper et al., (2013) investigated the impact of armed conflict on firm performance in Georgia and Cote d’Ivoire respectively. The studies discovered a negative relationship between conflict (which emanates as results of political instability) and firm’s productivity.

Even with the vast amounts of literature on the determinants of MSMEs performance, studies particularly on Nigeria are limited or non-existent at least to the best of our knowledge. As a result, studies on the determinants of MSMEs performance in Nigeria have remained unexplored. Okafor (2017) is the only existing study in the literature that has attempted the investigation of the determinants of firm performance in the Nigerian manufacturing sector. According to his findings, skilled labor force, capital investment, foreign ownership and exports have a positive effect on firms operating in the Nigerian manufacturing sector. In contrast he found poor electricity and difficulty accessing finance to have a negative effect on manufacturing firms in Nigeria. However, our study differs greatly from Okafor (2017) in that we focused on the determinants of MSMEs performance in Nigeria. Our paper concentrates on the factors responsible for the performance of business enterprise (excluding large corporations) in Nigeria. This is because MSMEs constitutes over 80% of the total business enterprises, however, the sector has contributed below average to the economy of Nigeria when compared to other emerging and developing countries.

MSMEs performance in Nigeria over many years, have continued to remain abysmal, in spite of their huge contributions to the global economy as noted in the literature. Although, the Nigerian government at different times have made several efforts to revive the sector through various reforms, this has however not yielded any much positive results. It is against this background that this paper seeks to explore the factors driving MSMEs performance in Nigeria, in order to guide policy makers on how to revive the MSMEs sector.

4.0 Theoretical Framework and Methodology

This study is built on a simple Cobb-Douglas production function by assuming a representative firm i in an industry j operating in a perfectly competitive market
produces output "\(Y_i\)" at time "\(t\)" by employing inputs such as factor productivity "\(A\)", Capital "\(K\)" and Labor "\(L\)" as represented in equation (1) below.

\[
Y_i = f(A_i, K_i^{\beta_1}, L_i^{\beta_2})
\]  

(1)

By modifying the above Cobb-Douglas production function to include other variables from Efficiency Structure (ES) hypothesis, Structure Conduct Performance (SCP) and business environments factors, we obtained equation (2) as specified below.

\[
Y_i = f(A_i, K_i^{\beta_1}, L_i^{\beta_2}, Z_i^\phi)
\]  

(2)

Where "\(Y_i\)" represent output or MSMEs performance; "\(A_i\)" is the factor productivity; \(\beta_1\) and \(\beta_2\) are factors share of Capital "\(K\)" and Labor "\(L\)" respectively; while \(\phi\) represent the factor share of "\(Z_i\)" which account for other determinants of MSMEs performance. These determinants include: degree of competition, firm age, firm size, foreign ownership, R & D, insecurity, corruption, difficulty in obtaining finance, poor electricity supply and percentage of total goods exported. The choice of this approach is based on the fact that MSMEs will always maximize output and profit, given the right combination of factor inputs at their disposal.

To ascertain the impact of the Efficiency Structure (ES) hypothesis, Structure Conduct Performance (SCP) and business environments factors on firm performance, we linearized equation (2) by taking the natural logarithm of all the variables in the model. Thus, we obtain:

\[
\ln Y_i = \ln A_i + \beta_1 \ln K_i + \beta_2 \ln L_i + \phi \ln Z_i + \epsilon_i
\]  

(3)

By representing the log of the variables in a lowercase form and including the regional effects, we obtain equation (4) as specified below.

\[
y_i = a_i + \beta_1 k_i + \beta_2 l_i + \phi_z i + \epsilon_i
\]  

(4)

Expressing equation (4) in an explicit form, we obtain equation (5)

\[
y_i = a_i + \beta_1 k_i + \beta_2 l_i + \phi_1 \text{age}_i + \phi_2 \text{size}_i + \phi_3 \text{r&d}_i + \phi_4 \text{fow}_i + \phi_5 \text{insecurity}_i + \phi_6 \text{bribe}_i + \phi_7 \text{competition}_i + \phi_8 \text{electricity outage}_i + \phi_9 \text{finance}_i + \phi_{10} \text{export}_i + \epsilon_i
\]  

(5)
Equation (5) captures the determinants of MSMEs performance in Nigeria was estimated using a cross sectional Ordinary Least Squares (OLS) technique. 6

In this paper, we used profit and sales revenue to proxy MSMEs performance as against output which has been widely used in the literature. The reason is that profit and sales revenue allow us to easily measure the performance of all kinds of business enterprise including the service sector whose output cannot be measured (see Okafor, 2017; Adewuyi & Emmanuel, 2019).

