

Knowledge management: Implications to SMEs performance in Nigeria

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ABSTRACT

Purpose: The purpose of this research is to determine the effect of knowledge management on firm's performance in selected manufacturing small and medium enterprises (SMEs) in Southeast Nigeria.

Design/Methodology/Approach: The data is gathered from different manufacturing SMEs in Southeast Nigeria for this study. The sample size was 196 gathered from the population size of 800 selected manufacturing SMEs. The convenience sampling is used for the study. Descriptive statistics (frequency tables and percentages) was adopted for data presentation, however, Pearson correlation co-efficient along with regression analysis was applied for hypotheses testing.

Results: The results exposed that there is an encouraging positive significant association between knowledge management along with SMEs performance. The outcome expressed that there is an encouraging significant relationship between the knowledge management dimensions (knowledge sharing, knowledge acquisition in addition to knowledge protection) and firm performance dimensions (market share, sales growth as well as customer satisfaction).

Conclusion: The study concluded that SMEs which acquire new knowledge tend to satisfy their customers more than those with outdated knowledge, and those who share knowledge with employees tend to gain larger market share than those who do not share with employees.

Contribution to Literature: This study contributes to the existing literature in two ways: first, this utilized the knowledge management variables which were not utilized in previous studies. Second, this study decomposed firm performance by using three different indicators.

Keywords: Knowledge management, Firm performance, Customer satisfaction, Knowledge acquisition, Knowledge protection, Knowledge sharing, Sales growth, Share market.

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) are advocates of growth and public profitable development because they play a critical role in reducing poverty, increasing gross domestic product (GDP), diversifying, and creating jobs in both developed and developing countries (Nuel & Chika, 2022). Although receiving information is sensitive; Ayyagari, Demirgüç-Kunt, and Maksimovic (2011) claim that about 95% of the companies around the world are SMEs, of which about 60% are from the private sector. SME development, invention, artificial restructuring, and profitable growth all depend heavily on them. The international and successful growth of nations is also considerably aided by small and medium-sized firms (SMEs). SMEs are often the largest and most lucrative segment of the economy Mukulu and Marima (2017) stated that SMEs are considered as profitable, social and political catalysts of development in developed and developing countries. It is noteworthy that small and medium enterprises are an important sector to bring about additional invention, competition and trade in the country and the government can work hard to create a good and innovative system for development of the country. Shodiya (2021) argued that academics and practitioners consider manufacturing firms as large businesses; as this sector employs 22.5 percent of Nigeria's pool and accounts for 66 percent of total expenditure. In order to influence other companies, a system is required that can gather, participate in, integrate and store this crucial information.

Hence, knowledge management (KM) appears to be more important than ever for organization success. A system that can gather, participate in, integrate, and store this crucial information is required in order to have an impact on other businesses. Because of this, knowledge management (KM) appears to be more crucial than ever for organizational success.

In Nigeria, there are about 39.65 million registered SMEs, which make up about 87.9 of the total labor force, 46.31 of the country's gross domestic product growth and, 6.2 of gross international exports (National Bureau of Statistics (NBS), 2021). This shows the effectiveness of the SME sector in the area; hence, it is essential for effective and efficient service delivery, business growth, and organizational performance to comprehend how manufacturing sector know-how operates. Organizational performance reflects a company's ability to use its scarce resources effectively and to achieve its operational requirements (Griffin, 2006). The company's performance can be evaluated as a decisive index by which its success can be measured. Past experimenters have looked at facility performance in terms of demand share, new product launches, and return on assets (Jaworski & Kohli, 1993). Organizational performance is measured by service and product quality, customer satisfaction, contract performance, service innovation, and hand stations (Dess & Robinson Jr, 1984). Based on the balanced scorecard, organizational performance is measured in accordance with return on investment, request share, application, customer satisfaction and product quality. Richard, Devinney, Yip, and Johnson (2009) also stated that return on investment, sales and marketing growth, and profitability are important factors that are measured by organizational performance.

