Network for Research and Development in Africa
International Journal of Knowledge and Dynamic Systems
ISSN: 2384-5368. Volume 13, Number 3
Pages 84-96 (October, 2022)
DOI: 67321455371337
https://arcnjournals.org

Knowledge Management and Supply Chain Performance of Public Universities in Rivers State

Harcourt Horsfall (PhD)
Department of Marketing, Rivers State University, Port Harcourt, Nigeria | harcourthorsfall@gmail.com
Ikegwuru Mac-Kingsley (PhD)
Department of Marketing, Rivers State University, Port Harcourt, Nigeria | ikegwuru.mac-kingsley@ust.edu.ng
Adiele, KenethC. (PhD)
Department of Marketing, Rivers State University, Port Harcourt, Nigeria | adielekenneth.ust.edu.ng

Abstract: *This study focused on knowledge management and supply chain performance of public universities in Rivers State. A causal draft research model was conveyed to handle the three (3) hypotheses formulated for the study. The survey research method was employed on a population of three public Universities(Rivers State University, Ignatius Ajuru University of Education and University of Port Harcourt) domiciled in Rivers State, whereas a total of 346 respondents were obtained from the public universities studied. Primary data were obtained by means of a structured questionnaire and the simple regression analysis was used to test the hypotheses earlier stated. The results indicate that there is a very strong, positive and significant influence of knowledge acquisition and knowledge utilization on supply chain performance, while knowledge sharing had a strong, positive and significant influence on supply chain performance. Based on the findings, the study therefore concludes that, knowledge management positively and significantly influences supply chain performance of public universities in Rivers State, and recommends amongst others that public universities' managements should focus on operationalizing the individual components of knowledge management (knowledge acquisition, knowledge sharing and knowledge utilization), and combine efforts to put into operation collaborative technologies to encourage supply chain performance in their institutions.*

Key words: *Knowledge acquisition, Knowledge sharing, knowledge utilization, Supply chain performance.*

INTRODUCTION

In recent decades, it has become manifest that competition is more among supply chains (SCs) than between individual organizations (Attia, 2015: Shakeriny, Dehnavi&Shaten, 2016).Hence, managers' midpoint of attentionshould not only be on the planning and operations of internal activities, but also on

how the diversecapabilities, resources, and processes of all the firms in a supply chain can be valuablyincorporated and harmonized. The swell in global competition has informed organizations of the need to appreciate the fact that they have to better handle their supply chains in order to carry on. Supply Chain Management (SCM) tenders to businesses the way to connect technology with people in an endeavor to bring into line the technology coupled with the capabilities of every given business alongside its business partners to facilitate rapid respond to customers' needs (Serdaris *et al.,* 2014; Sakas*et al,* 2014; Shaik & Abdul-Kader, 2013; Marinagi & Akrivos, 2011).

Managing sustainable supply chains extends further than traditional approaches, supported by performance metrics of cost, time, and flexibility of supplies and deliveries, as it necessitates collaboration and long-drawn-out precision transverse all companies in a supply chains, guaranteeing "moral, economic, legal, social and technical" performances that are requisite under a sustainability perception (Zimon, Tyan Sroufe, 2019). To visage these multifaceted challenges, there is mounting consciousness that knowledge is a strategic resource that needs to be appreciated (Rashed *et al.,* 2010; Samuel *et al.,* 2011; Tan & Cross, 2012; Xu *et al.,* 2014).

How firms should plan their knowledge management (KM) activities is a contested question (Bolosani *et al.,* 2017), and acknowledgment of KM as a strategic building block of these days' competitiveness is rising. The embracing of suitable KM approaches is also acknowledged to be a means to realize sustainability goals (Martinez *et al.,* 2018). Knowledge is analyzed as a key strategic reserve for organizational continued existence, firmness, enlargement and enhancement (Hassan & Al-Hakim, 2011,(Kyobe, 2010). Hence, knowledge management (KM) would support companies to stay competitive, as they share information with the external partners and being acquainted with firms' competitors' products, services, tactics and best practices.

