Abstract: Networking promotes interpersonal relationship skills necessary for achieving Sustainable development in Business by making businesses access other business resources. The study formulates a mathematical model for establishing the effect of networking on sustainable increase in productivity of agro-allied small businesses in Nigeria. The instrument of data collection is the research questions structured in close-ended five-point Likert scale. The evaluation of the relationship between dependent of productivity and independent variables of strategic entrepreneurship management practice proxied by networking was performed using the Ordinary Least Square regression technique. The study found that networking as indicator of strategic entrepreneurship management has significant effect on sustainable increase in growth of agro-allied businesses in Nigeria. The study recommended the education of small business entrepreneurs on the benefits of networking as a viable option towards business growth and expansion.

Keywords: Network practices, Sustainable development, Business productivity.

INTRODUCTION

Background of study

Collaboration is used by resource-poor small businesses to achieve development. Networks help businesses achieve economies of scale, bring new value-added products to market more quickly and market more effectively than a single small business can. It enables small businesses to maintain their flexibility, but still share financial, human and capital with others to reduce the risks associated with the new global business environment (Nzitunga, 2015). Networking might make a small business more dynamic by boosting its supply chain management (Raymond, 2004), and its customer relationship management (Kalwani & Narayandas, 2013). Partnership agreements allow organisations to benefit from market opportunities and react to customer needs in collaboration, allowing them to more efficiently and effectively do so than they possibly will separately. Strategic partnering is collaboration and partnerships with customers, suppliers, distributors, competitors and other organisations such as consulting firms and research centres. Goleman (2002) stated that network development means spreading risk and expecting others to perform in mutual best interests; seeking a tactical fit among partners so that goals match and action plans show synergy; finding complementary skills, competences and resources in partners; and sharing privileged or confidential information.

Wincent and Westerberg (2005) opined small firms need to manage social and professional networks with other actors and are therefore no longer considered as individual and self-fulfilling units that do not require other actors to be competitive. The individual firm can be seen as an organiser who interacts with other actors to carry out a strategy and build competitive advantage far beyond the scope of the single firm. All collaborating partners can
Focus on their core business and achieve competitive advantage. Having the capability to know about and make use of other firm’s resources is a valuable asset in the harsh competitive landscape of today’s business environment (Wincent & Westerberg, 2005). The benefit of networking for small firms is the right to use technical or commercial resources, improving organisational learning and innovation (Powell et al., 2012). In the preliminary stages of a small firm’s life, access to more external information and guidance is needed. This dependence persists also after the preliminary stages. Access to external knowledge can result to better performance. Small businesses can as well use their network as a foundation for idea generation and gather information to identify entrepreneurial opportunities.

The essential but less appreciated advantage of networking manifests itself is social standing and respect. When a small business joins a network, it can stand for that network. This serves as an assistance to get noticed and acknowledged easily within their respective industry. However, it is imperative to select the correct partners. This is because an unknown firm will not add much value to the firm’s standing. This gain of authenticity exists even when the network fails to attain its core objectives (Bradley, 2006). Strategic partnering improves a firm’s aptitude to learn and realize competitive advantage. However, learning from networking is not easy. Moreover, inferred knowledge is a hefty part of learning which cannot be readily transferred (Oliver, 2001). Therefore, SMEs have to be proficient enough to identify and use outside knowledge for learning, which strongly relates with the theory of “absorptive capability” i.e. a firm’s ability and capacity to identify and make use of outside knowledge for commercial accomplishment (Cohen & Levinthal, 1990).

Oliver (2001) argued that learning from networking is not linear throughout the life cycle of small businesses. Enterprises change their way of learning from networking based on their experience and needs. Experience gained from networking can aid a small business make the best from its networks (Anand & Khanna, 2000). The locus of innovation is no longer within individual firms but in their network (Powell et al., 2012). This relays back to the logic of learning from networking. When Small businesses operate in collaboration, new ideas surface because each small businesses brings their distinctive competence to the network. The probability of success to innovation is also likely to increase when it is developed in a network as it tends to be more technologically and economically feasible (Pittaway et al., 2004). The challenge that remains for SME owner-managers is how to establish and manage the network to realise the benefits offered (Trim, et al., 2008).

