SUSTAINING CAPACITY UTILIZATION OF SMALL AGRO-PROCESSING BUSINESSES IN NIGERIA: THE EFFECT OF STRATEGIC ENTREPRENEURSHIP KNOWLEDGE MANAGEMENT

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Abstract
This study empirically analyzed the effect of strategic entrepreneurship knowledge management on the sustainable capacity utilization of small agro-processing and manufacturing businesses in Nigeria, with a specific focus on knowledge creation, integration, and application and their individual effects on the capacity utilization of afro-processing firms in Nigeria. This study adopted the cross-sectional and the archival and documentary research designs, which supported the collection of quantitative data from the selected sample size of 487 participants, who are owners of small agro-allied businesses spread across Akwa-Ibom, Delta, and Rivers states, in the south-south region of Nigeria. Furthermore, the multistage random sampling techniques were adopted, adopted to adequately capture the multi-chain aggregate study groups that formed different clusters (firms). The reliability test conducted on the research instrument revealed the internal consistency of the items within the structure of this study at a Cronbach alpha value of 0.84. Data generated for the study were analyzed using descriptive analytical techniques, while the formulated hypotheses were tested using multiple regression analysis. The findings revealed that strategic entrepreneurship knowledge creation knowledge integration, and knowledge application can significantly enhance the capacity utilization of small agro-allied businesses. The study therefore recommends that small agro-processing businesses should strive to codify and capture knowledge content to increase efficiency by giving access and knowledge to workers at all levels to be part of the continuous process improvement for optimization of the firm's operational capacity.

Keywords: Strategic Entrepreneurship, Knowledge-Management, Knowledge-Creation, Knowledge-Integration, Knowledge-Application

Introduction

The concept and practice of entrepreneurship have in the last decade received more focus by governments at various levels in Nigeria and other developing countries globally. This is premised on its recognition as a significant factor in the dynamics of economic development of less developed and emerging countries; hence, it is considered a catalyst of growth and sustainable development through productive endeavours. With the focus and continuous effort towards the diversification of the Nigerian economy, away from its over-dependence on its mono-product-based economy (Elikwu, 2019); the strive to reposition entrepreneurs through small business enterprises to revitalize stagnated and struggling sectors of our economy and also stimulate viable

economic activities, with potentials of achieving and sustaining optimal capacity utilization of available economic resources, requires the management of strategic entrepreneurship knowledge and techniques for its realization.

The strategic role of knowledge management in achieving and sustaining every sphere of growth and development of economies of the world is anchored on the premise that knowledge serves as the bedrock of survival of the human race, spanning across identification of human-societal-global needs, discovery of opportunities, creative innovations and inventions (Elikwu, Ndubuisi &Obayi, 2020), and the increased competitive advantage it gives to firms and nations (Igbokwe & Elikwu, 2019). Within the agricultural sector, the management of strategic entrepreneurship knowledge has not been credited for the increasing provision and sustenance of agricultural produce, enabling high foreign exchange revenue earning capacity through the export of surplus produce (Elikwu &Adio, 2015); providing raw materials for the industrial sector, promoting technological advancement and employment for the ever-increasing world population (Akpan, Okon& Udoka, 2014).

Knowledge has most often been perceived only as the codified and documented information captured like patents, databases, manuals, and white papers among others, commonly referred to as "explicit knowledge" (Bhattacharya & Chaudhury, 2004). However, the importance of tacit knowledge, which is the basis of value creation and or addition, creative and innovative inventions, continuous process improvements, and competitive advantage (Elikwu, et al., 2020), embedded in the minds of diverse individuals (intrapreneurs/entrepreneurs), has not been given much attention in the entrepreneurship literature. In this study, tacit knowledge is described as contextual entrepreneurial intuitions connected to acquired experiences and precious memories, of which attempts to collate, record, and communicate it is considered difficult. Bhattacharya and Chaudhury (2004) assessed that tacit knowledge often constitutes between 70 and 80% of all knowledge in an organization and is difficult to identify, quantify, and convert into real value unless a structured approach is adopted to manage knowledge.

In Nigeria, the growing level of insecurity, coupled with the dynamic and harsh business environment, have cumulatively resulted in the inability of small agro-processing and manufacturing businesses to optimally utilize their productive capacity, thereby exposing them to fierce and unfair competition, declining productivity (Chiekezie& Elikwu, 2016), and winding up in extreme cases. There is also the inability of small agro-processing and manufacturing businesses to engage and or retain highly experienced individuals with requisite training and knowledge to optimize the firm's production capacity, and continuous improvement in the value chain production process for enhanced productivity, growth, and sustainable development(Igbokwe & Elikwu, 2019).

Some other problems affecting the small ago-processing and manufacturing businesses in Nigeria are the technical and technological dependence on other countries and lack of innovation, poor quality of processed agricultural products, and limited scope of operation, among a myriad of other obstacles (Elikwu, et al., 2020). These problems hamper the sustainable growth and development of this subsector and have, in most cases, led to the winding up of several small agro-processing and manufacturing businesses. Hence, the optimal functionality of these processing or manufacturing businesses resides at the core of high-impact and sustainable initiatives focused on entrepreneurial knowledge management, to improve capacity utilization, productivity, competitiveness, and sustainable development of small businesses.