Knowledge is therefore, a decisive reserve that ought to be managed suitably not only in solitary companies but also crosswise supply chains. In essence, knowledge engendered in any division of a supply chain and curving through intercompany links ought to be managed appropriately for realizing superior business significance (Thomas *et al.,* 2017: Rodriguez-Chriquez*et al.,* 2016). To continue to exist in international markets where the demand for green production is growing, the efficacy of supply chain management must cultivate(Wang, Liu, Liu & Huang, 2019). Moreover, it is essential that companies and managers arrive at a toweringaltitude of ripeness in their supply chain management practices, to lessen risks of disruptions (Tubis, 2021). This is very imperative to educational supply chain.

Educational supply chain characterizes supply chain management concept to the educational institutions and it aims at improving the wellbeing of the end customer or the society. To achieve this goal, educational institutions require a confident degree of knowledge regarding the partners in their supply chains as well as suppliers, customers, and the consumer. The performance of the supply chain in educational setting depends on the unspoiled harmonization of all supply chain stakeholders to make certain attainment of enviable outcomes. This study embodies educational supply chain management model for public universities as it supposes thatknowledge management can lend a hand to trim down the knowledge gaps that are most important in the educational supply chain, to make certain a perceptible and translucent environment. In short, it is fundamental for present and upcoming managers of supply chains in the universities to learn how to put into operation properknowledge management practicesin their institutions as well as in their relationships with external partners.

There are, however, only a few empirical studies spotlighting the relationship between Knowledge management and supply chain performance in the academic settings, more specifically in higher education institutions (Ngoc-Tan & Gregar, 2018; Raj-Adhikari,2010; Mathew, 2010; Yang & Chen, 2009). Thus,the number of empirical studies on how the concepts of knowledge management impacts on supply chain performance is scarce, especially in relation to the education sector in the developing countries, such as Nigeria. In view of that, this contemporary studydesires to provide empirical evidence on how knowledge management impacts supply chain performance in public universities in Rivers State of Nigeria.

LITERATURE REVIEW AND HYPOTHESES

Knowledge-Based View Theory

The Knowledge-Based View (KBV) situates that the achievement of a firm that is involved in bringing into being, assimilating and issuing knowledge is evaluated by the firm's aptitude to cultivate new knowledge based on its peculiar resources. Hence, the fundamental resource of the firm is knowledge (Grant, 1996). Knowledge-based firms are additionally innovative, proficient and operative than any other firms (Bierly & Chakrabati, 1996; Daventport & Prusak, 1998). This as a result implies that knowledge is the solitary spring of justifiable supply chain performance. To realize grander performance, with the indispensable resources and loftier proficiencies (Davenport & Prusak, 1998), the firm requires tacit knowledge to integrate and coordinate other resources and capabilities (Grant, 1996). Knowledge management has an important locus as a prime cradle of organizational competence. Knowledge constitutes circumstantial information, experiences, values and thoughts of specialists (Davenport & Prusak, 1998), it is a touch that can be transmitted, recollected, authorized, collated and deposited into a computer-based knowledge fountain, and employed to generate value for a business (Carlsson, 2004). The Knowledge-Based View Theory is relevant to this study for the reason that, an emphasis on knowledge management by public universities forms the basis for achieving sustainable supply chain performance in their institutions. Since the efficacy of supply chain performance is based on knowledge and the knack to repeatedly grow new knowledge; knowledge management is hence a vital dynamic and resource that possibly will propel sustainable supply chain performance for public universities.

Knowledge Management

Knowledge management scope concerns the generation, communication, transformation and application of knowledge that is sufficient onto the reasoned action in situated contexts in which individuals and organizations find themselves (Zhu, 2008),

Knowledge management is the emerging body of techniques, apparatuses, systems and principles through which establishments can obtain, cultivatequantity, dispense and deliver a yield on their intellectual possessions(van Donk & Riezebos, 2005).Knowledge Management as seen by Chuang (2004), is the aptitude of a company to obtain, produce, handover, assimilate, share and apply knowledge related resources and activities across functional boundaries. Knowledge management is viewed as a fundamental strategic asset that facilitates the coordination and integration between supply chain members (Rashed*et al.,* 2010; Samuel *et al.,* 2011; Tan &Cross, 2012; Xu *et al.,* 2014).