In addition, knowledge can be considered a vital strategic resource for long-term investment success and survival because of its rarity and imitability. Knowledge management is necessary in every workplace (Akpa, Akinlabi, Asikhia, & Nnorom, 2020) and a key question in the world of business life, diligence and education (Graham & Ratnawati, 2019). Knowledge in the institution refers to skillful knowledge, gestures, ideas, positions, beliefs and practices that can be changed and transferred. Information, unlike other cash registers, is sensitive to repetition, which makes information management even more important in companies (Shodiya, 2021). Budihardjo (2017) believed that knowledge management which is a methodical or planned endeavor to enhance organizational capabilities by managing tacit and unambiguous information to accomplish organizational performance. The association's goal is to maintain information management to enhance both internal and external competitiveness as business world nowadays embraces the information economy to improve organizational performance. However, the association can benefit from the development of information media if information management principles are successfully implemented (Heisig et al., 2016).

Despite the significance of knowledge management, numerous SMEs are unfit to induce and partake knowledge effectively. This weakness is due to an unhappy way of managing knowledge. However, numerous manufacturing companies in Nigeria face high failure rate due to heavy fiscal losses, unproductive management strategies and poor fiscal conditions. As a result, many of these SMEs struggle to maintain the knowledge that will keep them in business. In this regard, the manufacturing SMEs have not been able to solve this problem of client knowledge and feedback. Most of the guests are not satisfied with the process shown by most of the manufacturing SMEs in Nigeria. This might be a result of management's and employees' subpar knowledge management practices. Against this background, the study examines how knowledge management affects firm performance in cherry-picked manufacturing SMEs in Southeast, Nigeria.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Knowledge Sharing and Market Share

Sharing knowledge involves promoting implicit knowledge and producing unambiguous new knowledge (Hsiao, Chen, & Chang, 2011). Knowledge sharing (KS) is defined as a process advocated by an establishment to engage and exchange knowledge among workers to capture and produce new knowledge (Obeidat, Abualoush, Irtaimah, Khaddam, & Bataineh, 2018). The exchange of information between the staff and stakeholders of a business unit or association is transferred from one department to another (Yu, Hao, Dong, & Khalifa, 2013). Therefore, knowledge sharing (KS) is an important part of effective knowledge management, as it provide results for some organization problems that cannot be resolved by using other knowledge management approaches.

The company is highly competitive due to its association's ability to strengthen or bolster its position in relation to its challengers in the application and improve it in terms of agreement, participation in the application or growth (Akpobome, 2021; Lall, 2001). The exchange of knowledge between workers and brigades allows associations to

exploit and subsidize knowledge (Cabrera & Cabrera, 2005) and this affects greatly the application fee of the company. Hair (1998) stated that the knowledge management process, which is knowledge access, knowledge sharing, and knowledge storage, increase organizational performance as well as share and profit. The demand share of an association depends largely on the ability of the directors to take advantage of all the chests of knowledge they have of people and brigades, generate values, and share them within the association to achieve greater performance (profitability and share demand). Therefore, workers are encouraged to acquire knowledge from other associated firms within your compatibility for better performance.

Knowledge sharing practices are related to strong invention, which is essential to enhance the competitive advantage of associations (Liao, 2006). Organizations encourage workers to share knowledge and use shared knowledge to perform important tasks that gain competitive advantage. Jue, Marr, and Kassotakis (2010) suggested that associations can use knowledge to gain competitive advantage and that successful association's use knowledge to improve their products and services. Stephen (2022); Samir (2020); Shodiya (2021); Bhawiya Roopaa and Gopinath (2021); Okoli, Onochie, Ngige, and Okaforocha (2021); Adhikari (2020); Dickson and Isaiah (2019) and Ileri (2013) found that Knowledge sharing improved the competitiveness of the associations by adding customer satisfaction, participation in requests, reduction of operating costs, business performance and also the resignation and operation of new technologies. Based on the above discussions, the following hypothesis was developed:

H₁: There is no significant association among knowledge sharing and market share for manufacturing SMEs in South-East, Nigeria.

2.2. Knowledge Acquisition and Customers Satisfaction

Acquisition is a process that includes performing icing, collecting, and applying the acquired knowledge (Zayed, Hussein, & Hassan, 2012). Adherence to knowledge refers to the process of creation and conformation of knowledge and its factors within the association, so that implicit knowledge becomes unequivocal knowledge (Alrubaiee, Alzubi, Hanandeh, & Ali, 2015). Knowledge acquisition (KA) involves the use of new knowledge or the change of information broker in the unambiguous and wordless knowledge of an association, which requires associations to seek specific information in internal and external environments (Xue, 2017). It is described as an approach through which individual knowledge is established, using four threads of socialization, combination, instantiation and internationalization for the development of organizational knowledge on regular basis (Shujahat, Ali, Nawaz, Durst, & Kianto, 2018).