Statement of problem

Over the last two decades, owing to the rapid and steady decline in strategic and creative thinking, decline in proper decision making by entrepreneurs and policy makers, and the absence of the capacity of small business owners to simultaneous exploit opportunities innovatively to create competitive advantage for business sustainability, emphasis in entrepreneurship literature has centred on basic managerial skills for entrepreneurs; later came the advocacy for accounting skills needed to boost entrepreneurial competencies. However, reports of high rate of business failures owned by entrepreneurs with adequate funds, accounting and managerial abilities calls for further investigations. A review of extant literature showed relationship between production capabilities and development of small-scale manufacturing enterprises (Unam&Unam, 2013); entrepreneurial skills in resource acquisition strategies and profitability of small businesses (Mohammed &Nzelibe, 2014); however, there is no available literature within the strategic entrepreneurship management construct, focusing on networking as it affects growth of agro-allied small businesses in Nigeria.

Objective of the study

This study empirically determines the effect of networking on sustainable increase in productivity of agro-allied small businesses in Nigeria. The significance of this study was premised on two major pedestals – first, that agriculture has remained the most crucial sector of the Nigerian economy upon which nearly all other sectors depend for growth and development; and secondly the contemporary nature of the study, since the government is presently seeking ways to improve the productivity of the sector and diversify the economy. Hence, the findings and recommendations of this study would be of enormous benefits to academic works, as it is a significant and major contribution to the body of knowledge, which fills the gap in contemporary literature on the strategic entrepreneurship management and development of sustainable agro-allied small businesses in Nigeria.

LITERATURE REVIEW

Conceptual framework

Elikwu (2018) defined networking capability as the firm’s ability to develop and make use of inter-organisational relationships gain access to a variety of resources held by other actors. It is not sufficient to build networks but also crucial for SMEs to accomplish network success. Managing networks is not straight forward for a businesses has to put some efforts in developing trust with partners, sharing resources and working closely for efficiency. Or else, inter-organisational ties or interorganisational learning linkages would just lead to loss of efforts and resources (Gulati et al., 2000). Small businesses with high
networking capability should not only be able to spot strategic partners but also sustain close relations.

According to Amalahu, Obi, Okika & Abiahu (2016), networking capability consists of four elements: coordination, relationship skills, partner knowledge and internal communications. These are different but often appear interrelated. For instance, when a small business has good relationship skills, they will have access to external knowledge, which in turn develop their partnering knowledge (Nzutunga, 2015). A small business coordinating activities helps in synchronizing with different external partners and achieving mutual advantages. Establishing relations with a firm is not sufficient, ability to maintain a healthy relationship, is also of the essence. A vital relationship skill is related to individuals because firms do not have relations but rather individuals/employees who cultivate these relationships (Hakansson, 2014). Hence, small businesses need caution while assigning responsibility to individuals for managing such relations. Small businesses can also focus on understanding their partners and enhancing partner knowledge which is an essential component of networking capability. This partner knowledge can lead to unwavering and long-term relationships between different actors because they can understand each other’s needs and wants better.

Productivity is one of the key determinants of high and sustained growth and in fact a key determinant of long term growth. It remains a vital economic driver for developed and developing countries and would play a critical role in eradicating poverty especially in low-income countries. The agricultural sector generates a substantial level of revenue while increasing real income (Christiaensen & Demery, 2007). It not only employs an estimated 70 percent of the work-force in low income countries, but it is also a major contributor to Gross Domestic Product (GDP) estimated at approximately 30 percent (The World Bank, 2007). Productivity can be defined as the index of the ratio of the value of total output to the value of the total inputs used in the agro related production (Olayemi, 2012). Productivity is measured by analyzing records of production volume by product line, type and production time, while the productivity of the main processing lines is compared with data for main competitors where possible. Productivity in the agricultural sector is measured by value added. By definition, agricultural productivity is the primary source of economic growth and poverty reduction in most agriculture-based economies. The expansion of smallholder farming can lead to a faster rate of growth, by raising the incomes of rural cultivators and reducing food expenditure, and thus reduces income inequality (Bahram & Chitemi, 2008).