Knowledge management can thus, be perceived as a methodical style to handling and powering an establishment's knowledge chattels which might embrace knowledge of the establishment's customers,

products, market, procedures, finances and peculiar services.Knowledge management takes care of the organizational improvement of knowledge with innumerable technologies, utensils, and progressions to accomplish established goals.Knowledge management concerns management of data, information, unambiguous and inferred knowledge. The main enablers of knowledge, in any business, are employees, processes and technology.

The application of knowledge management according to Tesavrita, Suryadi, Wiratmadja, and Govindaraju (2017), can be observed at both an intra-organizational and an interorganizational level. While intra-organizational knowledge management spotlights on knowledge managementapproaches, procedures, undertakings, and technologies contained by the boundaries of an organization, inter-organizational knowledge managementdenotes the utilization of knowledge management to bring about the relationships with external partners (suppliers, customers, service providers, etc.). In view of the fact that sustainable growth matters affect all companies in a supply chain, it is imperative to take in hand answers from a shared rather than an individual point of view. Therefore, knowledge management between diverse companies is even more significant than that of each company on the inside, for realizing sustainable growth that adds value to the whole public. Yang and Chen (2007) noted that, this would enable the organization to gain sustainable competitive advantage, as well as, to improve organizational effectiveness. To this end, it is possible to conclude that knowledge management deals with knowledge and its foundation progressions in establishments, and the attainment of goals and competitive advantages springing from the right utilization of knowledge.

According to Dev Raj Adhikari (2010), knowledge management in educational institutions can be defined as the systematized and methodical method of engendering and circulating information, and deciding on, extracting, and positioning explicit and tacit knowledge to build inimitable value that can be used to fortify teaching-learning atmosphere. Habib and Jungthirapanich (2009) identified research framework of educational supply chain management for the Universities as:

1. Education Suppliers (Suppliers of the student, Suppliers of the faculty, Suppliers of Assets or Equipment and Suppliers of Educational Materials.

2. Research Suppliers (Suppliers of Internal Research Projects (University Self-Funding) b) External Research Projects (External Research Funds, Ministry of Education, Private Organizations, etc.), and

3. Customers made up of (Education Customers: Graduates with sought after quality, Families, Employers of government and private organizations, and Research Customers (Funding organizations of research projects, and Quality research outcomes (Researchers, research publications, findings etc.)

Jungthirapanich (2009) research structure of educational supply chain management for the Universities portrays two categories of contributions to the society, which are human resource contribution (quality graduates) and research contribution (research findings).

Mathew (2010) contended that knowledge management delivers some of the clarifications to the difficulties that are applicable for sustainable higher education teaching learning processes. Dev Raj Adhikari (2010) stressed that in contemporary times, trying to manage the educational institutions without knowledge management initiatives can bring about defeat. Maponya (2004) stated that if knowledge management is applied meritoriously, it can result in enhanced decision-making competences, condense “product” development cycle time, enhanced academic and administrative services, and

abridged costs. This study adopts knowledge acquisition, knowledge dissemination and knowledge utilization as the dimensions of knowledge management.

Knowledge Acquisition

Knowledge acquisition fallouts from employees' involvement and collaboration of people, resources, and technology (Chiu *et al.* (2016.). Knowledge is a substantial font for learning novel things, deciphering problems, producing core competencies and establishing new positions for personages and the business at currently and in the future (Nasimi *et al.,* 2013). Knowledge acquisition is the progression of locating knowledge externally and making it fitting for succeeding application (Holsapple, 2003). Hence, the knowledge engendering externally will facilitate the firm's supply chain performance. Knowledge generation thus, embraces generating knowledge or innovation by means of accessible knowledge in an organization.

Knowledge acquisition is essential because congregating knowledge from suppliers, employees and customers remains the top priority for organizations to guarantee unremitting perfection. Thus, through superior knowledge acquisition, public universities can power their supply chain faster, cheaper and at higher quality than their competitors.

Knowledge Sharing

Knowledge sharing (KS) denotes bartering knowledge amid academics and researchers between peers contained by a university to enrich their personal knowledge base and that of their universities (Veer Ramjeawon & Rowley, 2018). Knowledge sharing ethos assists higher educational institutions to advance research and teaching activities (Madbouly *et al.,* 2020). Therefore, knowledge sharing demands a philosophy and setting that expedite any possibility of knowledge sharing by means of evolving teamwork, networking, and collaboration.