The acquisition of knowledge facilitates the application of knowledge or the replacement of existing content. It also facilitates the generation of new knowledge and better use of existing knowledge through effective information sharing (Grand, Braun, Kuljanin, Kozlowski, & Chao, 2016). Empirical results from researchers in the area of knowledge acquisition and customer satisfaction include Stephen (2022); Samir (2020); Nadube and Ngbaawii (2020); Ha, Lo, Suaidi, Mohamad, and Razak (2021); Dickson and Isaiah (2019); Bhawiya Roopaa and Gopinath (2021) and Nnabuife, Onwuka, and Ojukwu (2015) whose findings expressed that there was a positive association among knowledge acquisition, customer satisfaction as well as organizational performance. Similarly, Nzau (2017) found that companies use brainstorming sessions, workshops and seminars, and employee relations to gain new insights and customer satisfaction, share knowledge, and support organizational learning. Studies by Shodiya (2021); Djangone and El-Gayar (2021); Okoli et al. (2021); Adhikari (2020) and Al-Hadrawi (2018) revealed that access to knowledge leads to greater customer satisfaction and the performance of the firm.

In another study, Ahmed, Fiaz, and Shoaib (2015) revealed that firms are more successful when they adopt strategies that promote information access and internal idea sharing, which improves the process of knowledge acquisition more easily. The study also demonstrated how knowledge acquisition enhances job performance, resource utilization, and customer satisfaction, which increases revenue and enhances organizational success. Furthermore, Gatuyu and Kinyua (2020) showed that knowledge acquisition strategies increase the customer base, improve customer satisfaction, and have a positive effect on the performance of SMEs in Meru County. In addition, their research also showed that SMEs can improve knowledge acquisition through capacity building, mentoring programs, modern technology, and consultancies. In another study, Chebii, Lewa, and Ngari (2019) found that knowledge acquisition significantly affected the performance of SMEs in Kenya in terms of return on capital. However, the study also indicated that the knowledge acquisition process did not affect the companies'

performance in terms of return on assets. Based on the above discussions, the following hypothesis was developed:

H₂: Knowledge acquisition has no significant influence on customer satisfaction in manufacturing SMEs in Southeast, Nigeria.

2.3. Knowledge Protection and Sales Growth

Knowledge protection refers to the ability of an organization to protect its intellectual knowledge from illegal theft and misuse (Gold, Malhotra, & Segars, 2001). Knowledge retention is the process of converting tacit knowledge into tangible information or storing and retrieving explicit knowledge. Associations have different types of warehouses. This knowledge consists of written documents, data stored in databases, expert knowledge, organizational processes and comprehensive knowledge (Alavi & Leidner, 2001). It is very important for small and medium businesses to keep their knowledge from illegal or unfortunate use within the association. Storage is important if knowledge is used to produce or maintain a competitive advantage (Porter-Liebeskind, 1996).

Notable findings from experiments on knowledge retention, market development and performance are Ha et al. (2021); Adhikari (2020); Dickson and Isaiah (2019); Ratan, Shahriar, and Khatun (2020) and Onifade, Tongo, and Adetayo (2022) as his results show that knowledge retention has a significant impact on organizational performance. Pinzón-Castro, Maldonado-Guzman, and Marín-Aguilar (2018) emphasizes that using intellectual property protection such as patents, trademarks or trademark applications will make knowledge protection more successful for businesses. These defensive measures allow an organization to help competitors copy its ideas or inventions, and can take advantage of the consolidation of intellectual property. Ferri, Fiorentino, Parmentola, and Sapio (2019) provided empirical evidence that the patenting process has a positive effect on turnover. Companies with knowledge protection capabilities seem to be able to protect their private knowledge from illegal or malicious use by others (inside and outside the company). As a result, these companies are able to maintain employment for a long time. Similarly, Liu and Deng (2015) found that knowledge retention makes the business process more efficient because other companies cannot transfer ideas or inventions freely. Nguyen, Pham, and Qiu (2022) found that personal knowledge protection (PKP) motivates enterprises to produce new products and stimulate the development of harmonious applications. Ha et al. (2021) found that retention of knowledge was positively and positively related to job initiation. Based on the above discussion, the following hypothesis is developed:

H₃: Knowledge protection has no significant relationship with sales growth of manufacturing SMEs in Southeast, Nigeria.