The capital intensity variable measures the ratio of the amount of money spent in purchasing physical assets to sales revenue. This is because MSMEs that are capital-intensive are viewed to be more profitable due to their superior production techniques which allows them to enjoy lower cost of production per unit (Shaheen & Malik, 2012; Okafor 2017; Adewuyi & Emmanuel, 2019).

Skilled labor measures the percentage of workers with special skills or knowledge in a business enterprise. According to human capital theory, workers with special skills and experiences contribute to increasing the output, revenue and profit of a business enterprise (Bryan, 2006; Adewuyi & Emmanuel, 2019). Also, MSMEs with higher percentage of skilled labor are said to enjoy high economic rent which contribute positively to their performance (see Okafor, 2017; Adewuyi & Emmanuel, 2019).

We measure firm size using the number of employees an enterprise has. Therefore, we assign 1 (one) to micro firms which has less than five employees; 2 (two) to small firms which has between five and nineteen employees; and three to medium enterprises which has between 20 (twenty) and 99 (ninety-nine) employees (WBES, 2014). It is said that medium and large firms have access to opportunities such as quick credit facilities at a lower interest rate as a result of their high bargaining power (Okafor, 2017).

Firm age measures the number of years a firm has been in existence. In this paper, we categorized the firms into two: the older and younger firms. The older firms are said to have existed for a period of at least 10 (ten) years and thus, are more

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6 Where “$Y_i$” is a measure of MSMEs performance proxy by profit and sales revenue; “$a_i$” represent the fixed regional effect for each business enterprise; “$k_i$” represent capital intensity which measures the amount of money invested in physical assets by MSMEs; “$l_i$” is a measure of the percentage of skilled labor employed; “$size_i$” measures firm size; “$age_i$” measures firm age; “$r&d_i$” measures MSMEs innovation, research & development intensity; “$competition_i$” measures the degree of competition in an industry; “$export_i$” represent the percentage of firm’s share of export to total goods produced; “$foreign_i$” measures the percentage of foreign ownership; “electricity outage_i” measures the average number of outage in a typical month a firm goes without electricity supply from the grid; “finance_i” measures the difficulty in obtaining finance by MSMEs; “$insecurity_i$” measures the percentage of sales revenue spent by MSMEs to provide security within their premises; “$bribe_i$” represent informal gift or payment made to electricity officials by MSMEs to mitigate power outages; and finally “$e_i$” represents the error term.
experienced and profitable in tough business environment than the younger firms that existed for a shorter period of time, usually not up to 10 (ten) years.

Research & Development measures the intensity of innovations, research and development intensity which contribute positively to MSMEs performance. Thus, we assign 1 (one) to MSMEs that engage in R & D and 0 (Zero) for otherwise.

The degree of competition measures the perceived degree of competition among business firms in an industry. Using the World Bank enterprise survey criteria, we assign 0 (zero) to imply no competition and 4 (four) to firms that faced intense competition in their industry (Okafor, 2017; Adewuyi & Emmanuel, 2019).

The share of export measures the percentage of firm’s participation in foreign trade. Firms that produced and sell part of their goods at the foreign markets are said to be more exposed to better marketing strategy which they subsequently apply to boost their turnovers and performance compared to their counterparts who only produced and sell to the local markets (Wagner, 2007; Okafor, 2017).

Foreign ownership measures the percentage of foreign ownership or degree of foreign control in a particular enterprise. For example, it is said that MSMEs with a minimum of 10% of foreign control are likely to be more profitable than MSMEs that are completely owned by the local nationals. In this study, we assign a dummy variable of one (1) to firms with at least 10% foreign control and zero (0) otherwise (Halkos & Tzeremes, 2007; Okafor, 2017).