The advancement in global technological applications in businesses behooves small processing and manufacturing businesses to tap into the numerous advantages that come with this evolution. As a result, most small businesses are being left behind due to a lack of strategic creativity and innovation, which is the ability to continuously transform knowledge and ideas into new products, processes, and systems for the benefit of the firm (Elikwu, et al., 2020). However, very few small agro-allied businesses struggle to operate, manage, and improve their businesses to consistently deliver quality products and services.

Understanding what constitutes knowledge is central to its effective management; however, knowledge itself has suffered from severe underutilization, especially by small business owners and managers. The inability of agro-allied

businesses to optimize knowledge management has resulted in managerial ineffectiveness, dwindling employee and firm productivity, inappropriate utilization of human and material resources (Elikwu, Ndubuisi &Obayi, 2019), stagnated growth, increasing operational cost, and more importantly, resulting in poor capacity utilization. Though extant literature exists on the relationship between capacity utilization and foreign market competition (Pidani& Mahmood, 2016), the relationship between knowledge management and performance (Kinyua, 2015), knowledge management infrastructure organizational performance of SMEs, focusing on the capacity utilization of resources, however, there is no available empirical study within the strategic entrepreneurship management construct, which is the gap this study seeks to fill.

From the foregoing, the need to sustainably develop agro-processing and manufacturing businesses in promoting the agricultural value chain cannot be over-emphasized; hence, this study empirically analyzed the effect of strategic entrepreneurship knowledge management on sustainable capacity utilization of small agro-processing and manufacturing businesses in Nigeria. Premised on the above, the following research questions were posited specifically to determine;

i. How can strategic entrepreneurship knowledge creation support the capacity utilization of small agro-allied businesses in Nigeria?
ii. To what extent can strategic entrepreneurship knowledge integration stimulate capacity utilization of small agro-allied businesses in Nigeria?
iii. To what extent can strategic entrepreneurship knowledge application enhance the capacity utilization of small agro-allied businesses in Nigeria?

In line with the raised research questions, the specific objectives of this study are to:

i. determine how strategic entrepreneurship knowledge creation can support capacity utilization of small agro-allied businesses in Nigeria;
ii. establish the extent strategic entrepreneurship knowledge integration can stimulate capacity utilization of small agro-allied businesses in Nigeria;
iii. establish the extent to which strategic entrepreneurship knowledge application can enhance the capacity utilization of small agro-allied businesses in Nigeria.

To achieve the specific objectives, the following hypotheses were formulated in the null (H_0) form for testing:

H_{01}: Strategic entrepreneurship knowledge creation cannot significantly support the capacity utilization of small agro-allied businesses.

H_{02}: Strategic entrepreneurship knowledge integration cannot significantly stimulate the capacity utilization of small agro-allied businesses.

H_{03}: Strategic entrepreneurship knowledge application cannot significantly enhance the capacity utilization of small agro-allied businesses.

Literature Review

Strategic Entrepreneurship Management

Entrepreneurship involves identifying and exploiting entrepreneurial opportunities. However, to create the most value entrepreneurial firms also need to act strategically. This calls for an integration of entrepreneurial and strategic thinking as opined by Helsinki, Josef, and Kauranen, (2009). Further to this, Hitt*et al.*, (2001, 2002) explored strategic entrepreneurship in several important organizational domains to include external networks and alliances, resources and organizational learning, innovation, and internationalization. They examined both traditional (contingency theory, strategic fit) and new theories (cultural entrepreneurship, business model drivers). The research also considered creative disruption (discontinuities), resource-based view, organizational learning, network theory, transaction costs, and institutional theory. Mehta (2011) proposed the adoption and usage of customer relationship management (CRM) as an interactive entrepreneurial tool for strategic and successful relationship management at Indian SMEs, thus corroborating the yearnings for strategic entrepreneurship for small businesses in the Nigerian context.

The concept, of strategic entrepreneurship management, as developed by Elikwu (2019) is the totality of entrepreneurial and strategic actions needed for the exploitation of future opportunities; which entails risk-taking propensity, strategic networks and alliances,

resources mobilization capacity, creativity and innovation, knowledge management, and marketing strategies, all combined to gain competitive advantage and achieve sustainability in the overall performance of businesses. The integration of strategic entrepreneurship management techniques in achieving long-term business goals entails integrating innovative technical strategies, and value-addition mechanisms for sustainable growth (Eisenhardt & Martin, 2002). 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 (Elikwu, et al., 2020) 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). Thus, within the strategic entrepreneurship management context, knowledge management is considered the most valuable asset inherent in a firm's human capital which adds value to every aspect, process, and functional area of a firm's operations (Elikwu, 2019).

