

The effects of subcontracting forms on the sustenance of SMEs

A panacea for sustainable development goals (SDGs) in Enugu State Nigeria

Victor Chukwunweike Nwokocha

Department of Geography, University of Nigeria, Enugu, Nigeria, and

Christopher Nwankwo

Department of Economics, University of Nigeria, Enugu, Nigeria

The effects of subcontracting forms

293

Received 22 January 2019
Revised 26 May 2019
Accepted 29 May 2019

Abstract

Purpose – Despite the potential of SMEs in economic development, their activities have remained largely unsustainable in Nigeria. These enterprises are constrained by a number of challenges- high cost of production, poor power supply, high infrastructural deficit etc. which have made their operations largely unproductive. The purpose of this paper is to examine the effects of production subcontracting forms on the sustenance of small and medium enterprises as a panacea for achieving the targets of goal 8 of sustainable development goals (SDGs) in Enugu State, Nigeria.

Design/methodology/approach – The paper adopted a number of methods comprising of field observations, a reference to relevant literature and a questionnaire survey of 96 SMEs. The paper also adopted a quantitative approach comprising of simple descriptive statistics of mean and standard deviation as well as regression analysis to analyze the data.

Findings – This paper found that the three forms of production subcontracting (supplier, specialized and capacity subcontracting) identified in the paper were used by SMEs to achieve sustenance (cost reduction, risk reduction and access to resources) in their operations. The paper suggests that the sustenance of SMEs through the utilisation of the different forms of subcontracting can become a strategy towards achieving the targets of SDG 8 in Nigeria.

Practical implications – This paper has shown that the prevalent high cost of production and ever-increasing production risks, which are the common features of SMEs in Nigeria, can be mitigated through the various forms of production subcontracting analysed in this paper. SMEs, through seminars, workshops, entrepreneurship and business fairs, can be encouraged to take up this strategy, considering its ability to address their various operational bottlenecks.

Originality/value – This study adds to the limited available evidence concerning the effects of subcontracting forms on the sustenance of SMEs in Nigeria. This study is the first to consider subcontracting forms and how they have led to sustenance SMEs in Nigeria.

Keywords Nigeria, SMEs, SDGs, Sustenance, Production subcontracting

Paper type Case study

Introduction

Nigeria has been classified as the poverty capital of the world with 86.9m people living under extreme poverty (World Poverty Clock, 2018) as well as an unemployment rate of 18.8 per cent, i.e. over 16 m Nigerians are out of jobs (Kale and Doguwa, 2015). Despite the potentials of SMEs in economic development (job creation, poverty reduction, economic growth and development, income and revenue generation, etc.), their activities have remained largely unsustainable. SMEs in Nigeria and Africa, as a whole, are constrained by a number of physical and socioeconomic challenges. Some of these challenges are high interest rates, high cost of production, poor access to resources, high risk, among others. Given the potentials of SMEs in achieving the targets of sustainable development goals (SDGs) 8 – attaining a sustained, inclusive and sustainable economic growth, achieving full and productive employment as well as decent work for all in the year 2020 – it has become very important for the challenges constraining the development of this sector to be addressed.



To address these constraints, this paper examined the use and adoption of flexible structures, such as production subcontracting, as a viable and cost-effective strategy of sustaining the operations of SMEs in Nigeria. Production subcontracting, which is the focus of this paper, is the breakdown of production process into smaller units or parts in which individual units are handled by other independent firms (Ajayi, 2003). In this system, firms perform different tasks in a chain of production, leading to the de-concentration of production processes over space. In view of this, Ceglie and Dini (1999), opined that on the account of the common problems firms all share, SMEs are in the best position to help each other. They can do this through horizontal cooperation (they can collectively achieve economies of scale), vertical cooperation (they can specialize in their core activities and develop the external division of labor) and networking among enterprises.

Production subcontracting strategy can be utilised in three forms (Kim and Hemmert, 2016; Kafigi, 2015; Kongmanila and Takahashib, 2009). They are capacity subcontracting, specialised subcontracting and supplier subcontracting. The utilisation of these various forms of production subcontracting by SMEs ensures the de-concentration of production processes, increased cooperation with other SMEs, resource accessibility, knowledge accessibility, cost and risk reductions. Thus, to achieve the targets of SDGs "8", especially the area of providing full and productive employment as well as decent work in the year 2020, this paper argues that the sustenance of SMEs through the different forms of production subcontracting is key. In this paper, we define "Sustenance" as the ability of SMEs to achieve cost reduction, risk reduction, resource and knowledge accessibility. Consequently, this paper intends to answer the following question:

- (1) Does the likelihood of accessing resources, knowledge, reducing both risk and cost of production depend on the production subcontracting forms – capacity subcontracting, specialised subcontracting and supplier subcontracting formed by partnering firms?
- (2) What is the relationship between subcontracting forms and the sustenance of SMEs?

The SDGs, also known as the 2030 Agenda, are a collection of 17 global goals set by the United Nations to be achieved both in the developed and developing world by 2030. Even though the goals are interrelated, each has its own targets, which are generally geared towards addressing socioeconomic and development issues such as poverty, hunger, economic growth, employment, etc. Goal "8" of the SDGs has the target of promoting sustained and inclusive economic growth, full and productive employment and decent work for all. While sustainable economic growth involves creating the conditions that give people the opportunity to gain quality employment, which propels the growth and development of economies, full and productive employment involves creating employment opportunities with decent working conditions for the working-age population. One of the ways identified by this paper to achieve these targets is through the sustenance of SMEs. The sustenance of SMEs is vital because the vast majority of developed and developing countries rely on the dynamism, resourcefulness and risk taking of the sector to stimulate economic growth and development as well as the generation of employment. As noted by Ebitu *et al.* (2016), "small and medium scale enterprises play a vital role in economic development of nations".