The argument that firm growth causes higher productivity is based on the assumption that economies of scale exist; meaning that firms experience a decline in average costs as output increases (Amulu, 2014). The flaw in this argument becomes clear when one considers that SMEs tend not to operate in industries where economies of scale are present, precisely because these are not industries where they are likely to be competitive. On the other hand, economic theory supports the premise that higher productivity causes small and medium enterprise growth, since productivity can be a source of competitive advantage such as low cost production (Nichter, 2004). Adopting the framework presented above and its treatment of the role of capabilities in small and medium enterprise growth, the causal model would go something like this: factors such as education and experience can directly increase the capabilities of SMEs owners and employees; these individuals are then more likely, to adopt or create practices that heighten productivity levels, and this added productivity then contributes to growth. In reality, both of the arguments presented above appear to hold some truth (Amulu, 2014).

It is largely assumed that technology development contributes to firms’ competitiveness and growth, necessitating empirical approaches adopted by economists to measure technology and technical change. (Efendioglu, 2010). The application of strategic entrepreneurship and knowledge management to facilitate technology creation, adaptation and innovation are important, as new technologies such as information and communications technologies (Mile, 2010) and biotechnologies are cross-section technologies and their application to traditional agricultural (Badiru, 2010), manufacturing and service activities can revolutionize both production processes efficiency and business methods, increasing both productivity and competitiveness (UNCTAD, 2011).

Achieving sustainable development, Efendioglu (2010), asserted is largely dependent on the ability to consistently achieve high productivity by mobilising, deploying and utilising the firm’s strategic resources; human capital (UNDP, 2001), finance (Becchetti & Trovato, 2002), knowledge management (Calestous & Lee, 2006), alliance and other physical assets (Lumiste, Lumiste & Kilvits, 2004) in the most effective manner. According to Porter (2000), competitiveness promotes firm sustainable development, anchored on the increased productivity of an enterprises (continuous increases in value-added). To achieve these continuous increases in value-added, Chauvin, Mulangu and Porto (2012) posited that enterprises must transform their ways of competing: they must shift from comparative advantages (low-cost labour) to competitive advantages, namely the ability to compete on cost and quality (Porter, 2000), delivery and flexibility.

Strategic entrepreneurship approach to small and medium enterprises development have been
considered a driving force enhancing technological innovations (Mwangi & Namusonge, 2014), employment generation, increased productivity export promotion to list a few (Nwosu, Oguoma, Ben-Chendo, & Ukoha, 2010). Innovation is key to the productivity as it provides firms with a competitive edge over other firms in the industry; strategically help firms gain entry into new markets (Becheikh et al., 2006). Burrone and Jaiya 2005 put it that the ability of firms to be efficient and productive varies significantly depending on their sector, knowledge management capabilities, vision, resource capabilities and business environment in which they operate.

Production process innovation is the introduction of a new method of production based on knowledge transfer, acquisition or creation (Murray & Pefefitte, 2007); it is strategic integrated technique that involves changes in the production process which is aimed at reducing the costs, wastes and lead time or at improving production efficiency, with a direct and immediate impact on the productivity performance of SMEs (Castillejo, et al., 2012). Innovation works to improve many large and small areas of product design and quality productions, organisation and management routines as well as marketing. It includes modifications in the production process and techniques that collectively reduce costs, increase efficiency, provide for human welfare and ensure environmental sustainability (Munani & Kamau, 2009).

Strategic allocative efficiency structurally stimulates production factors to move from low productivity (low value manufacturing) to high productivity (high value manufacturing) platforms. Inefficiency, Radam, Abu and Abdullah (2008) asserted is a result of using excessive inputs at a given output level or poor output at a given input level. Inefficiency increases cost of production which affects price, sales and revenue. As a result, inefficient SMEs are unable to compete effectively in the market impacting the entire small and medium enterprise (SMEs) sector performance. Thus, Sazali, Alias and Rossazana (2014) stated that an efficient SME uses inputs at optimum levels and hence, reduce the usage of unnecessary inputs to attain the level of a given output or the SME would maximize output at a given input level.

In a study by Monday, Akinola, Ologbenla and Aladeraji (2015) on the application of entrepreneurship and strategic management on operational performance of SMEs; the study shows that over 80% of the respondents indicated that entrepreneurship and strategic management boosts their firms’ production efficiency (reduces costs and increases productivity), aids timely delivery of the products of the firms.