Knowledge Management

Understanding what constitutes knowledge is central to its effective management (Pathirage, Amaratunga & Haigh, 2007). However, knowledge itself has suffered from severe definitional issues. Grey (1996) opined that knowledge is the full usage of information and data, together with the potential of ideas, commitment, motivation, people's skills, competencies, and intuitions. However, knowledge is defined as a human process of justifying personal belief towards reality (Nonaka & Takeuchi, 1995). Nevertheless, these two definitions stress the involvement of human beings, and as Beveren (2002) asserts "even though some argue knowledge can be acquired, stored and used outside of the human brain, knowledge cannot exist outside of the human brain and that only information and data can exist outside of the brain".

Ristovska, Popovska, and Stankosky (2010) described knowledge as familiarity, awareness, and understanding gained through experience or study and results from making comparisons, identifying consequences, and making connections. It could also mean expertise and skills acquired by a person (Dalkir, 2011), through experience or education; the theoretical or practical understanding of a subject (Andreeva & Kianto, 2012). The creation and diffusion of knowledge have become an increasingly important factor in competitiveness (Kongpichayanond, 2009); therefore, for organizations to survive, remain competitive, and experience growth, the ability to manage change is crucial in today's knowledge economy (Sengupta, Bhattacharya & Sengupta, 2012), as change aimed at by most organizations is broadly to enhance technical capabilities (Vorotilin, 2009); managerial effectiveness (Droege & Hoobler, 2003); proper utilization of resources (Kongpichayanond, 2009); attitudes and work culture (Schein, 2004), among others which are all knowledge enabled.

The effective application of human knowledge in a firm is an essential strategic organizational tool for competitive advantage (Alavi & Leidner, 2001; Drucker, 1999), while numerous scholars have concluded that organizations can enhance the quality of service delivery through the proper management of knowledge and by effectively managing available intellectual capitals (Birasnav & Rangnekar, 2010), through constant acquisition and sharing, applying and integrating knowledge within the firm (Huang & Li, 2009).

Knowledge management processes and practices

A comprehensive view of the knowledge management process according to Yang and Wan is that it is a process of collecting and identifying useful information (knowledge acquisition), transferring tacit knowledge to explicit knowledge (knowledge creation or transfer), storing the knowledge in the repository (organizational memory), disseminating it through the whole organization (knowledge sharing), enabling employees to easily retrieve it (knowledge retrieval) and exploiting and usefully applying knowledge (knowledge leverage)" (Yang & Wang, 2004). However, several generic and specific frameworks for the practice of knowledge management have emerged over the years, with many containing variations of familiar management processes (Davenport & Prusak, 2000). To be considered a valuable resource to an organization (Elikwu, et al., 2020), the process of knowledge management must include Knowledge creation and acquisition (McElroy, 1999), transfer

and utilization (Bukowitz& Williams, 2003), application (Wiig, 2003), integration (McElroy, 1999), protection (Zack, McKeen & Singh, 2009), sharing (Wiig, 2003, Zack, et al., 2009), and Retention (Dewah, 2011).

Knowledge Creation and Acquisition: Knowledge creation as a process refers to the initiatives and activities undertaken towards the generation of new ideas or objects (Mitchell & Boyle, 2010). A firm can develop new ideas and solutions regarding different aspects of organizational activities (Nonaka, 1991). According to Mills and Smith (2011), the term ''acquisition'' refers to a firm's ability to identify, obtain, and accumulate knowledge (whether internal or external) that is essential to its operations. The external sources for an organization to acquire knowledge could be through hiring people possessing the required knowledge or by purchasing knowledge assets such as patents, research documents, or other intelligence (Wong & Aspinwall, 2004).

Knowledge Adoption and Integration: Krishnan (in Akinniyi, 2013) highlighted some reasons for the adoption of Knowledge Management in the manufacturing industry. These reasons Krishnan asserts include: Manufacturing becoming more collaborative than ever before; Manufacturing needs history of previous product runs/projects on configuration, yield, machines, and documentation; Improved productivity in terms of shorter cycle time, outsourcing, and cost control; Need for everyone to get consistent information; Destructive reorganization of professional skills; Experts leaving the company; recruits taking a long time to acquire professionalism; and Weak collective learning/capacity for innovation. McElroy (1999) described knowledge integration as the process by which an organization introduces new knowledge claims to the operating environment and retires old ones. The process McElroy asserts includes all knowledge transmission processes such as teaching, knowledge sharing, and other social activities that either communicate an understanding of previously produced organizational knowledge to knowledge workers or integrate newly muted knowledge. Dalkir (2011) asserted that integration is making knowledge known and a state whereby knowledge is evaluated and a conscious decision is made as to whether or not it will be integrated into the organizational memory. It focuses on processes to identify knowledge content that is of value to the organization and the employees. There are several general methods to getting knowledge out throughout the organization. Within organizations, knowledge can be integrated through broadcasting, searching, teaching, and sharing (Ragsdell, 2009).