These roles have generally superintended the availability of goods and services in various economies. Small and medium scale enterprises have been very instrumental in job creation, improving the human standard of living and providing competition and supplying the needs of a growing world population as well as other sectors. In the area of employment, SMEs have provided about 70 per cent of the gross domestic product (GDP) and jobs in developing countries such as Ghana and have significantly contributed to their revenue generation and overall economic development (Peprah *et al.*, 2016). In India, small and medium scale

enterprises have added considerably to the development and performance of the Indian economy by the provision of jobs to an army of unemployed persons in the country as well as improving the export opportunities of the country (Gupta and Chaturvedi, 2017). In Europe, SMEs have become vital and important avenues of galvanising entrepreneurial skills, innovation and job opportunities. These enterprises, according to European Commission (2008), have provided about 75m jobs in all parts of Europe. Similarly, in the UK, the activities of small and medium scale enterprises provide approximately 95 per cent of the small businesses in the region, accounting for about 58 per cent of their job opportunities and 56 per cent of their total turnover (Small Business Service, 2004).

In Nigeria, as well as other transition economies, SMEs have proved to be vital in the quest to advance both economically and technologically. SMEs, in addition to providing job opportunities for the country's army of unemployed persons, have also stimulated the vital sectors of the country's economy. In view of this, Debbie (2004) noted that SMEs make up approximately 80 per cent of manufacturing, processing and service businesses in the country while providing 60 per cent of job opportunities in the region. In the area of economic growth, the work of Omonigho (2017) found that there is a significant and positive relationship between SME's contribution to Nigeria's GDP and Nigeria's GDP from 1982 to 2012. The paper also suggested that more efforts be put forward to further develop the sector in order to make it serve as the source of economic growth in Nigeria. Opafunso and Adepoju (2014) also found that there is a positive and significant relationship between SMEs economic growth, most with reference to poverty reduction, employment generation and improvement in the standard of living of people. The paper suggested that access to capital funding by a reduction in the interest rate on loan offered by banks can boost the performance of SMEs in Nigeria.

However, evidence over the years has shown that SMEs in Nigeria have underperformed and have not made a significant contribution to the nation's economic growth and development (Ololube and Uzorka, 2008; Muritala *et al.*, 2012; Agwu and Emeti, 2014; Ebitu *et al.*, 2016). The activities of SMEs in Nigeria have been constrained by a number of factors, such as infrastructural inadequacies, unstable foreign exchange market, high risk of doing business poor funding and high interest rates (Agwu and Emeti, 2014), low managerial skills and lack of access to modern technology (Ololube and Uzorka, 2008; Muritala *et al.*, 2012). Similarly, evidence has equally shown that SMEs in the country are constrained in the area of technologies, finance and size as well as management, and operating in limited markets (Saunila, 2016).

Considering these challenges, most of the activities of SMEs in Nigeria have become largely unproductive leading to a high unemployment rate, which stands at 14.2 per cent in the second quarter of 2017 and poor economic growth.

Literature review and theory

Small and medium scale enterprises sustenance and production subcontracting

Production subcontracting among small and medium scale enterprises is an important strategy in the present world economic system. This can be attributed to the inability of SMEs to have all the required resources and capacities to attain global competitiveness (Chan and Wong, 1994 cited in Salisu *et al.*, 2017). To become competitive and globalised players, SMEs have resorted to the use of subcontracting so as to build an effective partnership with other enterprises in the market. Consequently, a well-structured production subcontracting creates value for the SMEs. According to Segil (1998) and Kale and Singh (2009), SMEs engaged in alliance such as production subcontracting achieved 15 per cent increase in income and a 25 per cent rise in growth rate compared to SMEs not engaged in this strategy.

Similarly, a well-structured production subcontracting arrangement gives firms the opportunity to access resources (Bailey *et al.*, 2002; Kumar and Subrahmanya, 2007;

Jenkins *et al.*, 2007; Li and Ojan, 2018), knowledge (Asheim and Coenen, 2005; Wang and Nicholas, 2005; Smyth and Duryan, 2016), reduce both transaction cost (Chang and Gotcher, 2007; Williamson, 2008; Memili *et al.*, 2011) and risk (Asanuma, 1992; Yang *et al.*, 2016; Gazley and Simmond, 2018). In terms of resources accessibility, production subcontracting can be used to access new technology, significant technological information and opportunities for technological transfer (Elmuti and Kathawala, 2001; Hagedoorn *et al.*, 2011; Elmuti *et al.*, 2005). It can also be used to enhance production process, access the services of skilled employees, factory building, machinery, efficient procedures and organisational processes, capital, business contacts, knowledge, information, (Alarape, 2007; Ono, 2007) as well as helping SME to achieve competitive advantages (Das and Teng, 2000).

Production subcontracting has also been attributed to cost reduction. Cost reduction can be achieved through production subcontracting in three ways. These include contracting out unstable parts of a production activity to lower-wage producers (supplier subcontracting), subcontracting out production operations in the peak of production orders/demand (capacity subcontracting) and specialising on a firm's core competence while subcontracting out peripheral tasks to other firms (specialised subcontracting) (Girma and Görg, 2004). This follows the work of Coase's (1937), which stipulated that firms would subcontract activities where the costs of using external resources are less than that of carrying it out within the firm. Risk reduction can also be fostered by SMEs through production subcontracting. De-concentration of production processes or task means that firms give out those aspects of their production where they lack competence to other firms. By so doing, they are able to eliminate the risks associated with taking up such tasks in-house.

Subcontracting of production processes by the firm also helps them to gain specialized knowledge from other SMEs, leads to a decline in the cost of information search, stimulates increased organisational learning, as well as raises the performance strength of the partnering firms (Yavirach, 2013). This, most times, is associated with production tasks requiring a lot of technical information. This helps firms spread risks, open new markets, create a new source of supply, reduce costs and risk, gain access to key technologies, reduce working capital and make their level of production more flexible (Nwokocha *et al.*, 2019; Nwokocha and Madu, 2015; Nwokocha, Madu, Ocheje, Olerum and Nwosu, 2015; Ajagbe and Ismail, 2014).