We measure insecurity using the percentage of total annual sales revenue spent on securing an enterprise premises. The amount spent constitute a cost to the business enterprise. Cost of providing this security service has a negative impact on MSMEs performance. Thus, business enterprises that operates in environments that are characterized by frequent political instability, terrorism and theft are bound to spend huge amount of income to providing security within and outside their premises (Adewuyi & Emmanuel, 2019). However, if the opportunity cost of not securing its premises is higher, the enterprise is likely to benefit more and minimize losses that may results from theft of its capital assets or finished goods and services if it invests in security.

Bribery in this context measures the percentage of firm’s sales revenue paid to public officials as bribes to increase their share of electricity supply from the grid.\footnote{High percentage of foreign control and ownership exposes an enterprise to certain special expertise and technical know-how in operation which cut down the cost of production while boosting its performance.}

\footnote{Bribery contribute to raising MSMEs transactions cost, thereby affecting their performance negatively.}
It diverts firm’s scarce resources away from profitable ventures and thereby starving MSMEs the needed funds for expansion in the long run (Okafor, 2017; Adewuyi & Emmanuel, 2019).

Electricity outages proxy by outage intensity measures the average number of outages in a typical month, an enterprise goes without electricity supply from the grid. Thus, MSMEs that experience frequent electricity outages in their premises are likely to make huge losses than their counterparts who have regular electricity supply (Okafor, 2017; Adewuyi & Emmanuel, 2019).

The difficulty in obtaining finance measures the degree of difficulties in accessing credit facilities by MSMEs in Nigeria. It is negatively related to MSMEs performance. Easy access to obtaining finance stimulate investment (Reinikka & Svensson, 2002). According to the theory of corporate finance, a more robust and developed financial sector empowers business firms to access funds for investment and expansion purposes (Beck et al., 2005; Okafor 2017). Using the World Bank Enterprise survey criteria, we assign 0 (zero) to MSMEs that faced no difficulty in accessing finance and 4 (four) to MSMEs that faced intense difficulty in accessing finance for their businesses.

The sample data used in this paper was sourced from the World Bank Enterprise country Survey for Nigeria. The data covers MSMEs sector across 19 major states in Nigeria. The study sample comprises 2676 firms (including large firms). Thereafter a data cleaning exercise was done to ensure large enterpris including MSMEs with missing data and relevant information, were dropped. At the end of the cleaning exercise we obtained observations for 306 MSMEs in Nigeria which were subsequently used to estimate our regression estimates.

5.0 Results and Discussion of Findings

a. Preliminary Results

Table 1 and 2 report the summary statistics and correlation matrix respectively. Interestingly, the summary statistics reveal some facts about the sample data used in this study. The average profit across the sample is $US11, 400,000 and the variation of the profit as indicated by the standard deviation is very high. The perceived degree of competition among MSMEs across the sample is above average. On the other hand, the percentage of skilled manpower and capital intensity across MSMEs are far below average. With reference to obstacles to business operation, difficulty in obtaining finance is a little below average. Also, the percentage of foreign ownership in MSMEs in Nigeria is very low. MSMEs across
the sample experience an average electricity outage of about 144.758 times in a
typical month. The average percentage of goods exported by MSMEs across the
sample is approximately 4.94% which is far below average. Similarly, the number
of MSMEs that invest in research & development across the sample is below