Knowledge Application and Utilisation: Knowledge application procedures are those expected for genuine utilization of learning. It is expected that if a firm can create knowledge it will be connected viably (Zack et al., 2009). Knowledge application qualities are central to the administration of information capacity, recovery, application, commitment, and sharing (Almeida, 1996). The value of individual information and knowledge controlled by an organization exists on the variability of how successful it is connected; hence, it encourages organizations to continually change their authoritative capability into material yields (Zaim, Tatoglu& Zaim, 2007). The range of potential uses for information is virtually unlimited depending upon the needs and activities of the knowledge workers and management within the organization (Bergeron, 2003). The knowledge that an employee fails to use or share is of little importance to an organization. Bhatt (2001) stated that making knowledge more active and relevant for the organization in creating values depends on applying and sharing this knowledge. The ultimate goal for knowledge Ragsdell (2009), asserts, is to get the right knowledge to the right people at the right time and to help people share and use it to improve organizational performance. Arguably, the real value of all Knowledge Management processes comes from the effective utilization of individual and organizational collective knowledge (Wong & Aspinwall, 2006).

There are employees, who carry large volumes of knowledge (tacit knowledge) in their heads, but they may not be prepared to or the environment may limit them from saying much. Tiwana (2008), suggests that to make better use of tacit knowledge, a way must be found for it to be transferred directly to one another, making it explicit so that it can be shared throughout the organization. Individuals who are rich in tacit knowledge (experienced employees, retirees, and other talented experts) constitute a wealth of intangible assets for the organization (Nonaka & Takeuchi 1995).

Sustainable Capacity Utilisation

Capacity utilization has emerged as a rationale for these short-lived productivity improvements. A temporary increase in productivity may suggest that firms simply take advantage of their underutilized capacity in the new markets and it is not an actual change in total factor production (Pidani & Mahmood, 2016). Capacity underutilization, therefore, can be used as an indicator of the waste of scarce resources of capital and foreign exchange. While openness is largely supported by the idea of the beneficial effects of competitive forces, the question of whether a higher degree of openness leads in effect to an improvement in the use of resources remains under-explored. A firm is assumed to operate on a precautionary slack or spare capacity to anticipate demand uncertainty in the long run. Hence, a firm, with a set of capacities in place, will maximize the quantity of the existing capacity ex-post receiving the information about their product's demand where the average costs are then minimized due to a scale effect (Damijan&Kostecv, 2005).

Capacity utilization is defined as the ratio of some base output (actual output) to capacity output (potential output) (Kirkley *et al.*, 2002). As to the potential output, we use the economic approach of the maximum amount of output that can be produced in the short run with the existent stock of capital (Nelson, 1989). Based on this view, capital can be adjusted to achieve optimal levels (cost-minimizing, profit-maximizing) in the long run. In the short run capital is fixed and only the variable inputs can be varied. This approach also implies that capacity utilization may be a short-run concept as there exists in every sector of the economy overcapacity and under-capacity, which evolves relative to growth and fall of its demand side or it is simply part of the business cycle fluctuations that are interpreted as firm's resource allocation strategy (Elikwu, 2019). Some capacity utilization measurements have been frequently cited in the business and economic literature. However, the most direct and common means of obtaining numerical capacity utilization ratios is by asking firms based on their assessment the extent to which they are using available capacity in their various plants. This method has been used widely by industry and business survey institutions including the World Bank to provide information on capacity utilisation in both developed and developing countries.

Empirical Review

Pannu (2017) conducted a study on the impact of knowledge management infrastructure on organizational performance in SMEs, focusing on the capacity utilization of resources. They assert that the evaluation of knowledge management (KM) performance has become increasingly important since it provides the reference for directing organizations to enhance their capacity and competitiveness. This study aims to determine the impact of knowledge management infrastructure on the Organisational Performance of SMEs that need knowledge to perform their work and tasks. Organizations should establish knowledge directorates to discover and transmit knowledge to workers to improve the creativeness and distinctiveness of organizations. The use of KM practices can contribute to the overall growth of SMEs by simultaneously and significantly enhancing their performance. The findings indicated that there was a strong effect of knowledge management infrastructure on Organisational Performance.

Chiekezie and Elikwu (2016) in a study investigated the influence of knowledge management on production capacity optimization in the manufacturing sub-sector. A descriptive survey design was adopted. A sample size of 298 was employed; primary data was collected, while Pearson Product Moment Correlation was used to test the formulated hypotheses. The findings of their study revealed that knowledge management has a significant positive influence on continuous process improvement in selected manufacturing firms. It was also found that knowledge Management has a significant positive influence on the optimal utilization of technology among the selected manufacturing firms. Again, Knowledge Management has a significant positive influence on the quality of products among the selected manufacturing firms. Based on the findings, the study concluded that the optimal performance of manufacturing firms in South East Nigeria depends on effective knowledge management. The study therefore recommended that manufacturing firms should strive to codify and capture knowledge content to increase efficiency by giving access and knowledge to workers in all units, departments, and at all levels to be part of the continuous process improvement for optimization of the firm's production capacity.

Pidani and Mahmood (2016) in a study examined the uses of firm-level data (knowledge management) of small and medium manufacturing firms in Indonesia, the Philippines, and Vietnam and studied the relationship between capacity utilization and foreign market competition for the possibility of efficient firms self-selecting themselves instead of learning-by-exporting to enter the foreign markets. The study estimated both linear and quadratic models on an unbalanced variance of exporting and non-exporting firms, thus, the findings showed that the impact of foreign market competition on capacity utilization follows a curvilinear relationship with a diminishing marginal point as a constraint for further expansion. The capacity utilization rate in the non-exporting group not only emphasizes a strong domestic market orientation of firms at large but also indicates the selection of learning-by-exporting entry mode by exporter SMEs in these countries.