In Nigeria, the work of Ogbari *et al.* (2015) examined the effects of production subcontracting on modern day organisations. The paper found that production subcontracting has assisted companies in realizing positive growth and suggested that firms should engage more in the use of production subcontracting processes so as to achieve success in their business activities. To this, it was found that 68 per cent of the large-scale construction firms in Nigeria use small firm subcontractors in carrying out their operations. The subcontracting strategy was used by large-scale construction firms to utilise the benefits of specialisation, create the speed of erection, increase the competence of the small firm subcontractor and ease and aid access into restricted markets (Fagbenle, 2010; Fagbenle and Adeosun, 2010; Makinde *et al.*, 2011). In the same vein, Oyeyinka (2005) found that production subcontracting by SMEs in Nigeria industrial clusters bolsters specialization, which leads to increased levels of cooperation, sharing and gainful trust among SMEs. Subcontracting these operations enabled the SMEs to concentrate on their core competencies. Other studies that have made significant contributions on the roles of production subcontracting on small and medium scale enterprises are Kulemeka *et al.* (2015), Nwokocha, Madu, Ocheje and Olerum (2015); Gakure *et al.* (2014); Hajej *et al.* (2014); Okatch *et al.* (2011); Kumar and Subrahmanya (2007) and Kimura (2001).

From the above, it is evident that none of the papers analysed above has examined the impact of production subcontracting forms on the sustenance of small and medium scale enterprises. The main objective of this study is to prove that production subcontracting forms – capacity, specialised and supplier subcontracting – can be used to achieve SME

sustenance through cost reduction, risk reduction, access to resources and access to knowledge, as shown in Figure 1.

Figure 1 shows the proposed model of this study indicating the relationship between subcontracting forms and cost reduction, risk reduction, resource accessibility and knowledge accessibility, which thus results in SME sustenance.

In view of this model, the following hypotheses are formed:

- H1. There is no significant relationship between Capacity subcontracting and SME sustenance.
- H1A. There is a significant relationship between capacity subcontracting and SME sustenance.
- H2. There is no significant relationship between specialized subcontracting and SME sustenance.
- H2A. There is a significant relationship between specialized subcontracting and SME sustenance.
- H3. There is no significant relationship between Supplier subcontracting and SME sustenance.
- H3A. There is a significant relationship between Supplier subcontracting and SME sustenance.

Production subcontracting forms based on the proposition of this paper give SMEs the opportunity to engage in de-concentration of the production process and increased co-operations with other SMEs leading to reduced risk, and cost of production, knowledge accessibility and resource accessibility. Thus, the present study tries to fill this lacuna by examining production subcontracting forms and its impact on the sustenance of SMEs in Nigeria. The sustenance of SME in this paper was defined as the ability of SMEs to sustain their operations by achieving reduced cost of production, risk reduction, resources accessibility and knowledge accessibility.

Data and methods

This study was situated in a Nigeria District called Enugu State. Enugu State is one of the commercial and industrial nerve centres of south-eastern Nigeria, which provides goods and services to adjacent urban areas and international markets. Enugu State is located between latitudes 5°58' N and 7° 08' N of the Equator and Longitude 7° 08' E and 7° 48' E of the Greenwich Meridian, as shown in Figure 2.

The paper utilised a number of methods. These methods are field observations, reference to relevant literature and a questionnaire survey of 169 SMEs.

Sample size

This paper selected purposely 200 SMEs from ten local government areas (LGAs) of the Enugu State. The selected LGAs were place identified with strong presence of industrial



Figure 1. Proposed model showing the relationship between subcontracting SME sustenance

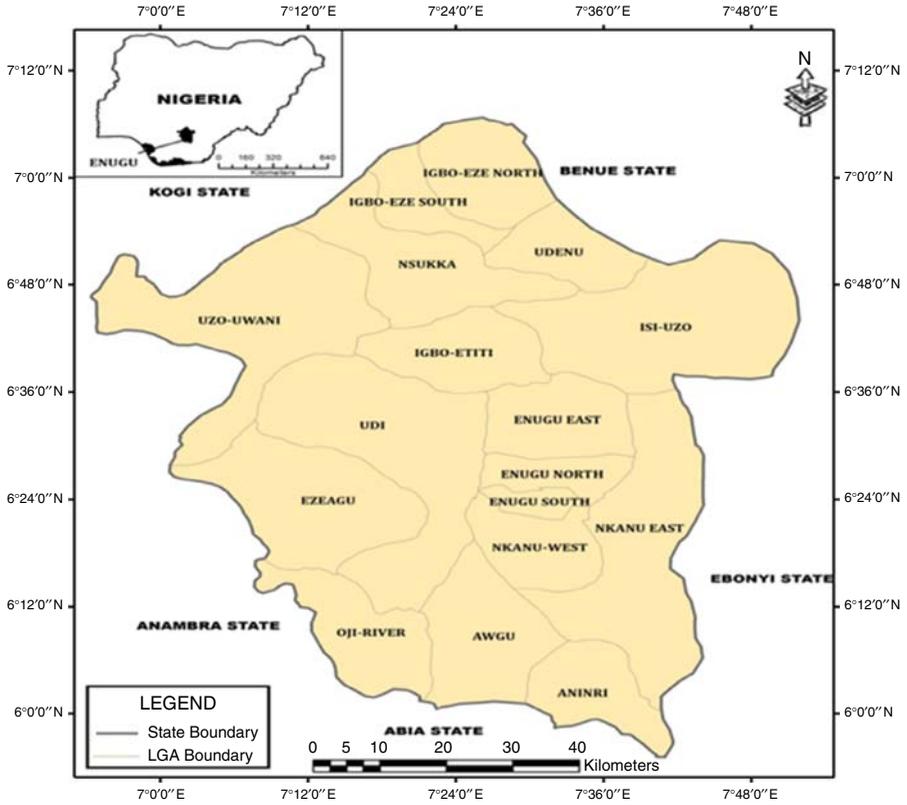


Figure 2.
Enugu State showing
the 17 local
governments

Source: Department of Urban Planning (2012)

activities and SMEs in the study area. The presence of these SMEs made it easy and convenient for them to be used for the research, hence the choice of the LGAs. Using Taro Yamane' formula and a stratified sample method, a sample size of 169 SMEs was used for the study, as shown in Table I.