**Theoretical framework**

Upgrading refers to the acquisition of technological capabilities and market linkages that enable firms to improve their competitiveness and move into higher-value activities (Kaplinsky & Morris 2001). Upgrading in firms can take place in the form of: Process upgrading - increasing the efficiency of internal processes such that these are significantly better than those of rivals, both within individual links in the chain, and between the links in the chain. Product upgrading - introducing new products or improving old products faster than rivals. This involves changing new product development processes both within individual links in the value chain and in the relationship between different chain links. Functional upgrading - increasing value added by changing the mix of activities conducted within the firm or moving the locus of activities to different links in the value chain. Difficulties with this classification include that of distinguishing product and process upgrading in specific instances (especially for agricultural products, where for example the introduction of organic processes generates a new category of product) (Gibbon 2003). Kaplinsky and Readman (2001) underlined that there is a hierarchy or a trajectory that is important for SMEs. It is one which begins with process upgrading, then moves to product upgrading, to functional upgrading and last of all, to chain upgrading.

Gibbon (2003) suggested that a first step in understanding upgrading opportunities available to producers in particular global value chains (in this case: producers in developing countries) is to spell out the reward structures of these chains, and the nature of the roles that currently trigger rewards. A second step is to outline preconditions or mechanisms for achieving these roles. As argued by Humphrey and Schmitz (2002), a significant problem for firms which had successfully managed value chains characterized by quasi-hierarchical relationships is the danger of lock-in. Firms find that a large part of their output is going to one or a small number of customers, and they become specialized in one particular activity, usually production, and they either do not develop design or marketing capabilities, or allow such capabilities to diminish because of the strength of the relationship with the global buyer. As such, they become heavily dependent on this relationship.

Humphrey (2003) proposed three main strategic options for combating a lock-in: market diversification, excellence in manufacturing and effective use of knowledge acquired from within the value chain. The body of literature on upgrading opportunities for firms in developing countries addresses buyer-supplier relationships and coordination as a mechanism for access to global markets and upgrading. Humphrey (2003) stated that insertion into value chains can facilitate the entry of developing country firms into export markets as they can specialize in production and do not have to be concerned about such issues as product design, logistics or market requirements in importing countries because these
issues are already addressed by the buyers and their agents. Furthermore, the increasingly stringent requirements (that is, standards) of global buyers in areas such as quality and delivery may offer firms opportunities to add value to products. However, specialization in production activities within the value chain may leave developing country suppliers with a limited understanding of market requirements and few opportunities to develop capabilities in the areas of design and marketing.

Humphrey (2003) also warned that there is danger of developing country producers being trapped in narrowly-confined value chain activities with low skills and low returns. Dolan and Humphrey (2004) argued that there are several implications for upgrading agricultural and manufacturing capabilities in developing countries that cannot be overlooked. Learning and the acquisition of technological capabilities can be stimulated through involvement in global value chains. However, there is no guaranteed path to upgrading as a result of this involvement.

Upgrading involves the development of both technological capability and market access by the firm, but complementary efforts at the local and national levels are needed to stimulate both. Dolan and Humphrey (2004) explains that one of the most important lessons of the East Asian experience is that firms and enterprise development policies must consider integration into global markets as a learning opportunity that has to be maximized through explicit effort and investment by the firms concerned, supported by public and public-private agencies.

Pietrobelli and Rabellotti (2004) pointed out that the literature on functional upgrading shows that although inclusion into global value chains facilitates product and process upgrading, it also means that firms become tied into relationships that often prevent functional upgrading and leave them dependent on a small number of powerful customers. Gibbon (2003) focused attention on lead firms that often sought to explicitly block their suppliers from undertaking functional upgrading, at the same time, lead firms encouraged suppliers to undertake process and usually also product upgrading. Gibbon (2003) argued that combining internationalization and functional upgrading in the form of moving into multiple downstream functions or processes is often extremely resource-demanding. Humphrey and Schmitz (2002) observed also that the process of acquiring new functions (i.e. functional upgrading) which generates higher incomes is potentially a critical part of an upgrading strategy.