Knowledge Utilization

Knowledge utilization talks about distributing knowledge generated by the academics and researchers within a university to peripheral stakeholders or cohorts for its application and convention and service to society (Ramjeawon & Rowley, 2018). Knowledge utilization therefore, concerns the dispensing of knowledge that emanated from scholarly endeavors within a university to outer shareholders or allies for its use and resolution and service to humanity.

Supply Chain Performance

Performance measurements are convenient pinpointing utensils for healthier decision-making and a major necessity of fruitful unceasing modernization (Soosay & Chapman, 2006). In order for organizations to increase their performance and survive in a competitive atmosphere, they also have to join forces and constructenduring relationships with upstream and downstream partners in the supply chain (Huo, 2012; Xu *et al.,* 2014). Scholars have suggested immeasurable structures for supply chain performance, in order to qualify the adeptness and the usefulness of the supply chain, where different dimensions of supply chain performance are reflected (Lin, Huang & Li, 2002; Lin & Li, 2010; Gunasekaran *et al.,* 2004; Sillanpaa & Kess, 2011).

Empirical Review

Ngoc-Tan and Gregar (2018) investigated the influence of knowledge management on innovation in an academic setting, by means of survey data composed in 2017 in 30 public universities correspondingly located in 3 regions of Vietnam. The study adopted the Structural Equation Modeling (SEM) to test the hypothesis concerning knowledge management and innovation, and found that knowledge management expansively influences technical innovation in academic surroundings and that not all constituents of knowledge management are directly linked with administrative innovation.

Nurul and Lee (2018) examined the influence of knowledge sharing on the service innovation performance of restaurant in North Kalimantan, Indonesia.The study used 150 employees working in the restaurant businesses in North Kalimantan and data were composedby means of survey method with questionnaire.The regression analysis was employed to demonstrate the influence of the independent variable on the dependent variable. It was found that the influence of knowledge sharing on the performance of service innovation displayed significant results. Knowledge sharing activities was found to have a positive influence on innovation performance of restaurant business services in North Kalimantan.

Nausheen and Lin (2013) studied the connection between knowledge management practices and company performance, usinga purposively selected sample of 412 employees at dissimilar managerial positions. The study looked at the predicting linkage of knowledge management practices (sharing of best practices and building of consistent process, continues employee learning, effective management of knowledge, innovative culture development, and management of core competencies) with company performance. The questionnaires concerning knowledge management practices and company performance were administered to respondents, and data analyzedusing correlation and regression analysis to institute the associationamidseveral Knowledge management practices and company performance.

Fagade (2011) studied the impacts of knowledge management on supply chain management most especially in emerging economy like Nigeria by means of interview and personal observations and found that the rate of change in business environment restate why the knowledge management method: that is based on development of mutual respect and interdependence that is much anticipated in the new business milieu, most particularly in supply chain in collaborating all-inclusive partners in the network.

From the review of literature, the study developed the following conceptual framework:

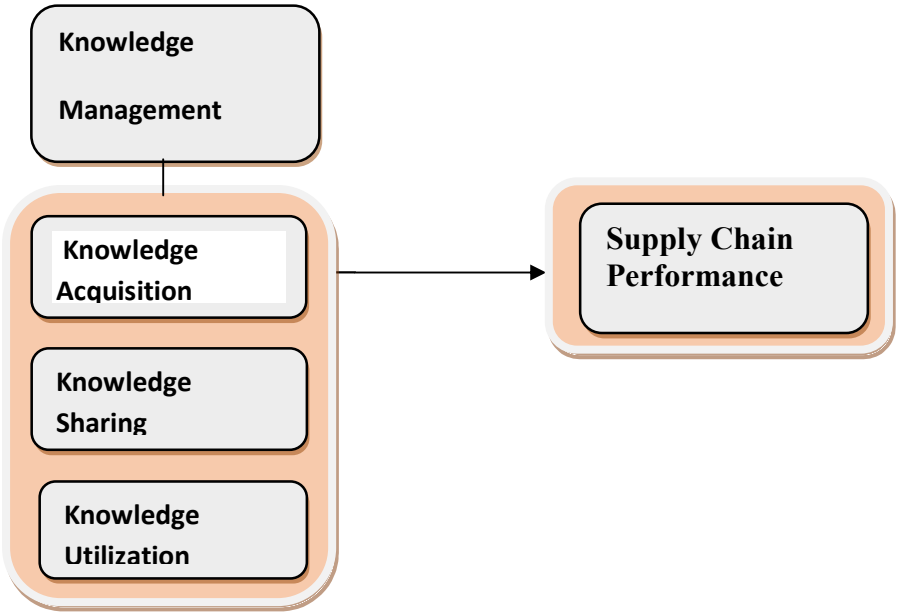

Figure1: Conceptual Framework of Knowledge Management and Supply Chain Performance.