Table 1: Summary Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Dev.</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit $US</td>
<td>11,400,000.000</td>
<td>195,000,000.000</td>
<td>-169,390.900</td>
<td>3,420,000,000.000</td>
</tr>
<tr>
<td>Degree of Competition</td>
<td>1.712</td>
<td>1.456</td>
<td>0.000</td>
<td>4.000</td>
</tr>
<tr>
<td>Percentage of Skilled Labor</td>
<td>3.067</td>
<td>41.001</td>
<td>0.000</td>
<td>100.000</td>
</tr>
<tr>
<td>Capital Intensity</td>
<td>0.632</td>
<td>3.611</td>
<td>0.000</td>
<td>50.000</td>
</tr>
<tr>
<td>Age (years)</td>
<td>15.438</td>
<td>9.576</td>
<td>2.000</td>
<td>61.000</td>
</tr>
<tr>
<td>Size</td>
<td>1.173</td>
<td>0.572</td>
<td>0.000</td>
<td>2.000</td>
</tr>
<tr>
<td>Percentage of Foreign Ownership</td>
<td>2.908</td>
<td>13.040</td>
<td>0.000</td>
<td>100.000</td>
</tr>
<tr>
<td>Outage Intensity</td>
<td>144.758</td>
<td>286.107</td>
<td>30.000</td>
<td>2000.000</td>
</tr>
<tr>
<td>Export (% of total goods sold)</td>
<td>4.935</td>
<td>14.898</td>
<td>0.000</td>
<td>100.000</td>
</tr>
<tr>
<td>Research &amp; Development(Yes=1;No=0)</td>
<td>0.157</td>
<td>0.364</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Insecurity (% of sales on security)</td>
<td>4.726</td>
<td>7.137</td>
<td>0.000</td>
<td>60.000</td>
</tr>
<tr>
<td>Bribery (% of sales paid as bribe)</td>
<td>3.690</td>
<td>10.330</td>
<td>0.000</td>
<td>100.000</td>
</tr>
<tr>
<td>Difficulty in Accessing Finance</td>
<td>1.644</td>
<td>1.323</td>
<td>0.000</td>
<td>4.000</td>
</tr>
</tbody>
</table>

Competition (scale of 0-4 with 0 meaning no competition, and 4 meaning very intense competition); Size (scale of 0-3 with 0 meaning micro enterprise with less than 5 employees; 1 meaning small enterprise with employees between 5 and 19; and 2 is assigned to medium enterprise with employees' between 20 and 99); Access to Finance on a scale of 0-4 with 0 meaning not an obstacle to business operation and 4 meaning very severe obstacle to business operation.

Source: Authors’ Computation from World Bank Enterprise Survey, 2014

average. The average age of MSMEs in the sample is 15 years. While the
youngest enterprise is 2 years, the oldest enterprise is 61 years. On average
MSMEs spend about 4.73% of their sales revenue to secure their premises.
In addition, government officials extort approximately 3.69% from MSMEs
total sales revenue.
Lastly, the correlation matrix results reveal low multicollinearity between the variables used in the analysis.

**Table 2: Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Profit $US</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Degree of Competition</td>
<td>-0.029</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Percentage of Skilled Labor</td>
<td>0.097</td>
<td>0.133</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Capital Intensity</td>
<td>-0.010</td>
<td>0.073</td>
<td>-0.014</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Age</td>
<td>0.040</td>
<td>0.0100</td>
<td>-0.101</td>
<td>0.057</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Size</td>
<td>-0.016</td>
<td>0.040</td>
<td>0.010</td>
<td>0.067</td>
<td>0.179</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Percentage of Foreign Ownership</td>
<td>-0.013</td>
<td>-0.061</td>
<td>-0.082</td>
<td>-0.012</td>
<td>-0.020</td>
<td>0.060</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Outage Intensity</td>
<td>0.0790</td>
<td>-0.005</td>
<td>-0.042</td>
<td>0.047</td>
<td>-0.054</td>
<td>-0.035</td>
<td>0.040</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Export (% of total goods sold)</td>
<td>-0.019</td>
<td>-0.141</td>
<td>-0.060</td>
<td>-0.027</td>
<td>0.062</td>
<td>0.030</td>
<td>0.237</td>
<td>0.077</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Research &amp; Development</td>
<td>-0.025</td>
<td>-0.032</td>
<td>-0.045</td>
<td>-0.052</td>
<td>0.072</td>
<td>0.058</td>
<td>0.069</td>
<td>-0.010</td>
<td>0.126</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Insecurity (% of sales on security)</td>
<td>-0.038</td>
<td>-0.036</td>
<td>0.019</td>
<td>-0.017</td>
<td>-0.033</td>
<td>0.101</td>
<td>0.009</td>
<td>0.018</td>
<td>0.060</td>
<td>0.154</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Bribery (% of sales paid as bribe)</td>
<td>-0.021</td>
<td>0.031</td>
<td>0.013</td>
<td>-0.054</td>
<td>-0.109</td>
<td>-0.004</td>
<td>0.020</td>
<td>0.075</td>
<td>0.058</td>
<td>0.107</td>
<td>-0.043</td>
<td>1.000</td>
</tr>
<tr>
<td>13</td>
<td>Difficulty in Accessing Finance</td>
<td>0.058</td>
<td>0.170</td>
<td>-0.137</td>
<td>-0.029</td>
<td>0.163</td>
<td>-0.169</td>
<td>-0.077</td>
<td>0.058</td>
<td>-0.149</td>
<td>0.008</td>
<td>0.050</td>
<td>0.067</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation from World Bank Enterprise Survey, 2014