Kinyua (2015) conducted a study to investigate the relationship between knowledge management and the performance of Commercial Banks in Kenya, with one of the specific objectives being to determine the relationship between knowledge management practices and the effect of human capital performance. To achieve this, the study adopted an explanatory and cross-sectional survey design, with the target population of this study comprising all the forty-three Commercial Banks in Kenya, focusing on five functional areas comprising human resource, finance, marketing, information communication technology, and operations. The study used primary and secondary data. Descriptive statistics was used to summarise the survey data while inferential statistics was used for testing hypotheses and drawing conclusions. The findings of the study established that knowledge management positively influences human capital performance capacity in the five functional areas and in performing their tasks, which has enhanced the utilization of the organization's knowledge base and firm's absorptive capacity leading to the development of new products and processes as well as improvement of the existing products and processes.

Theory of Dynamic Capabilities

According to Teece (2007), dynamic capabilities are 'the foundation of enterprise-level competitive advantage in regimes of rapid (technological) change'. Teece, further argued that dynamic capabilities are component capabilities that are 'necessary to sustain superior enterprise performance' (capacity utilization, production efficiency, and productivity) in a highly dynamic environment. The dynamic capabilities theory suggests that to compete successfully in their markets, firms need two types of capabilities: 'Ordinary' capabilities allow organizations to operate their chosen lines of business efficiently and effectively, while 'dynamic capabilities help them to upgrade their ordinary capabilities, or to create new ones (Winter, 2003). Teece, et al, (1997) argued that dynamic capabilities are particularly important for performance in situations of environmental change when a firm's need to rejuvenate its set of capabilities is greatest. According to Easterby-Smith and Prieto (2008), dynamic capabilities can take on multiple roles in organizations, such as changing resource allocations, organizational processes, knowledge creation, integration, and decision-making.

In the dynamic capability framework, Teece (2007) argued that the sustainable advantage comes from improving internal processes, structures, and procedures to generate innovations, be they technological or organizational. He further argued that the dynamic capabilities framework recognizes analytical functions that must be performed at the enterprise level to sustain success. Thus, dynamic capabilities theory seeks to explain what it is that enables organizations to adapt to environmental changes to either sustain or acquire competitive advantage for sustainable technological advancement, capacity utilization, and productivity, among others.

According to Ambrosini, Bowman, and Collier (2009), the dynamic capability notion lies at the heart of the entrepreneur's ability to enact change in a systematic way that gives the firm a competitive advantage over its contemporaries. Hence, dynamic capabilities involve the organizational processes by which resources (entrepreneurial knowledge management practices) are utilized to create growth and adaptation within changing environments and permit the renewal and reconfiguration of a firm's resources (Eisenhardt & Martin, 2000).

Methodology

This study adopted the cross-sectional survey and the archival and documentary research design, associated with the deductive approach used for

descriptive research purposes, 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 (Saunders, Lewis& Thornhill, 2009). The population of this study comprised a total of eleven thousand, six hundred and seventy-three (11,673) small agro-allied businesses spread across three selected states in the south-south. The population was drawn from Akwa Ibom State (4,212), Delta State (2,154), and Rivers State (5,307), all in the South-South. Based on the applied sample estimation technique, and to achieve a minimum response rate of 65% as posited by Cochran (1977) and Bartlett, Kotrlik, and Higgins (2001), the oversampling procedure was employed. Hence a sample size of four hundred and eighty-seven (487) was arrived at, as the number of small agro-allied businesses involved in this study. The reliability test conducted for each of the latent variables indicated that all the variables are reliable and are certified for further analysis, as all the variables showed an average Cronbach Alpha value of 0.84 for the research instrument.

Data Analysis Techniques and Model Specification

Data generated for the study were analyzed using descriptive analytical techniques. The analytical techniques included the use of simple percentage frequency distribution tables to analyze data from the questionnaire, while the formulated hypotheses were tested using multiple regression analysis.

SEKM = $f\ (KNC + KNI + KAP)$…… ……. *(1)*

Model Specification

$SCU = f$ (SKEM)

$SCU = f\ (KNC_1 + KNI_2 + KAP_3)$ …….. (2)

The econometric equation for the model is specified as

$SCU = \beta_0 + \beta_1 KNC_1 + \beta_2 KN1_2 + \beta_3 KAP_3 + u_1$ .. (3)

Where:

β_0 = Unknown constant to be estimated

β_1 = Unknown coefficients to be estimated

Ui= Error Term

$\beta_1 > 0$

Results and Discussions

To establish the extent to which knowledge management can enhance capacity utilization of agro-allied small businesses in South-South Nigeria

Table 1 shows the analysis of data on respondents' view of knowledge management practices as a Strategic Entrepreneurship Management indicator.