3. RESEARCH METHOD

This study used a check survey design to collect relevant data from the answers to the questionnaire. The population of the study consisted of named manufacturing SMEs in South-East Nigeria with about 800 respondents. The South Eastern part of Nigeria consists of five states (Abia, Anambra, Ebonyi, Enugu and Imo) and the named small-scale enterprises were randomly selected from the five states. The sample size of the study was determined using Krejcie and Morgan (1970) sample size determination formula; so one hundred and ninety six (196) was reached as a sample size. In addition, the study confirmed that a stratified cross-section was used in this study to ensure that manufacturing SMEs with different owners, directors and employees were well represented. A structured questionnaire was provided as a data collection tool. To check the validity of the instrument, the principal component analysis and common factors and varimax rotation were tested using the extraction method. A factor analysis procedure was applied to validate the instrument because the set of variables involved in factor analysis extends beyond the test data and uses constants and other parameters that are measured with other tests to explore the factor composition of a particular test and therefore define commonalities. The measured properties are generally preferred in construction verification exercises. A principal component analysis (PCA) was performed on the 12 knowledge management questionnaire items using Orthogonal Rotation (varimax). Also, the 12-item firm's performance questionnaire was subjected to factor analysis using principal component analysis (PCA). An initial analysis was performed to find each element in the data. All factor loadings below 3.00 were excluded. Cronbach's alpha was used to verify the reliability of the survey instrument. The nascent components for knowledge sharing, knowledge acquisition, knowledge protection, market share, customer satisfaction, and sales growth as 0.987, 0.983, 0.738, 0.981, 0.992 and 0.953, independently. The collected data was analyzed using a

combination of descriptive statistics (frequency and probability) and inferential statistics (correlation analysis and regression analysis). Assumptions were tested at 5% significant points.

4. DATA PRESENTATION, ANALYSIS AND RESULTS

4.1. Analysis of Questionnaire Response Rate

Table 1. Percentage of the respondent's rate for the questionnaires distributed and returned.

Samples of questionnaires administered	196
Sample copies of the questionnaires returned by the respondent	184
Respondents rate	93.9%

Table 1 above shows that 184 (93.9%) copies of the questionnaire were returned and used for analysis. More than ninety-three percent return rate was considered sufficient enough to use in ascertaining and generalizing the predictors of manufacturing SMEs performance in Southeast, Nigeria.

Table 2. Scrutiny of demographic allotment of the respondents.

Bio-data	Frequency	Percentage (%)
Gender		
Male	108	58.7
Female	76	41.3
Total	184	100
Age		
20 - 30 Years	59	32.1
31 - 40 Years	54	29.3
41 - 50 Years	28	15.2
51 - 60 Years	23	12.5
Above 60 years	20	10.9
Total	184	100
Marital status		
Single	89	48.4
Married	95	51.6
Total	184	100
Work experience		
Below 2 years	14	7.6
2 - 4 Years	24	13.0
5 - 7 Years	87	47.3
Above 7 years	59	32.1
Total	184	100

Table 2 records participation of 108 (58.7%) males and 76 (41.3%) of females. The research however reveals that young adults participants (ages 20 – 50 years) and elder participants (aged 51 years and above). 89 (48.4%) participants were single whereas 95 (51.6%) of them were married. The survey further showed that 14 (7.6%) had run the business below two years, 24 (13.0%) were in the business from two to four years, 87 (47.3%) had served in the firm from five to seven years, whereas 59 (32.1%) had worked in the firm for lowest of seven years. These reports suggested that the respondents were educated as much as necessary to partake in the study.

4.2. Test of Hypothesis One

H₁: There is no significant association among knowledge sharing and market share for manufacturing SMEs in South-East, Nigeria.

Table 3. Correlations of knowledge sharing along with market share of SMEs.

Variable		Knowledge sharing	Market share
Knowledge sharing (KS)	Pearson correlation	1	0.994**
	Sig. (2-tailed)	0.000	0.000
	N	184	184
Market share (MS)	Pearson correlation	0.994**	1
	Sig. (2-tailed)	0.000	0.000
	N	184	184

Note: ***P < 0.000; n = 184; KS = Knowledge sharing; MS = Market share.