**b. Results and Discussion of Findings**

This paper employed a cross sectional Ordinary Least Squares (OLS) to estimate the determinants of MSMEs performance in Nigeria. In addition, we included regional effects to account for regional heterogeneity between MSMEs in the sample. On the other hand, we excluded industry effects from our regression model due to its insignificant impact on MSMEs performance.

Equation (5) which captures the determinants of MSMEs performance in Nigeria was estimated and the results are displayed in Table 3 below. Some of the findings are consistent with previous literature. The results in Table 3 show that skilled labor, capital intensity, age, size, foreign ownership, percentage of export, research & development of MSMEs have a positive impact on their financial performance. The positive relationship between skilled labor and MSMEs performance in Nigeria, supports the hypothesis that quality manpower increases the
output and economic value of a business enterprise. Although, most MSMEs in Nigeria are not rich in skilled manpower,
Table 3: OLS Regression Output with Regional Effects

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable: log Profit</th>
<th>Estimated Coefficient</th>
<th>Estimated Marginal Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td></td>
</tr>
<tr>
<td>Degree of Competition</td>
<td>-0.088 (0.092)</td>
<td>-0.151 (0.158)</td>
<td></td>
</tr>
<tr>
<td>Percentage of Skilled Labor</td>
<td>0.012*** (0.003)</td>
<td>0.037*** (0.009)</td>
<td></td>
</tr>
<tr>
<td>Capital Intensity</td>
<td>0.042 (0.038)</td>
<td>0.027 (0.024)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.027* (0.015)</td>
<td>0.417* (0.232)</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>0.645*** (0.238)</td>
<td>0.757*** (0.279)</td>
<td></td>
</tr>
<tr>
<td>Percentage of Foreign Ownership</td>
<td>0.001 (0.010)</td>
<td>0.003 (0.029)</td>
<td></td>
</tr>
<tr>
<td>Outage Intensity</td>
<td>-0.001 (0.004)</td>
<td>-0.145 (0.579)</td>
<td></td>
</tr>
<tr>
<td>Export (% of total goods sold)</td>
<td>0.006 (0.009)</td>
<td>0.030 (0.044)</td>
<td></td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td>0.113 (0.370)</td>
<td>0.018 (0.058)</td>
<td></td>
</tr>
<tr>
<td>Insecurity (% of sales on security)</td>
<td>-0.028 (0.019)</td>
<td>-0.132 (0.090)</td>
<td></td>
</tr>
<tr>
<td>Bribery (% of sales paid as bribe)</td>
<td>0.006 (0.013)</td>
<td>0.022 (0.048)</td>
<td></td>
</tr>
<tr>
<td>Difficulty in Accessing Finance</td>
<td>-0.058 (0.107)</td>
<td>-0.095 (0.176)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>8.185*** (0.434)</td>
<td>8.185*** (0.434)</td>
<td></td>
</tr>
<tr>
<td>No of Observations</td>
<td>306</td>
<td>306</td>
<td></td>
</tr>
<tr>
<td>F-Stat</td>
<td>2.87***</td>
<td>2.87***</td>
<td></td>
</tr>
<tr>
<td>Prob. &gt; F</td>
<td>0.0010</td>
<td>0.0010</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.1132</td>
<td>0.1132</td>
<td></td>
</tr>
<tr>
<td>VIF</td>
<td>1.128</td>
<td>1.128</td>
<td></td>
</tr>
<tr>
<td>Ramsey RESET Test</td>
<td>0.86</td>
<td>0.86</td>
<td></td>
</tr>
</tbody>
</table>

Note: The values reported in parenthesis are standard errors while ***, **, and * indicate the rejection of the null hypothesis at 1%, 5% and 10%, level of significance respectively.