Knowledge Creation: On whether the acquisition of knowledge from similar firms helps boost the creation of new operation/process knowledge, 44% strongly agreed and 55% agreed with the statement, however, only 1% of the respondents disagreed. This implies that 99% of the sample size agree and think that the acquisition of knowledge from similar firms helps boost the creation of new operation/process knowledge. On whether generating knowledge within the firm through dedicated employees tends to be more effective 26% of the respondents strongly agreed and 43% agreed. However, 5% remained undecided, 21% of the respondents disagreed and 5% strongly disagreed. This implies that 69% of the respondents, the majority agree that, generating knowledge within the firm through dedicated employees tends to be more effective. However, 27% of the respondents who disagree might think that knowledge generation within the firm might not be good enough.

Table 1: Analysis of Respondent's View on Knowledge Management Practices as a Strategic Entrepreneurship Management Indicator

Variables	Items	Agreement Scale				
		SA (%)	A (%)	UN (%)	D (%)	SD (%)
Knowledge Creation	Acquisition of knowledge from similar firms helps boost the creation of new operation/process knowledge	44%	55%	0%	1%	0
	Generating knowledge within the firm through dedicated employees tends to be more effective	26%	43%	5%	21%	5%
	Brainstorming with other entrepreneurs to develop new ideas	19%	52%	9%	14%	6%
	Adapting ideas from new products, technologies, and market-driven changes helps create new ideas	26%	46%	8%	13%	7%

	Partnering with other technical experts to develop new ideas	5%	18%	16%	38%	23 %
Knowledge Integration	Engaging in new ways to acquire production or service process-enhancing knowledge	24%	48%	3%	21%	4%
	Knowledge acquired is restructured to suit the peculiarity of the business process	35%	59%	0	4%	2%
	Knowledge restructured is integrated into firms' operational process	53%	41%	0	4%	2%
	Integrating knowledge through orientation and on-the-job training for new and existing employees	37%	63%	0	0	0
Knowledge Application	Application of technical knowledge to sustain business operational process	36%	58%	0	3%	3%
	Application of accounting knowledge to sustain financial decision-making	25%	60%	0	11%	4%
	Application of marketing knowledge to sustain high sales turnover	46%	51%	1%	2%	0
	Application of processing knowledge to sustain product/service quality and output	38%	59%	2%	1%	0
	Application of human resource knowledge to sustain employee productivity	28%	47%	4%	16%	5%

Source: Field Survey (2018)

On whether brainstorming with other entrepreneurs to develop new ideas, 19% and 52% of the respondents strongly agreed and agreed respectively, 9% remained undecided, while 14% and 6% disagreed and strongly disagreed respectively. This implies that the majority of the respondents engage in brainstorming with other entrepreneurs as a viable way to develop new ideas. Also, on whether adapting ideas from new products, technologies, and market-driven changes helps create new ideas, 26% of the respondents strongly agreed and 46% agreed respectively, 8% remained undecided, while 13% and 7% of the respondents disagreed, and strongly disagreed. This implies that 72% of the respondents think that, adapting ideas from new products, technologies, and market-driven changes helps create new ideas.

Finally, on whether respondents partner with other technical experts to develop new ideas, 5% of the respondents strongly agreed, while 18% agreed. However, 16% remained undecided, while 38% disagreed and 23% disagreed. This implies that only are few of the respondents representing 23% have the technical capacity to partner with other experts to develop new ideas. However, the majority of the respondents representing a total of 61% of the sample size disagreed. Hence, most of the respondents do not partner with other technical experts to develop new ideas.

Knowledge Integration

On whether respondents engage in new ways to acquire production or service process-enhancing knowledge, 24% strongly agreed and 48% agreed with the statement. However, 3% were undecided, 21% disagreed and only 4% of the respondents strongly disagreed. This implies that 70% of the sample size agreed that, they engage in new ways to acquire production or service process-enhancing knowledge. On whether the knowledge acquired is restructured to suit the peculiarity of respondents' business processes, 35% of the respondents strongly agreed and 59% agreed. However, 4% of the respondents disagreed and only 2% strongly disagreed. This implies that 94% of the respondents, the majority agree that, knowledge acquired is restructured to suit the peculiarity of their business processes. Also, on whether knowledge restructured is integrated into firms' operational process, 53% and 41% of the respondents strongly agreed and agreed respectively, while 4% and 2% disagreed and strongly disagreed. This implies that the majority of the respondents representing 94% integrate restructured knowledge into their firms' operational process. Finally, on whether orientation and on-the-job training for new and existing employees help in integrating knowledge in the firm, all the respondents, representing 37% of the sample size strongly agreed and 63% agreed respectively. This implies that all the 487 respondents representing 100% of the sample size of the opinion that, knowledge is integrated

through orientation and on-the-job training for new and existing employees.

Knowledge Application

On whether respondents engage in the application of technical knowledge to sustain business operational processes, 36% strongly agreed and 58% agreed with the statement, however, only 3% of the respondents disagreed and strongly disagreed. This implies that 94% of the respondents agree that they engage in the application of technical knowledge to sustain business operational processes. On whether respondents engage in the application of accounting knowledge to sustain financial decision-making; 25% of the respondents strongly agreed and 60% agreed. However, a total of 17% (11% and 5%) of the respondents disagreed and strongly disagreed respectively. From the analysis, the majority of the respondents engage in the application of accounting knowledge to sustain financial decision-making, even though most of the micro business owners only have basic monetary arithmetic knowledge.