A critical question is, however, how value chain relationships affect the process of learning, innovation and the acquisition of technological capabilities. It is important to analyze if upgrading is relatively easy once firms are within global value chains. Furthermore, one can question whether technological learning is ‘a dynamic, difficult and costly process’ or one that needs strategic interventions by firms and support from governments and international agencies. These upgrading strategies require not only the acquisition of capabilities, but also involve changing relationships with buyers and markets (Dolan & Humphrey 2004).

**Empirical Review**

Amulu (2014) in a study investigated the importance of strategic development of entrepreneurship on growth of small business enterprises; focusing on entrepreneurial resource capacity, availability of capital and manpower resource, with government intervention. Employed a sample size of 62 respondents, frequency percentage table to analyse the collated primary data, and the Statistical Chi-Square ($X^2$) was adopted for test of hypotheses. The findings revealed that there is a relationship between entrepreneurial capacity, availability of capital and manpower resource and growth of small-scale industries.

Oloda (2017) conducted a study which investigated the effect of vertical integration strategy on organisational survival in selected Manufacturing firms in Rivers state of Nigeria. The study adopted a sample of 205 managers from the 6 selected firms. Data was collected using the questionnaire methods, while the Spearman Rank-order correlation coefficient was used to test the relationships between the variables under review. Findings from the study revealed that there is positive- significant relationship between the two dimensions of vertical integration strategy used. The findings revealed a positive and significant relationship between the dimensions of vertical integration and organisational survival and growth. In view of this, the study concluded that vertical integration enhances organisational survival and growth.

Gul (2011) investigated the performance effects of vertical, horizontal, unrelated integration and un-diversification strategies, by using a sample of 147 Danish manufacturing companies distinguished among 5 large industries, through the years 2009 to 2005. Empirical evidence shows that horizontal (related) integrated companies are outperforming the corporate performance of unrelated diversified firms, and the structure of the market, the level of concentration have varying effects on performance for each type of industry. Out of 5 industries, the manufacture of food products has the highest average performance measure, and the empirical results underline the significant and positive effect of the horizontal integration strategy for the manufacture of food products and manufacture of machinery and equipment industries that were subject to be tested.

Available Online: [https://iarconsortium.org/journal-info/IARJBM](https://iarconsortium.org/journal-info/IARJBM)
Sirc and Bradac (2014) reviewed how networking impacts on growth of SMEs, focusing on cooperation between firms for various reasons and at various levels. The statistical population of the research comprised of Slovenian small and medium-sized companies (joint-stock companies, limited liability companies, non-limited liability companies) in all Standard Industry Classification (SIC) categories. The study adopted the quota sampling method, while copies of questionnaire were used to gather primary data concerning company owners. The quantitative business research methods was employed; hence, for the purpose of measuring the association or correlation between variables, the Pearson correlation for data in the form of measurements on quantitative variables was used, chi-square statistic $\chi^2$ for nominal data, together with phi coefficient $\phi$ and Cramer's $V$ were also used. For the purpose of comparing averages between different groups, an independent sample t-test for quantitative variables was used.

The findings revealed that, for SMEs, the cooperation with different partners is of utmost importance; they namely lack a certain amount of expertise, knowledge, experience, etc. The study revealed that, the most frequently contacted groups are final customers (76.6% cooperate with them on a monthly basis). Equipment and material suppliers was quoted by 66.7% of respondents, and distributor agents in 29.4% of cases. It is interesting that cooperation with competitive companies ranked higher than supporting, educational, and R&D institutions; hence, the frequency of cooperation with partners depends on the nature of business.

Similar, the findings revealed that, companies that express frequent cooperation with product end users, suppliers, agents and partnering competitors, express income and asset growth. That kind of cooperation enables them to achieve better performance in the value chain, which brings them to a superior competitive position. With such networking, small businesses do not have so much need for hiring additional employees as they can share some activities among partners in the value chain.

**METHODOLOGY**

**Research design**

The research design used in this study was the cross-sectional survey design, associated with the deductive approach used for descriptive research purpose, on the basis that it involves sampling of elements selected from the population of interest, collection of quantitative data to be measured at a single point in time.

**Population of the study**

The population of SMEs for this study consisted of all agro-allied SMEs in the selected States, of the South-South region, registered with the states’ MSME development agencies and the states’ Ministries of Trade Commerce and Industry; with a minimum capital base of one million Naira.