Source: Authors' Computation from World Bank Enterprise Survey, 2014

The results of the coefficient of skilled labor reveal that it is significant to MSMEs performance. This suggests that the few MSMEs that are rich in skilled labor will benefit greatly. Capital intensity is positive but insignificant to MSMEs performance. This shows that MSMEs in Nigeria are less capital intensive. The
reason could be due to the following. First, the cost of acquiring and maintaining capital assets in relation to labor cost in Nigeria is very high. Second, the level of skills and efficiency required by MSMEs to deploy this capital equipment is below average. The positive relationship between the age of an enterprise and financial performance, supports the argument that experience largely determines MSMEs performance. Young firms lack the experience and strategy to cope with harsh business realities in Nigeria as compared to their older counterparts. This could be due to capital constraint, resource deficiency and poor knowledge of the business environment. The relationship between size and MSMEs performance is positively significant. This is consistent with theory which argues that large enterprise enjoys huge economics of scale and has the capacity to access finance through the capital market. The relationship between foreign ownership and MSMEs performance is also positive but insignificant. The positive relationship suggests that business enterprises with larger share of foreign ownership have superior skills and technology which enhances their performance. This is because business enterprises with foreign affiliations have easy access to better production and marketing techniques which might have enabled them to perform better than their local counterparts in the sample. The coefficient of export is positively insignificant to MSMEs performance in the sample. The positive relationship shows the contribution of foreign exchange earnings to MSMEs performance in Nigeria. However, the contribution is insignificant. This could be due to the fact that most MSMEs in Nigeria barely export their finished goods and services to the outside world. The relationship between research & development and MSMEs performance in Nigeria is positive but insignificant. This suggests that research & development contributes to enhancing MSMEs performance. Nonetheless, most MSMEs in the sample, barely invest in research & development activities in their respective enterprises which is evident in their poor financial performance.

Results of other determinants indicate that bribery is positive but insignificant to MSMEs performance in Nigeria. Interestingly, this might not be surprising, considering the Nigerian business climate. This suggests the fact that most MSMEs in the sample pay bribe to government officials to remain in business. However, the bribe payment does not automatically translate to better business performance, because it is a form of an indirect tax or cost to the business enterprise.

On the other hand, the degree of competition, outage intensity, insecurity and difficulty in accessing finance have negative impact on MSMEs performance in Nigeria. The perceived degree of competition among MSMEs in Nigeria is
negatively insignificant to their financial performance. The negative relationship suggests the facts that MSMEs in Nigeria cannot raise their prices at will, especially above the competitive level. The insignificant relationship could be due to the facts that MSMEs in Nigeria especially the medium enterprises have the resources to differentiate their products and services from their competitors. Therefore, might not be affected by competition within their industry when compared to micro and smaller firms.

The results of outage intensity variable reveal that electricity outage is negatively insignificant to MSMEs performance in the sample. Although, most of the MSMEs in the sample reported that poor electricity supply is a major setback to their business operations, the insignificant relationship, suggests the facts that most business enterprises self-generate electricity during outage hours. However, this often comes with an extra cost to the enterprise because alternative sources of electricity are very expensive.

Similarly, the coefficient of the security variable is negatively insignificant to MSMEs performance in Nigeria. This is because the amount spent on security constitute a cost to the business enterprise and the cost of providing this security service has a negative impact on MSMEs performance. The insignificant relationship could be due to the facts that most MSMEs in the sample are located in environments that are free from terrorist and arm robbery activities. As a result, they are likely to spend less finances in securing their premises.

Finally, with regards to the difficulty in obtaining finance, we also found the relationship to be negative and insignificant to MSMEs performance in Nigeria. The negative relationship is not surprising considering that the Nigerian financial market is weak and is characterized by a large percentage of informal activities done outside the banking system. As a result, financial institutions are starved of the necessary savings and funds to lend to MSMEs. Also, the difficulty faced by MSMEs in obtaining finance, have been further worsened due to crowding out effect of private investment caused by excessive government borrowing. Government deficit spending contribute to raising the level of interest rate in the economy thereby making it difficult for MSMEs to access finances needed to procure modern equipment and technology to expand their production capacity.