On whether respondents engage in the application of marketing knowledge to sustain high sales turnover, a total of 224 respondents representing 46% strongly agreed and 248 respondents representing 51% agreed that they apply marketing knowledge they acquired or learned over time to sustain high sales turnover. However, only 1% of the respondents remained undecided, while only 2% disagreed. This implies that the majority of the respondents representing 97% of the sample size engage in the application of marketing knowledge to sustain high sales turnover. Also, on whether respondents engage in the application of processing knowledge to sustain product/service quality and output, 38% of the respondents strongly agreed and 59% agreed respectively, while 2% remained undecided, and only 1% of the respondents disagreed. This implies that 97% of the respondents engage in the application of processing knowledge to sustain product/service quality and output. Finally, on whether respondents engage in the application of human resource knowledge to sustain employee productivity, 28% of the respondents strongly agreed, while 47% agreed. However, 4% remained undecided, while 16% disagreed and 5% disagreed. This implies that 75% of the sample size engages in the application of human resource knowledge to sustain employee productivity.

Table 2: Analysis of Respondent's View on Capacity Utilisation as a Sustainable Development Indicator for Agro-Allied Small Businesses

Variables	Items	Agreement Scale				
		81% - 100% (%)	**61% - 80% (%)**	**41% - 60% (%)**	**21% - 40% (%)**	**1% – 20% (%)**
Capacity Utilization	The use and processing of material resources daily always reaches	0	9%	27%	40%	24%
	Available technology employed for operations and processing performs at	39%	34%	27%	0	0
	The percentage of monthly production output target achieved by employed manpower is	1%	18%	36%	24%	21%
	The optimal engagement of the distribution network is	19%	38%	51%	4%	2%
	Regular maintenance of available technology to boost operation process capacity by	44%	36%	12%	8%	0

Source: Field Survey (2018)

Table 2 shows the analysis of data on respondents' view of capacity utilization as a sustainable development indicator for agro-allied small businesses. On the capacity of the use and processing of material resources daily, the findings reveal that 9% of the respondents achieve between 61% and 80%, 27% of the respondents achieve between 41% and 60%, 40% of the respondents are only able to achieve between 21% and 40%, while 24% of the respondents are also only able to achieve between 1% and 20% of their daily material processing.

This implies that the majority of the businesses representing 64% are only able to achieve a maximum of 40% processing capacity. On the capacity of available technology employed for operations and processing, the analysis revealed that 39% of the respondents achieve between 81% and 100% capacity usage of available technology, 34% of the respondents achieve between 61% and 80% capacity usage of available technology, while 27% of the respondents can achieve between 41% and 60% capacity usage of available technology. This implies that the majority of the businesses representing 71% have below 80% capacity utilisation of available technology employed for operations and processing.

On percentage of monthly production output target achieved by employed manpower, the analysis revealed that only 1% of the respondents achieve between 81% and 100% production output target by employed manpower, 18% of the respondents achieved between 61% and 80% production output target by employed manpower, 36% of the respondents achieve between 41% and 60% production output target by employed manpower, 24% of the respondents achieve between 21% and 40% production output target by employed manpower, while 21% of the respondents can achieve between 1% and 20% production output target by employed manpower. This implies that the majority of the businesses representing 81% have below 80% monthly production output target met by employed manpower. On capacity of optimal engagement of distribution network achieved, the analysis revealed that only 19% of the respondents achieve between 81% and 100% optimal engagement of distribution network, 38% of the respondents achieve between 61% and 80% optimal engagement of distribution network, 51% of the respondents achieve between 41% and 60% optimal engagement of distribution network, 4% of the respondents achieve between 21% and 40% optimal engagement of distribution network, while only 2% of the respondents can achieve between 1% and 20% optimal engagement of distribution network. This implies that the majority of the businesses representing 57% have below 60% optimal engagement of the distribution network.

On regular maintenance of available technology to boost operation capacity, the analysis revealed that only 44% of the respondents achieve between 81% and 100% maintenance of available technology to boost operation capacity, 36% of the respondents achieve between 61% and 80% maintenance of available technology to boost operation capacity, 12% of the respondents achieve between 41% and 60% maintenance of available technology to boost operation capacity, while 8% of the respondents achieve between 21% and 40% maintenance of available technology to boost operation capacity. This implies that the majority of the businesses representing 80% are optimally maintaining available technology to boost operation capacity above 80% capacity.