Selected LGAs	No SMEs	Stratified sample size
Udaenu	25	21
Udi	20	17
Oji-River	17	14
Enugu North	24	20
Enugu South	22	19
Enugu East	11	9
Agwu	16	14
Nkanu West	20	17
Aninri	27	23
Nkanu East	18	15
Total	200	169

Table I.
SMEs sample size in
the ten selected local
government areas

Source: Author's Computation (2018)

Questionnaires were administered to 169 managers using a direct delivery technique. This method was adopted not only to get to the targeted population but also to collect the relevant information needed for this paper. Some of the information collected included the types and impact of production subcontracting forms on SMEs, the influence of production subcontracting typologies on cost reduction, risk reduction, resource accessibility and knowledge accessibility. Sampling strategies and sampling design were constrained by the practical circumstances surrounding the targeted population, time and cost.

A pre-test/pilot study was carried out on 20 randomly selected SMEs in the study area. The pilot study was used to remove ambiguities, test for reliability and validate the study instrument. The data for the reliability test were collected by the researcher and the internal consistency of the instrument was determined by Cronbach's α reliability coefficient. The choice of Cronbach's α reliability coefficient was supported by the fact that the questionnaire items were mostly of multiple response types, and it provided for a more stable measure of homogeneity. SMEs targeted for this study include those in sectors such as printing, publishing and paper processing sector, metal and iron fabrication, table water, as well as chemical and plastic sectors.

Simple statistics of mean and standard deviation were used to determine the relevance and influence of production subcontracting forms to SMEs. Multiple regression analysis was also used to test the research hypothesis as well as to assess the relationship between subcontracting forms and the sustenance SMEs in the study area. All variables were measured with a five-point Likert scale ranging between 1 (significantly decreased) to 5 (significantly increased).

Result

Demographic characteristics of the respondents

From the 169 administered questionnaire, 96 questionnaire, which represented (57 per cent), were returned with no missing data. A feedback rate of 57 per cent was used for the study. The age of the targeted SMEs was between 10 and 15 years and between 30 years and above for the managers. About 81 per cent of the SMEs were sole proprietorships while 19 per cent were partnerships. This showed that the management of the small and medium scale enterprises sector in the study area was dominated by individuals who run their businesses with personal and family funds. This could explain partly the underperformance of this sector in Nigeria as they receive little or no support from the government or her agencies. Similarly, the preliminary findings of the paper equally showed that while 62.70 per cent of the respondents had attained a tertiary level of education, 15.23 per cent had a professional qualification, while another 22.07 per cent attained product-related skills training through apprenticeship and learning on the job. The analysis of respondents also showed that 20.7 per cent of the respondents are from metal and iron fabrication, 19.9 per cent from printing, publishing and paper processing, 36 per cent from bottled and sachet water SMEs and 23.4 per cent from chemical, paint and plastic SMEs, as indicated in Table II.

Production subcontracting forms and SMEs sustenance

In line with the literature, three forms of production subcontracting were adopted by this study. They are supplier subcontracting, specialised subcontracting and capacity subcontracting. Using simple descriptive statistics of mean and standard deviation, the relevance and usefulness of the production subcontracting typologies – specialised, capacity and supplier subcontracting – in cost reduction, risk reduction, resources and knowledge accessibility by SMEs were analysed. The result of the analysis showed that supplier subcontracting was used by the SMEs to achieve cost reduction, risk reduction and access to resources with mean and standard deviation values of $M=2.15$ $S=0.36$, $M=2.36$ $S=0.78$, $M=2.15$ $S=0.46$, as shown in Table III.

This result shows that SMEs in this paper make use of supplier subcontracting in order to achieve cost reduction, risk reduction and access to resources. Similarly, the analysis of specialised subcontracting with mean and standard deviation values of $M=2.64$ $S=0.89$, $M=3.13$ $S=1.25$, $M=3.22$ $S=1.25$ showed that this type of subcontracting provides SMEs with the opportunities of cost reduction, risk reduction and access to resources, as indicated in Table IV.

The result also showed that specialised subcontracting is highest with access to resources (3.13 $S=1.25$) and risk reduction (3.22 $S=1.25$). This, from our observation, signified that SMEs largely depended on each other to access skills and machinery that are not accessible within their enterprise. This helps these enterprises to reduce the risk burden of developing additional capacity with which to address their shortfalls. Furthermore, the analysis of capacity subcontracting with mean and standard deviation values of ($M=2.16$ $S=0.53$, $M=2.50$ $S=0.99$, $M=2.46$ $S=0.99$) showed that SMEs can achieve cost reduction, risk reduction and access to resources using this type of production subcontracting, as captured in Table V. The result equally showed that capacity subcontracting played a more significant role in risk reduction compared to the other variables. However, knowledge accessibility was found not to be significant with the three forms of production subcontracting analysed in this paper.