**c. Robustness Check**

To test for consistency in the parameters of our regression estimates, we used the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity; Ramsey RESET test for
model specification and Variance Inflation Factor (VIF). The Breusch-Pagan/Cook-Weisberg test for heteroskedasticity supports the null hypothesis that there is no heteroskedasticity in our regression estimates, since there is exist a zero correlation between the error term and the explanatory variables in the model (E(ε/x= 0). The Ramsey RESET (Specification Error) test results suggests that the null hypothesis of no specification error is upheld and therefore we conclude that our regression model was correctly specified. Finally, the VIF results confirms the presence of low collinearity which can be tolerated in the regression model.

6.0 Conclusion and Recommendations

In this paper, we investigated the determinants of MSMEs performance in Nigeria using the 2014 World Bank Enterprise Survey (WBES) for Nigeria. The theoretical framework for this study is rooted in the simple Cobb-Douglas production function. We combined the variables from business environment; efficiency and structure conduct performance hypotheses to estimate the determinants of MSMEs performance in Nigeria. Using a cross sectional OLS technique with fixed effects, the study found skilled labor, capital intensity, age, size, foreign ownership, percentage of export, R & D and bribe payment to have a positive impact on MSMEs performance in Nigeria. On the hand, the study also found degree of competition, outage intensity, the level of insecurity and difficulty in accessing finance to have a negative impact on MSMEs performance in Nigeria. While skilled labor, age and size of an enterprise were found to be significant to MSMEs performance in Nigeria, the study also found capital intensity, foreign ownership, firm’s export, bribe payment, research & development, degree of competition, outage intensity, insecurity and difficulty in obtaining finance to be insignificant to MSMEs performance in Nigeria. Thus, looking at the role of MSMEs in employment creation and sustainable development of any economy, it is essential to highlight some policy recommendations from these findings.

Firstly, credible business reforms should be put in place by the government at all levels to facilitate ease of doing business and to minimize extortions from MSMEs by public officials. Some of these reforms should include but not limited to mitigating the bureaucratic processes involved in collecting taxes, business permits, and customs duties. Mitigating these forms of indirect taxes will not only attract foreign direct investors into the country, but also will encourage existing ones who will rather prefer to leave the country than pay bribe to government officials. For example, it was reported that Procter & Gamble chose to shut down its pampers plant in Nigeria many years ago, rather than offer bribe to Custom officials (see Doh et al., 2003; Okafor, 2017). Secondly, financial institutions should
be encouraged to provide micro credits and loans to genuine MSMEs at a lower interest rate with flexible repayment plan. In addition, government at all level should be prudent in their spending to minimize borrowings so as not to crowd out private investment. Thirdly, governments at all levels should invest massively in renewable energy which is eco-friendly and cheaper. As this will make electricity supply available at the lowest possible cost to MSMEs residing both in urban and rural areas. Fourthly, the quality of human capital should be improved. Stakeholders in the MSMEs sector such as the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), Central Bank of Nigeria (CBN), Development Bank of Nigeria (DBN), World Bank, Bank of Industry (BOI), Non-Governmental Organizations (NGOs) among others should not only provide finances to MSMEs but also provide regular education and training to MSME owners and their employees on new skills and technology to enhance their performance. Also, MSMEs can also take the initiatives by regularly supporting and encouraging constant training and skill advancement of their employees in order to boost their productivity. Furthermore, government should make effort towards improving the business climate in Nigeria, in order to make it conducive for foreign investors. This is because their presence and association with local investors, can help facilitate easy access to foreign technology and techniques of production. Lastly, government should make huge efforts to address the growing rate of insecurity across the length and breadth of Nigeria. The regular training of security personnel on the current security challenges facing the country should be given a high priority. Addressing these challenges will restore confidence on both the local and foreign investors on the safety of their lives and business enterprises.

The investigation of the determinants of MSMEs performance in Nigeria, offers a few directions for future research. First, future research should seek to ascertain the determinants of MSMEs performance in Nigeria on a regional basis. A regional study should be carried out to account for the variation in factors such as security challenges, electricity supply among others. On a final note, future research could also decompose Micro, Small and Medium Enterprises (MSMEs) and investigate their determinants separately. A separate study for each form of enterprise will help to isolate the effect of size on business performance.
References