Source: Authors' Desk Research, (2022).

From the conceptual review, the following hypotheses were formulated:

Ho_1: Knowledge acquisition does not significantly influence supply chain performance of public universities in Rivers State.

Ho_2: Knowledge sharing does not significantly influence supply chain performance of public universities in Rivers State.

Ho_3: Knowledge utilization does not significantly influence supply chain performance of public universities in Rivers State.

METHODOLGY

This empirical study addresses how supply chain management contributes to successful university operations. This study employed a survey research design on a population consisting of three public universities in Rivers State (Rivers State University, Ignatius Ajuru University of Education and University of Port Harcourt).

Sample Technique and Sample Size for the study

The total population of academic staff in the three universities combined is 2,517. The University of Port Harcourt has a teaching staff, of 1,390 (Uniport Staff Profile, 2020), Rivers State University has a teaching staff strength of about686, while, IgnaitusAjuru University of Education boast of 441 teaching staff (University Official Staff Profile, 2017). This is demonstrated in Table 1.

Table 1: Total population of academic staff of the public universities in Rivers State

Categories	Uniport	%	Rivers State University	%	IAUE	%
Teaching staff	1,390	100	686	100	441	100
Total			₦2,517			

(Source: Establishment Units of Universities Studied, 2015)

The Rivers State University has 686 academic staff, the Ignatius Ajuru University of Education has 441 academic staff, and the University of Port-Harcourt has 1390 academic staff. This summed up to 2517 academic staff for the three universities studied.

The total population of academic staff consists of 2517 as indicated by establishment units of the three institutions under study. To obtain sample size of academic staff from the population of 2517, the Taro Yemen's Formula for sample size determination was used. The formula is $S = N/(1 + Na^2)$.

Where n is the sample size

N is the population

1 is constant and

e is level of significance (i.e. 0.05).

Therefore; n = 2517/1+ 2517(0.05)2

n = 2517/1+2517(0.0025) = 2517/1+ 6.2925

n= 2517/7.2925 = 345.

Based on this formula, a total sample size of 346 respondents was used. The sample size of the study emanates from the three public universities in Rivers State, whilethe simple random sampling technique was adopted to arrive at the respondents per institution from the sample size. The sample was chosen for

the sake of equal representation of opinions, experience in knowledge management and supply chain performance of public universities of in Rivers State, and to elicit accurate information bordering on the study.The researchers assessed the Professors, Associate Professors or Readers, and Senior Lecturers as respondents. The study used self-administered questionnaires to assemble primary data from the respondents based on a 86.5 per institution. On the whole, information from the three public universities brought the total number of respondents to 346.

Results

Reliability Cronbach's α was conducted to examine the internal consistency of multi-item constructs. All constructs prove their reliability. The exact results of the scale reliability analysis are reported in Table 2.

Table 3Shows the reliability measure of Knowledge Management and Chain Performance (n=346).

Scale	Dimension	Items	Reliability
KA	Knowledge Acquisition	5	0.851
KD	Knowledge Dissemination	5	0.951
KU	Knowledge Utilization	5	0.914
SCP	Supply Chain Performance	4	0.978

Source: SPSS 22.0 Output, based on 2022 field survey data.

Knowledge acquisition (KA), knowledge dissemination (KD) and knowledge utilization (KU) have values of 0.851, 0.951 and 0.914 respectively. In the interim, supply chain performance (SCP) attain value of 0.978. All constructs have the values that exceeds the normallyconventional threshold value of 0.7 (Bagozzi & Yi, 1991) and are sufficient for the succeeding phase of simple regression analysis.