Furthermore, in order to establish the relationship between subcontracting typologies and SMEs sustainability, a regression analysis was deployed in the paper. The result of the

Table II.
Percentage distribution of the industrial sectors surveyed in this paper

Industrial sector	Percentage response (%)
Metal and iron fabrication	20.7
Printing, publishing and paper processing	19.9
Bottled and sachet water	36.0
Chemical paint and plastic	23.4

Source: Author's computation 2018

Table III.
Descriptive statistics of supplier subcontracting

Supplier subcontracting	<i>n</i>	Minimum	Maximum	Mean	SD
Cost reduction	96	2.00	4.00	2.15	0.46
Risk reduction	96	1.00	4.00	2.36	0.78
Access to resources	96	2.00	3.00	2.15	0.36
Access to knowledge	96	1.00	1.00	0.23	0.43
Valid <i>n</i> (list wise)	96				

Source: Author's computation 2018

Table IV.
Descriptive statistics of specialised subcontracting

Specialised subcontracting	<i>n</i> Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	SD Statistic
Cost reduction	96	1.00	4.00	2.64	0.89
Risk reduction	96	1.00	5.00	3.13	1.25
Access to resources	96	2.00	5.00	3.22	1.25
Access to knowledge	96	1.00	2.00	0.54	0.22
Valid <i>n</i> (list wise)	96				

Source: Author's computation 2018

analysis showed that there is a significant relationship between all the subcontracting forms and SME sustenance, as shown in Tables VI–VIII. The result showed that a unit increase in capacity subcontracting led to a 0.86 and 0.67 increase in cost reduction and risk reduction. This was significant and positive at a 0.05 level of confidence. This also signified that capacity subcontracting is instrumental for SMEs in the areas of cost and risk reduction.

Similarly, the result also showed that a unit increase in specialised subcontracting led to 0.56 and 0.65 increase in cost and risk reduction, while a unit increase in supplier subcontracting led to a 0.76 increase in cost reduction. These relationships were significant and positive at a 0.05 confidence level, showing that these forms of subcontracting can be used to achieve cost reduction and risk reduction in the activities of SMEs. Cumulatively,

Capacity subcontracting	<i>n</i> Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	SD Statistic
Cost reduction	96	1.00	5.00	2.46	0.99
Risk reduction	96	1.00	5.00	2.50	0.99
Access to resources	96	1.00	3.00	2.16	0.53
Access to knowledge	96	1.00	2.00	0.73	0.54
Valid <i>n</i> (list wise)	96				

Source: Author's computation 2018

Table V.
Descriptive statistics of capacity subcontracting

Multiple <i>R</i> 0.82	<i>R</i> ² 0.73	Adjusted <i>R</i> ² 0.79	SE 0.52	Observation 96
Variables (SME sustenance)	Coefficient	<i>t</i> -statistics	<i>p</i> -value	
Cost reduction	0.86	4.38	0.00	
Risk reduction	0.67	2.13	0.00	
Access to resources	0.41	0.17	0.87	
Access to knowledge	0.51	2.35	0.18	

Source: Author's computation 2018

Table VI.
Capacity subcontracting and SME sustenance

Multiple <i>R</i> 0.75	<i>R</i> ² 0.58	Adjusted <i>R</i> ² 0.53	SE 0.73	Observation 96
Variables (SME sustenance)	Coefficient	<i>t</i> -statistics	<i>p</i> -value	
Cost reduction	0.56	0.68	0.00	
Risk reduction	0.65	0.51	0.04	
Access to resources	0.75	0.50	0.09	
Access to knowledge	0.55	0.36	0.51	

Source: Author's computation 2018

Table VII.
Specialised subcontracting and SME sustenance

Multiple <i>R</i> 0.87	<i>R</i> ² 0.76	Adjusted <i>R</i> ² 0.74	SE 0.51	Observation 96
Variables (SME sustenance)	Coefficient	<i>t</i> -statistics	<i>p</i> -value	
Cost reduction	0.76	3.93	0.00	
Risk reduction	0.42	0.52	0.61	
Access to resources	0.67	0.64	0.52	
Access to knowledge	0.58	1.15	0.26	

Source: Author's computation 2018

Table VIII.
Supplier subcontracting and SME sustenance

the result showed that capacity, specialised and supplier subcontracting has R_2 of 0.73, 0.58 and 0.76, which were significant and positive. Based on this, the research $H1-H3$ were rejected and the alternative hypothesis accepted.

Discussion

The result in Tables III–V showed that SMEs de-concentrate production tasks in order to meet excess capacity, unfilled orders and long delivery times. These, from our investigation, helped the SMEs to achieve cost reduction, risk reduction and access to resources. This was mostly observed with SMEs in metal, iron and fabrication SMEs as well as those in printing, publishing and paper processing SMEs. These SMEs subcontracted tasks which cannot be accommodated within their enterprises to other SMEs rather than increasing their capacities to carry out such tasks in-house. This according to respondents helps SMEs to maintain a stable production budget since most of these demands fluctuate and are largely unstable. This corroborates the finding of Ogbari *et al.* (2015), which affirm that firms reduce fluctuations in demand and guarantees efficiency in production by contracting out the unstable part to other firms creating resources and an already made market for the firms as well as meeting up with their clients demand.

However, a mean value of less than 1 in the area of knowledge accessibility shows that the subcontracting of production tasks by SMEs does not give them access to new knowledge. This is because all the tasks contracted out by the SMEs take place outside of their domain and therefore do not give them the opportunity to learn or acquire any new knowledge. Similarly, a standard deviation value of 1.25 indicates that other factors other than risk reduction and access to resources could also explain the relationship between specialised subcontracting and SME sustenance. The use of specialised subcontracting was observed mostly with the sachet water SMEs. These SMEs lack specialities in the areas of sachet and bottle production and therefore rely on other SMEs in the plastic sector for the production of these items.

Furthermore, the paper also found that there is a positive relationship between subcontracting forms and SMEs sustenance in the study area. The result showed that an increase in capacity, supplier and specialized subcontracting have an average of 50 per cent increase in the SME sustenance, which was significant and positive. This also signified that subcontracting forms can be used to sustain the activities of SMEs in the study area.

Conclusion

This paper has shown that production subcontracting forms can help SMEs achieve sustenance. The results of the study showed that the different production subcontracting forms help SMEs to reduce both the risk and cost of production by engaging them to support each other with capacities that are not available in their enterprises, as well as having access to resources outside of their boundaries. This is by engaging other SMEs to use their resources to complete a particular production tasks. This study also found that there is a relationship between production subcontracting forms and SMEs sustenance. The study found that the different forms of production subcontracting such as capacity subcontracting and specialised subcontracting have a significant relationship with cost reduction and risk reduction. SMEs from the studies achieved this by concentrating on their core competencies while contracting out production tasks which they lack the capacity to pursue in-house. This helped them to bypass or reduce the cost and risk of setting up additional capacities to carry out such task in house.