Test of Hypotheses

Model: $SCU = \beta_0 + \beta_1 KNC_1 + \beta_2 KN1_2 + \beta_3 KAP_3 + u_1$ ……... (4)

Table 3: Regression Result on knowledge management potency to sustain capacity utilization

Dependent Variable: SCU
Method: Least Squares
Date: 06/08/18 Time: 20:25
Sample: 487
Included observations: 487

Variable	Coefficient	Std. Error	t-Statistic	Prob.
KNC	0.129992	0.205603	3.204668	0.0014
KNI	0.187324	0.135918	4.296625	0.0168
KAP	0.123089	0.302788	3.754073	0.0002
C	0.499027	0.324979	1.535570	0.1253

R-squared	0.664906	Mean dependent var	8.274059
Adjusted R-squared	0.660637	S.D. dependent var	2.953553

S.E. of regression	1.720589	Akaike info criterion	3.937747
Sum squared resid	1394.361	Schwarz criterion	3.998808
Log-likelihood	-934.1214	Hannan-Quinn criteria.	3.961753
F-statistic	155.7623	Durbin-Watson stat	1.781541
Prob(F-statistic)	0.001753		

Source: Author's Computation, 2018 (E-views 9.0)

SCU = 0.49 + 0.13 KNC + 0.18 KNI+ 0.125 KAP …….. (5)
SEE = 0.32: 0.19
t^* = 1.53: (7.21; 3.2; 2.61)
F^* = 155.7: Prob (F-statistic) = 0.0017
R2 = 0.6649: *Adj. R2* 0.6606

From Table 4, the calculated t-value for KNC is 3.2, KNI is 4.29, and KAP is 3.75(SCU model); while the tabulated value is given as ±1.96, under 95% confidence levels. Since the calculated t-values (KNC 3.2 > 1.96; KNI 4.29 > 1.96 and KAP 3.75 > 1.96) are all greater than the tabulated value (1.96), this implies that all the knowledge management indicators (KNC, KNI, and KAP) individually have the potency to sustain capacity utilization; we therefore, reject the null hypotheses ($H_{01,}$ H_{02} & H_{03}). We conclude that strategic entrepreneurship knowledge creation can significantly support capacity utilization; strategic entrepreneurship knowledge integration can significantly stimulate capacity utilization; and strategic entrepreneurship knowledge application can significantly enhance capacity utilization of small agro-allied businesses.

Also, by examining the overall fit and significance of Sustained Capacity Utilisation (SCU) model, it can be observed that the model does have a good fit, as indicated by the relatively high value of the *F*-statistic, 155.7 and it is insignificant at the 5.0 percent level; that is, the P-Value (rho value) of 0.0017 being less than 0.05 probability levels implies that there is a 0.0017 chance that the equation as a whole is not significant. More so, the R^2 (R-square) value of 0.664906 shows that the model does have a good fit too. It indicates that about 66.49 percent of the variation in Sustained Capacity Utilisation is explained by KNC, KNI, and KAP, while the remaining 33.51 percent is captured by the error term.

Discussion of Findings

The test of hypotheses one, two, and three as shown in Table 4 shows that the calculated t-values (KNC 3.2 > 1.96; KNI 4.29 > 1.96 and KAP 3.75 > 1.96) are all greater than the tabulated value (1.96), which implies that, all the knowledge management indicators (KNC, KNI, and KAP) individually have the potency to sustain capacity utilization; we therefore, reject the null hypotheses ($H_{01,}$ H_{02} & H_{03}). This resulted in the conclusion that strategic entrepreneurship knowledge creation can significantly support capacity utilization; strategic entrepreneurship knowledge integration can significantly stimulate capacity utilization, and strategic entrepreneurship knowledge application can significantly enhance the capacity utilization of small agro-allied businesses.

The findings of these hypotheses are in agreement with the findings of Chiekezie and Elikwu (2016), whose study revealed that knowledge management has a significant positive influence on continuous process improvement in selected manufacturing firms; and that knowledge management has a significant positive influence on optimal utilization of technology among the selected manufacturing firms. Also, this finding aligns with the finding of Kinyua (2015), whose study established that knowledge management positively influences human capital performance capacity in the five functional areas and in performing their tasks, which has enhanced utilization of the organization's knowledge base and firm's absorptive capacity leading to development of new products and processes as well as improvement of the existing products and processes.

Conclusion and Recommendations

Based on the findings of the tested hypotheses, the study concludes that knowledge creation,

knowledge integration, and knowledge application as indicators of strategic entrepreneurship management have the potency to sustain the capacity utilization of small agro-processing and manufacturing businesses in Nigeria. This is confirmed by the analysis of the research questions which revealed that effective knowledge management can improve the optimal use of available resources and technology, engagement of manpower productive hours, and distribution network and help ensure continuous technology maintenance and process improvement. Therefore, from the empirical analysis and findings, this study concludes that strategic entrepreneurship knowledge management as indicated by various proxies has a significant effect on sustainable capacity utilization of small agro-processing businesses in Nigeria.

Recommendations

Premised on the findings of this study Since the finding of the tested hypotheses revealed that, knowledge management has the potency to sustain the capacity utilization of agro-allied small businesses in Nigeria; the following recommendations are therefore proffered;

i. It is recommended that small agro-processing businesses should encourage mentorship and teamwork to aid knowledge transfer between employees, as this will promote employee commitment and enhance human capital capacity to create new process knowledge.

ii. It is therefore recommended that small businesses should strive to codify and capture knowledge content to increase efficiency by giving access and knowledge to workers at all levels to be part of the continuous process improvement for the optimization of the firm's operational capacity.

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