**Samples and sampling**

The minimum returnable sample size from the given population, the Taro Yamane (1967) sample size estimation technique was employed. In order to achieve a minimum response rate of 65% as posited by Cochran (1977) and Bartlett, Kotrlik and Higgins (2001), the oversampling procedure is employed. Furthermore, for the purpose of this study, the multistage random sampling techniques were adopted. This was because the study captured multi-chain aggregate study groups which formed different clusters (firms in various stages of the value chain); hence, the multistage sampling technique. The stratified sampling was adopted to select only SMEs in Agricultural related businesses, from registered SMEs in Akwa Ibom, Delta and Rivers states; the cluster sampling was adopted to further group the SMEs according to the value chain they belong; while the random sampling was adopted to give every member of the population the opportunity of being selected.

For the purpose of this study, both primary and secondary data were collected for the purpose of analysis and test of postulated hypotheses.

The reliability of the items in the instrument was established using Cronbach’s Alpha.

**Analytical technique**

The evaluation of the relationship between dependent and independent variables was performed using the Ordinary Least Square regression technique.

**Model Specification**

The coefficient of the variables measured the effect of the proxies of the independent variable (SEM) on the dependent variable proxies (SAS). Therefore, the general form for the model is given as:

$$Y = f (X_1, X_2, X_n)$$

Where:

$Y$ = dependent variable of Sustainable Development of Agro-Allied Small Businesses;

$f = a$ function to be specified

$X$ = independent variable of Strategic Entrepreneurship Management

In specific form, equation 9 translates into equation 10 thus:

$$Y = a + X_1 + X_2 + X_3 + \ldots \ldots + X_n + e$$

Where:

$Y$ = dependent variable (Sustainable Development of Agro-Allied Small Businesses)

$a = constant$

$x_1, x_2, x_3, \ldots, x_n$ are independent variables
The econometric equation for the model is specified as:

\[ SBG = \beta_0 + \beta_1 \text{FOI} + \beta_2 \text{BAI} + \beta_3 \text{HOI} + \beta_4 \text{NWK} + u_j \]  

\[ \hat{y} \]

Where:
- \( \text{FOI} \): Forward Integration
- \( \text{BAI} \): Backward Integration
- \( \text{HOI} \): Horizontal Integration
- \( \text{NWK} \): Networking
- \( SBG \): Sustainable Business Growth
- \( \beta_0 \): Unknown constant to be estimated
- \( \beta_1, \beta_2, \beta_3, \beta_4 \): Unknown coefficients to be estimated
- \( u_j \): Error Term

The 'a priori expectation' in the model is that the independent variable is expected to have a positive relationship and effect on sustainable development of agro-allied small businesses, measured by sustainable business growth. The mathematical expression is represented as; \( \beta_1 - \beta_4 > 0 \) implying that a unit increase in the independent variables will lead to increase in Sustainable Development of Agro-allied Small Businesses by a unit.

### RESULTS AND DISCUSSIONS

#### Results

**Table 4.2. Regression Result on Networking of strategic entrepreneurship management and effect on sustainable growth**

<table>
<thead>
<tr>
<th>Dependent Variable: SBG</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOI</td>
<td>0.162375</td>
<td>0.043546</td>
<td>3.728818</td>
<td>0.0002</td>
</tr>
<tr>
<td>BAI</td>
<td>0.025631</td>
<td>0.051431</td>
<td>1.984349</td>
<td>0.6185</td>
</tr>
<tr>
<td>HOI</td>
<td>0.101347</td>
<td>0.036973</td>
<td>0.448760</td>
<td>0.0064</td>
</tr>
<tr>
<td>NWK</td>
<td>0.013244</td>
<td>0.029513</td>
<td>2.741117</td>
<td>0.6538</td>
</tr>
<tr>
<td>C</td>
<td>0.150938</td>
<td>0.366458</td>
<td>0.411885</td>
<td>0.6806</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.618409</td>
<td>Mean</td>
<td>8.098326</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.381591</td>
<td>S.D.</td>
<td>3.120131</td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>1.940198</td>
<td>Akaike info criterion</td>
<td>4.177993</td>
<td></td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>1773.018</td>
<td>Schwarz criterion</td>
<td>4.239055</td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-991.5404</td>
<td>Hannan-Quinn criter.</td>
<td>4.201999</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>127.2175</td>
<td>Durbin-Waton stat</td>
<td>1.539893</td>
<td></td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.001885</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Author’s Computation, 2020 (E-views 9.0)