The implication of these findings is that the prevalent high cost of production and ever-increasing production risks, which are the common features of SMEs in Nigeria, can be mitigated through the various forms of production subcontracting analysed in this paper. SMEs, through seminars, workshops, entrepreneurship and business fares, can be

encouraged to take up this strategy following its ability to address their various operational bottlenecks. In view of this, this paper suggests that production subcontracting be made an industrial policy in Nigeria following its ability to ensure the sustenance of SMEs. This will not only give room for industrialization, which is key in achieving the Africa Union Agenda 2063, it would also lead to the achievement of a sustained economic growth as well as guarantee a productive employment and provision of decent work for the teeming unemployed persons which are the targets of Goal “8” of the SDGs in the year 2020.

However, further research should be focused on examining the effects, influence and the possibility of using subcontracting forms on other levels of industries such as large scale and microscale industries. This is to be able to explain variations in the influence of subcontracting forms on these industries across the Nigerian space and to make definitive statements about the character and importance of subcontracting in the Nigerian industrial sector.

References

- Agwu, M.O. and Emeti, C.I. (2014), “Issues, challenges and prospects of small and medium scale enterprises (SMEs) in Port-Harcourt City, Nigeria”, *European Journal of Sustainable Development*, Vol. 3 No. 1, pp. 101-114.
- Ajagbe, A.M. and Ismail, K. (2014), “Factors influencing venture capital assessment of high growth companies in Malaysia”, *International Journal of Entrepreneurship and Small Business*, Vol. 21 No. 4, pp. 457-494.
- Ajayi, D.D. (2003), “Nature and scope of production subcontracting in Nigeria”, *Africa Development*, Vol. XXVIII Nos 3-4, pp. 89-111.
- Alarape, A.A. (2007), “Towards a framework for the development of effective subcontracting and network relations among small, medium and large industries in Nigeria”, *Journal of Small Business and Entrepreneurship*, Vol. 20 No. 2, pp. 101-116.
- Asanuma, B. (1992), “Risk absorption in Japanese subcontracting: a micro econometric study of the automobile industry”, *Journal of the Japanese and International Economics*, Vol. 6 No. 1, pp. 1-29.
- Asheim, B.T. and Coenen, L. (2005), “Knowledge bases and regional innovation systems: comparing Nordic clusters”, *Research Policy*, Vol. 34 No. 8, pp. 1173-1190.
- Bailey, W., Meason, R. and Raeside, R. (2002), “Outsourcing in Edinburgh and Lothians”, *European Journal of Purchasing and Supply Management*, Vol. 8 No. 1, pp. 83-95.
- Ceglie, G. and Dini, M. (1999), “SME cluster and networking development in developing countries: the experience of UNIDO”, Working Paper No. 2, Private Sector Development Branch, UNIDO, Vienna.
- Chang, K.H. and Gotcher, D.F. (2007), “Safeguarding investments and creation of transaction value in asymmetric international subcontracting relationships: the role of relationship learning and relational capital”, *Journal of World Business*, Vol. 42 No. 4, pp. 477-488.
- Coase, R.H. (1937), “The nature of the firm”, *Economica*, Vol. 4 No. 16, pp. 386-405.
- Das, T.K. and Teng, B. (2000), “A resource-based theory of strategic alliances”, *Journal of Management*, Vol. 26 No. 1, pp. 31-61.
- Debbie, A. (2004), “Small firms are the backbone of Nigerian economy”, Economic Analysis, available at: www.mycbsearch.com (accessed 14 August 2018).
- Department of Urban Planning (2012), “Ministry of Lands and Housing”, Department of Urban Planning, Enugu.
- Ebitu, E.T., Basil, G. and Ufot, J.A. (2016), “An appraisal of Nigeria’s micro, small and medium enterprises: growth, challenges and prospects”, *International Journal of Small Business and Entrepreneurship Research*, Vol. 4 No. 4, pp. 1-15.
- Elmuti, D. and Kathawala, Y. (2001), “An overview of strategic alliances”, *Management Decision*, Vol. 39 No. 3, pp. 205-217.