Table 3 presents the nature of correlations among knowledge sharing with market share. This association was investigated using Pearson correlation coefficient. In South-East Nigeria, the study found a significant statistically positive correlation between knowledge sharing and market share of manufacturing SMEs ($r = 0.994$, $n = 184$, $P < 0.000$ unit). However, the null hypothesis was rejected. This implies that knowledge sharing culture tends to increase the market share of manufacturing SMEs in South-East, Nigeria. Therefore, it was established that knowledge sharing had statistical relationship with market share of manufacturing SMEs in South Eastern, Nigeria. This result was in line with previous studies (Akpobome, 2021; Bhawiya Roopaa & Gopinath, 2021; Onifade et al., 2022; Shodiya, 2021; Stephen, 2022).

4.3. Test of Hypothesis Two

H₂: Knowledge acquisition has no significant influence on customer satisfaction in manufacturing SMEs in Southeast, Nigeria.

Table 4. The level to which knowledge acquisition influence customer satisfaction.

Variable	Beta	t value	R square	F value	Sig.
(Constant)	-	1.172	-	-	0.243
Knowledge acquisition	0.980	66.731	0.961	4452.969	0.000

Note: Dependent variable: Customer satisfaction.

Table 4 presents the influence and control of knowledge acquisition on customer satisfaction. The hypothesis was studied by applying linear regression. The result established that knowledge acquisition ascertains high statistical influence on customer satisfaction in manufacturing SMEs located in South-East, Nigeria ($\beta=0.98$, $t = 66.73$, $r^2 = 0.961$, $F = 4452.969$, $P < 0.010$). Thus, the null hypothesis was rejected. This research expressed that knowledge acquisition was a significant predictor of customer satisfaction among manufacturing SMEs in Southeast, Nigeria. The result recommended that 96% change in customer satisfaction was associated with proportionate change in SME knowledge acquisition. It implies that SMEs which acquire more knowledge have higher tendency to satisfy the customers. In other words, SMEs with greater knowledge would stand a better chance of providing their clients with quality serving. Hence, the research ascertained a strong, positive, statistical control of knowledge acquisition on customer satisfaction in manufacturing SMEs in Southeast, Nigeria. Similar result was reported by prior researchers (Bhawiya Roopaa & Gopinath, 2021; Djangone & El-Gayar, 2021; Ha et al., 2021; Okoli et al., 2021; Okpebenyo, 2021; Stephen, 2022).

4.4. Test of Hypothesis Three

H₃: Knowledge protection has no significant relationship with sales growth of manufacturing SMEs in Southeast, Nigeria.

Table 5 presents the relationship among knowledge protection as well as sales growth. The hypothesis was investigated using Pearson correlation coefficient. The survey discovered a positive statistical correlation between knowledge protection and sales growth of manufacturing SMEs in Southeast, Nigeria where $r = 0.52$, $n = 184$, $P < 0.010$. Hence, the null hypothesis was rejected. The study specified that manufacturing SMEs which protect their knowledge have higher tendency to achieve sales growth. The result was similar to previous researches (Adhikari, 2020; Akpobome, 2021; Dickson & Isaiah, 2019; Ha et al., 2021; Ratan et al., 2020; Shodiya, 2021).

Table 5. Correlations among knowledge protection as well as sales growth of SMEs.

Variable		Knowledge protection	Sales growth
Knowledge protection (KP)	Pearson correlation	1	0.523**
	Sig. (2-tailed)	0.000	0.000
	N	184	184
Sales growth (SG)	Pearson correlation	0.523**	1
	Sig. (2-tailed)	0.000	0.000
	N	184	184

Note: ***P < 0.000; n = 184; KP = Knowledge protection; SG = Sales growth.

5. CONCLUSION

In relation to the findings, the study fulfilled that small and medium enterprises (SMEs) which acquire new knowledge tend to satisfy their customers more than those who maintain old knowledge. SMEs which share knowledge among employees typically achieve bigger market shares than those which do not share their knowledge with employees. The study also concluded that SMEs which protect their business information tends to achieve sales growth more than those who are vulnerable to intellectual theft.

On the basis of the research findings and conclusion, the following recommendations were made:

1. SMEs should establish functional feedback mechanism to encourage employees to make comments, contributions, and to ask questions.
2. SMEs should hold quarterly business trainings to enhance the capacity of the employees.
3. SMEs should use renewable login details to ensure that an authorized user gains access to the firms' information.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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AUTHORS' CONTRIBUTIONS

All authors contributed equally to the conception and design of the study.

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