\[ SBG = 0.15 + 0.16 \text{FOI} + 0.03 \text{BAI} + 0.10 \text{HOI} + 0.01 \text{NWK} \]

\[ SEE = 0.37; \] \( 0.04; \) \( 0.05; \) \( 0.03; \) \( 0.02 \)

\[ F^{*} = 3.72; \] \( 1.98; \) \( 0.44; \) \( 2.74 \)

Interpretation of Results

From table 4.2, the calculated \( t \)-value for FOI is 3.72, BAI is 1.98, HOI is 0.44 and NWK is 2.74 (SBG model); while the tabulated value is given as ±1.96, under 95% confidence levels. Since the calculated \( t \)-values (FOI 3.72 > 1.96, BAI 1.98 > 1.96 and NWK 2.74 > 1.96) are greater than the tabulated value (1.96), with the exception of HOI 0.44 < 1.96, which is lesser. However, the average \( t \)-value (2.22 > 1.96) is higher than the critical value, therefore, reject the null hypothesis (H0). We conclude that strategic alliances have significant effect on sustainable growth of agro-allied businesses in Nigeria. Also, by examining the overall fit and significance of Sustainable Business Growth (SBG) model, it can be observed that the model does have a good fit, as indicated by the relatively high value of the \( F \)-statistic, 127.2 and it is insignificant at the 5.0 per cent level; that is, the P Value (rho value) of 0.0019 being less than 0.05 probability levels implies that there is a 0.0019 chance that the equation as a whole is not significant.
More so, the $R^2$ (R-square) value of 0.618409 shows that the model does have a good fit too. It indicates that about 61.84 percent of the variation in Sustainable Business Growth is explained by FOI, BAI, HOI and NWK, while the remaining 38.16 percent is captured by the error term. The findings further revealed that, the focus on agriculture as a viable means of diversifying the mono economic nature of Nigeria has stimulated innovative and creative ideas to grow, transform/process various agricultural (livestock and crop) produce, with entrepreneurial passion coming handy in aiding innovative value creation and addition, of which competitive advantage can also be derived to enrich the value chain system of various agricultural produce, which will further provide room for varieties to boost business growth. Competitive advantage was found to facilitate business growth, creativity and innovation gives technical expertise a boost to achieve tasks more effectively and efficiently, group work was found to encourage creativity and innovation through knowledge sharing. Also, while availability of needed resources and infrastructure is needed to encourage business growth, however, in their absence, a lot of entrepreneurs have been able to think out of the box, seeking and discovering alternatives to achieving same task in the agricultural value chain system. Hence, creativity and innovation make effective coordination of resources produce better results. The test of hypothesis five as shown in Table 4.2 shows that, the calculated t-value for FOI, BAI, HOI and NWK is 2.09, while the tabulated value is given as ±1.96, under 95% confidence levels. Therefore, since the calculated t-value is greater than the tabulated value (2.09 > 1.96), the null hypothesis ($H_0$) was rejected and the alternate hypothesis accepted, which states that, strategic alliances (backward integration, forward integration, horizontal integration and networking) have significant effect on sustainable growth of agro-allied businesses in Nigeria.

**DISCUSSION OF RESULTS**

This finding agrees with the findings of Oloda (2017), that there is positive and significant relationship between the two dimensions of vertical integration strategy (forward and backward integration strategy) and organisational survival and growth; and Gul (2011), whose finding revealed that horizontally (related) integrated companies are outperforming the corporate performance of unrelated diversified firms; hence, there is a significant and positive effect of the horizontal integration strategy for the manufacture of food products and manufacture of machinery and equipment industries. Also, the finding in hypothesis agrees with the finding of Širec and Bradac (2014), whose study established that, companies that express frequent cooperation with product end users, suppliers, agents and partnering competitors, express income and asset growth. That kind of cooperation enables them to achieve better performance in the value chain, which brings them to a superior competitive position. With such networking, small businesses do not have so much need for hiring additional employees as they can share some activities among partners in the value chain.