- Elmuti, D., Abebe, M. and Nicolosi, M. (2005), "An overview of strategic alliances between universities and corporations", *The Journal of Workplace Learning*, Vol. XVII Nos 1/2, pp. 115-129.
- European Commission (2008), "Commission staff working document", European Code of Best Practices Facilitating Access by SMEs to Public Procurement Contracts (SEC(2008)2193), European Commission, Luxembourg.
- Fagbenle, O.I. (2010), "A comparative study of the time and cost performance of labour only subcontractors in the construction industry in South Western Nigeria", *Journal of Building Performance*, Vol. 1 No. 1, pp. 94-105.
- Fagbenle, O.I. and Adeosun, O.A. (2010), "Identification of contractors needs in the selection of construction subcontractors in Nigeria", *European Scientific Journal*, Vol. 8 No. 21, p. 138.
- Gakure, R.W., Kimemia, P.N. and Waititu, G.A. (2014), "Influence of subcontract offering on the performance of manufacturing micro and small enterprises in Kenya", *Journal of Humanities and Social Science*, Vol. 19 No. 1, pp. 37-46.
- Gazley, A. and Simmond, H. (2018), "When service providers fail: outsourcing help and consumer attitudes", *Journal of Business Strategy*, Vol. 39 I No. 5, pp. 22-30.
- Girma, S. and Görg, H. (2004), "Outsourcing, foreign ownership and productivity: evidence from UK establishment level data", *Review of International Economics*, Vol. 12 No. 5, pp. 817-832.
- Gupta, V.K. and Chaturvedi, A. (2017), "Role and contribution of small scale industries in economic development in India", *Inspira-Journal of Commerce, Economics & Computer Science*, Vol. 3 No. 01, pp. 41-48.
- Hagedoorn, J., Letterie, W. and Palm, F. (2011), "The information value of R&D alliances: the preference for local or distant ties", *Strategic Organization*, Vol. IX No. 4, pp. 283-309.
- Hajej, Z., Rezzg, N. and Gharbi, A. (2014), "Forecasting and maintenance problem under subcontracting constraint with transportation delay", *International Journal of Production Research*, Vol. 52 No. 3, pp. 6695-6716.
- Jenkins, B., Alkhalqatsi, A., Roberts, B. and Gardiner, A. (2007), "Business linkages: lessons, opportunities and challenges", International Finance Corporation Report, Washington, DC.
- Kafigi, J. (2015), "Strategic alliance forms and survival chances among medium-sized manufacturing firms in Tanzania", *Journal Competitiveness*, Vol. 7 No. 2, pp. 38-47.
- Kale, P. and Singh, H. (2009), "Managing strategic alliances: what do we know now, and where do we go from here?", *The Academy of Management Perspectives*, Vol. 23 No. 3, pp. 45-62.
- Kale, Y. and Doguwa, S.I. (2015), "Compilation of labour force statistics for Nigeria", *Central Bank of Nigeria (CBN) Journal of Applied Statistics*, Vol. 6 No. 1, pp. 183-198.
- Kim, J. and Hemmert, M. (2016), "What drives the export performance of small and medium-sized subcontracting firms? A study of Korean manufacturers", *International Business Review*, Vol. 25 No. 2, pp. 511-521.
- Kimura, F. (2001), "Fragmentation, internalization, and inter-firm linkages: evidence from the micro data of Japanese manufacturing firms", in Cheng, L.K. and Kierzkowski, H. (Eds), *Global Production and Trade in East Asia*, Kluwer Academic Publishers, Boston, MA, pp. 127-152.
- Kongmanila, X. and Takahashib, Y. (2009), "Determinants of subcontracting and firm performance in Lao PDR: evidence from a garment industry cluster", *Asia Pacific Management Review*, Vol. 15 No. 1, pp. 97-112.
- Kulemeka, P.J., Kululanga, G. and Morton, D. (2015), "Critical factors inhibiting performance of small- and medium-scale contractors in Sub-Saharan Region: a case for Malawi", *Journal of Construction Engineering*, pp. 17-24.
- Kumar, R.S. and Subrahmanya, B. (2007), "Subcontracting relationships of Indian SMEs with global TNCs: do SMEs gain, how", *Journal of Asian Economics*, Vol. 5 No. 7, pp. 2-35.
- Li, L. and Ojan, G. (2018), "Strategic alliances in technology industries: a different rationale", *Journal of Business Strategy*, Vol. 39 No. 2, pp. 3-11.

- Makinde, J.K., Abdulganiyu, A.O. and Dikko, M.M. (2011), "Risk assignment patterns of small subcontracting firms in the Nigerian construction industry", *Journal of Science, Technology, Mathematics and Education*, Vol. 7 No. 3, pp. 145-156.
- Memili, E., Chrisman, J.J., Chua, J.H., Chang, E.P.C. and Kellermanns, F.W. (2011), "The determinants of family firms' subcontracting: a transaction cost perspective", *Journal of Family Business Strategy*, Vol. 2 No. 1, pp. 26-33.
- Muritala, T.A., Awolaja, A.M. and Bako, Y.A. (2012), "Impact of small and medium enterprises on economic growth and development", *American Journal of Business and Management*, Vol. 1 No. 1, pp. 18-22.
- Nwokocho, V.C. and Madu, I.A. (2015), "Influence of subcontracting constraints on the performance of manufacturing industries in Nigeria", *Production and Manufacturing Research*, Vol. 3 No. 1, pp. 343-354.
- Nwokocho, V.C., Nwankwo, C. and Madu, I.G. (2019), "The role of subcontracting on innovation: an assessment of small and medium enterprises in Nigeria", Vol. 7 No. 1, pp. 88-108.
- Nwokocho, V.C., Madu, I.A., Ocheje, J.F. and Olerum, V.N. (2015), "Production subcontracting: a strategy for the survival of small and medium scale industries in Nigeria", *Mediterranean Journal of Social Sciences*, Vol. 6 No. 4, pp. 641-651.
- Nwokocho, V.C., Madu, I.A., Ocheje, J.F., Olerum, V.N. and Nwosu, I.G. (2015), "Production subcontracting: a policy issue for small and medium scale manufacturing industries in Nigeria", *Academic Journal of Interdisciplinary Studies*, Vol. 4 No. 2, pp. 375-385.
- Ogbari, E.I.M., Ajagbe, A.M., Isiavwe, T.D. and Ade-Turton, D. (2015), "Effects of subcontracting on modern day organizations", *Australia Journal of Commerce Study*, Vol. 2 No. 2, pp. 1-11.
- Okatch, B.A., Mukulu, E. and Oyugi, L. (2011), "Constraints to subcontracting arrangements between SMEs and large firms in the motor vehicle industry in Kenya", *International Journal of Business and Social Science*, Vol. 2 No. 15, pp. 208-223.
- Ololube, N.P. and Uzorka, M.C. (2008), *Introduction to Entrepreneurship: A Practical Guide*, Emhai Books, Port Harcourt.
- Omonigho, T.O. (2017), "Effect of small and medium scale enterprises on economic growth in Nigeria", *Journal of Research in National Development*, Vol. 15 No. 1, pp. 45-55.
- Ono, Y. (2007), "Outsourcing business services and the scope of local markets", *Regional Science and Urban Economics*, Vol. 37 No. 2, pp. 220-238.
- Opafunso, Z.O. and Adepoju, O.O. (2014), "The impact of small and medium scale enterprises on economic development of Ekiti State, Nigeria", *Journal of Economics and Sustainable Development*, Vol. 5 No. 16, pp. 115-122.
- Oyeyinka, B.O. (2005), "Inter-firm collaboration and competitive pressures: SME footwear clusters in Nigeria", *International Journal of Technology and Globalization*, Vol. 1 Nos 3-4, pp. 56-68.
- Peprah, J.A., Mensah, A.O. and Akosah, B.N. (2016), "Small and medium sized enterprises (SMEs) accessibility to public procurement: smes entity perspective in Ghana", *European Journal of Business and Social Sciences*, Vol. 4 No. 11, pp. 25-40.
- Salisu, B., Abu Bakar, J.L. and Abdul Rani, S.H. (2017), "A proposed model of innovation as a mechanism for SMES success in Nigeria", *Asian Journal of Multidisciplinary Studies*, Vol. 5 No. 12, pp. 37-42.
- Saunila, M. (2016), "Performance measurement approach for innovation capability in SMEs", *International Journal of Productivity and Performance Management*, Vol. 65 No. 2, pp. 162-176.
- Segil, L. (1998), "Strategic alliances for the 21st century", *Strategy and Leadership*, Vol. 26 No. 4, pp. 12-16.
- Small Business Service (2004), *A Government Action Plan for Small Business: The Evidence Base*, DTI, London.
- Smyth, H.J. and Duryan, M. (2016), "Knowledge application in the supply network of infrastructure programme management", *Proceedings COBRA, London*.

- Wang, Y. and Nicholas, S. (2005), "Knowledge transfer, knowledge replication, and learning in non-equity alliances: operating contractual joint ventures in China", *Management International Review*, Vol. 45 No. 1, pp. 99-118.
- Williamson, O.E. (2008), "Outsourcing: transaction cost economics and supply chain management", *Journal of Supply Chain Management*, Vol. 44 No. 2, pp. 5-16.
- World Poverty Clock (2018), "The percentage of Nigerian living in extreme poverty could increase by 2030", available at: <https://worldpoverty.io/blog/index.php?r=12> (accessed 13 August 2018).
- Yang, R.J., Zou, P.K.W. and Wang, J. (2016), "Modelling stakeholder-associated risk networks in green building projects", *International Journal of Project Management*, Vol. 34 No. 1, pp. 66-81.
- Yavirach, N. (2013), "Understanding many perspectives of strategic alliance learning experience", *Journal of Management*, Vol. 37 No. 3, pp. 682-708.

Further reading

- Adepoju, A. (2011), "Reflections on international migration and development in sub-Saharan Africa", *African Population Studies*, Vol. 25 No. 2, pp. 298-391.
- Afolabi, M.O. (2013), "Growth effect of small and medium enterprises (SMEs) financing in Nigeria", *Journal of African Macroeconomic Review*, Vol. 3 No. 1, pp. 25-32.
- Barney, J.B. and Clark, D.N. (2007), *Resource-Based Theory: Creating and Sustaining Competitive Advantage*, Oxford University Press, New York, NY.
- Chan, J., Pun, N. and Selden, M. (2015), "Apple's iPad city: subcontracting exploitation to China", *Handbook of the International Political Economy of Production*, Edward Elgar, Cheltenham.
- Christophe, M. and Franck, G. (2013), "Nuclear decommissioning and organisational reliability: involving subcontractors in collective action. Decommissioning challenges: an industrial reality and prospects", *5th International Conference, April, Avignon*, p. 9.
- Gomez, H.R., Gharbi, A., Kenne, J.P., Arango, O.M., Selene, E. and Gress, H. (2016), "Production control problem integrating overhaul and subcontracting strategies for a quality deteriorating manufacturing system", *International Production Economics*, Vol. 171 No. 3, pp. 134-150.
- Grossman, G.M. and Helpman, E. (2005), "Outsourcing in a global economy", *Review of Economic Studies*, Vol. 72 No. 1, pp. 135-159.
- Holl, A. (2007), *Production Subcontracting and Location*, FEDEA Foundation for Applied Economics Studies, Madrid.
- Hu, Z., Zheng, J. and Wang, J. (2011), "Impact of industrial linkages on firm performance in Chinese development zones, Yangtze River Delta, Jiangsu Province, China", *The Chinese Economy*, Vol. 44 No. 2, pp. 78-105.
- Knoke, D. (2009), "Playing well together: creating corporate social capital in strategic alliance networks", *American Behavioral Scientist*, Vol. 52 No. 12, pp. 225-236.
- McGunagle, D.M. (2007), *The Chinese Auto Industry: Taming the Dragon*, VDM Verlag Dr. Muller.
- Marimuthu, M., Arokiasamy, L. and Ismail, M. (2009), "Human capital development and its impact on firm performance: evidence from developmental economics", *The Journal of International Social Research*, Vol. 2 No. 8, pp. 265-272.
- Okon, N.B. and Edet, T.E. (2016), "Small and medium scale business enterprises as a veritable tool for rural development in Nigeria: challenges and prospects", *Journal of Educational Policy and Entrepreneurial Research*, Vol. 3 No. 3, pp. 87-97.
- Ongonga, J.O. and Abeka, E.O. (2011), "Networking in the Kenyan informal sector: an attempt to manage the market failures", *African Journal of Business Management*, Vol. 5 No. 28, pp. 11323-11334.
- Santos, J.B. and Brito, L.A.L. (2012), "Towards a subjective measurement model for firm performance", *Brazilian Administrative Review*, Vol. 9 No. 6, pp. 95-117.

- Tuan, N.P. and Yoshi, T. (2010), "Vertical linkage and firm's performance in supporting industries in Vietnam", *Asian Journal of Management Research*, Vol. 1 No. 1, pp. 1-14.
- Williams, G., Davies, S. and Chinguno, C. (2015), "Subcontracting and labour standards: reassessing the potential of international framework agreements", *British Journal of Industrial Relations*, Vol. 53 No. 2, pp. 181-203.

Corresponding author

Victor Chukwunweike Nwokocha can be contacted at: victor.nwokocha@unn.edu.ng