**CONCLUSION**

Based on findings of hypothesis, the study concludes that, forward integration, backward integration, horizontal integration and networking combined, as indicators of strategic alliance have significant effect on sustainable growth of agro-allied businesses in Nigeria. This is affirmed by the analysis of research question five which shows that, strategic alliances can facilitate use of production equipment of allied businesses for survival and growth, access raw materials for uninterrupted operations, access to reliable distributorship to boost high sales turnover, productive engagement of human capital for competitive advantage and also facilitate use of effective networking to boost market dominance and stimulate business growth.

**Implications of the study**

The educational implication of this study was multidimensional, as it among others. The study filled the existing gap in both literature and empirical studies regarding the absence of any study on strategic entrepreneurship management and development of sustainable agro-allied businesses operating in South-South States of Nigeria. Prior to this study, extant literature variably discussed the concepts of entrepreneurship and strategic management (concerned with growth and wealth creation (Amit & Zott, 2001; Hitt & Ireland, 2000; Hitt, Ireland, Camp & Sexton, 2002; Morris, 1998; Priem & Butler, 2001) and strategic entrepreneurship (concerned with entrepreneurial actions, strategic actions, entrepreneurial orientation and strategic renewal as listed by Singh, 2009); however, this study projected strategic entrepreneurship management as a new concept. Since there was no extant literature that completely integrated strategic entrepreneurship management as a concept, this concept was developed as an improvement on the works of Amit and Zott (2001), Hitt and Ireland (2000), Hitt, Ireland, Camp and Sexton (2002), Morris (1998), Priem and Butler (2001) and Singh (2009), to successfully integrate risk propensity, innovation and creativity, resource mobilisation capacity, knowledge management, strategic alliances and marketing strategies as components of strategic entrepreneurship management concept, and thus lays foundation for strategic entrepreneurship management model and theory, which is significant contributions to existing knowledge.

Furthermore, this study established the fact that, the trend in mortality rate and stagnant nature of agro-allied businesses in South-South Nigeria can be reversed to businesses with sustainable performance, growth and development in terms of technological advancement, capital utilisation, employment...

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generation, increasing productivity (output and efficiency), financial performance and growth, with the adoption and integration of strategic entrepreneurship management practices. This study serves as a reference point for students, researchers, scholars, consultants and practitioners who are desirous in carrying out further research to retest and deepen the validity of strategic entrepreneurship management as a new concept and model and to extend the research to areas not covered in this study.

The policy implications of this dissertation include; Integration of the strategic entrepreneurship management model into the training and capacity development modules for empowerment schemes prior to disbursements of loans and grants. This will help reduce mortality rate of businesses and foster increased collaborations to sustain development of agro-allied businesses in Nigeria; Reduce constraints to access to long-term agricultural loans needed for economic activities, promote technological advancement, encourage employment generation and boost productivity for sustained diversification and economic growth; Prioritise the provision of supportive infrastructures needed to drive the agro-allied sector, as this will provide a platform for sustainability of business productivity, growth and expansion; stimulate innovative and creative participation of youths in the agricultural sector to reduce the rising unemployment and insecurity in Nigeria.

Recommendations of the study

Since the finding of hypothesis five revealed that, strategic alliances have significant effect on sustainable growth of agro-allied small businesses in Nigeria; the following recommendations are therefore proffered; since it has been established that, vertical (forward and backward) integration helps protect steady flow of inputs and reliable supply chain, it is recommended that small businesses can decide to vertically integrate by either offering a percentage of their business or acquiring a percentage of suppliers and distributors businesses; this is to ensure cost effective access to quality raw materials for uninterrupted operations; and also ensure effective and profitable product distribution. In the event of small businesses inability to vertically integrate through acquisition or offering of a share of the business, in order to ensure steady flow of inputs for uninterrupted operations and reliable product distribution chain, it is recommended that entrepreneurs maintain good business relationship with input suppliers and market promoters to enhance opportunity for access to wider markets.

It is recommended that small agro-allied businesses desirous of growth and expansion should ensure effective business networking within the industry to enhance productivity in the event where they lack technological capacity to produce for uninterrupted operations; also effective networking among distributors and complementary goods producers or distributors for profitable product distribution and access to wider markets.

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