Test of Hypotheses

Table 3: Influence of Dimensions of Knowledge Management on Supply Chain Performance (n=346)

Independent Variables	Dependent variable	Estimate	P	Conclusion
Knowledge Acquisition	==> Supply Chain Performance	.0875		Supported (P > 5%)
Knowledge Sharing	==> Supply Chain Performance	.0774		Supported (P> 5%)
Knowledge Utilization	==> Supply Chain Performance	.0924		Supported (P < 5%)

Note: *,** Significant at < 0.10 and < 0.05 respectively

Table 3 shows that for hypothesis one, two and three, the significant is .000 which is lesser than 0.05; there is a significant, influence of knowledge acquisition, knowledge dissemination and knowledge utilization on supply chain performance with the R-square (Coefficient of Determination) that there is 87.5%, 77.4% and 92.4% direct influence of the knowledge acquisition, knowledge determination and knowledge utilization on supply chain performance. This shows that the dimensions of knowledge management can affect supply chain performanceto a high degree.

Discussions of Findings

The results of hypothesis one shows that knowledge acquisition has a very strong, positive and significant influence on supply chain performance (0.875: 0.000<0.05), knowledge dissemination has a strong, positive and significant influence on supply chain performance (0.774: 0.000<0.05), and knowledge utilization has a very strong, positive and significant influence on supply chain performance (0.924: 0.000<0.05).

It is clear as crystal that these results of depict the significance of knowledge management in academic institution. To start with, the pragmatic result demonstrates that Knowledge management (knowledge acquisition, knowledge dissemination and knowledge utilization) broadly and positively influence supply chain performance of public universitiesin Rivers State. This indicates thatknowledge acquisition, knowledge dissemination and knowledge utilizationfacilitates for supply chain performance in public universities. By positioning knowledge managementinventiveness, the universities can exploit it knowledge reserve to build upinnovativeacademic programs, improve its existing programs by putting

forwardnovel courses and disciplines to meet societal demand. This supports Ngoc-Tan and Gregar (2018)findings that knowledge management expansively influences technical innovation in academic surroundings.

This is also in line with Yahya and Goh (2002) who found out that knowledge management is a course of action that boosts knowledge application to realize innovation or advancing business performance.

CONCLUSION

The aim of the present study was to investigate the influence of knowledge management on supply chain performance. Consistent with previous studies, we are able to achieve complete convergence between the three dimensions of knowledge managementknowledge acquisition, knowledge dissemination and knowledge utilization) in terms of their response to supply chain performance. Besides, the results of the tests provide empirical evidence that these dimensions of knowledge management impact on supply chain performance.Accordingly, the study concludes that knowledge management significantly influences supply chain performance of public universities in Rivers State.

RECOMMENDATIONS

In line with the findings of the study, the following recommendations were made:

1. Public universities' managements should focus on operationalizing the individual components of knowledge management (knowledge acquisition, knowledge dissemination and knowledge utilization), and combine efforts to put into operation, collaborative technologies to encourage supply chain performance in their institutions

2. Public universities should ensure adequate and rewarding knowledge management packages to attract superior supply chain performance in their universities.

3. Given that empirical evidence has shown that knowledge management is vital to the success of supply chain performance, public universities should embrace this activity to achieve collaboration levels that can improve supply chain performance in their institutions.

.4. In order to consistently increase supply chain performance,public universities managers should always direct efforts towards integrating their resources and processes to ensure consistent fluidity with the functioning of knowledge management.

References

Attia, A. Testing the effect of marketing strategy alignment and triple-A supply chain on performance in Egypt. *EuroMed J. Bus. 2015, 10, 163–180.*

Bagozzi, R. P. & Yi, Y. (1991). -multimethod matrices in consumer research. *Journal of Consumer Research, 17(4), 426-439.*

Bierly, P. & Chakrabati, A. (1996). Generic knowledge sharing in the U.S. pharmaceutical industry. *Strategic Management Journal*, 17, 123-126.

Carlsson, S.A. (2004). Enhancing knowledge acquisition through the use of ICT. Paper presented at the International Conference on Decision Support in an Uncertain and Complex World (The IFIP TC8/WG8.3), Lund, Sweden.

Chiu, C. N., & Chen, H. H. (2016). The study of knowledge management capability and organizational effectiveness in Taiwanese public utility: The mediator role of organizational commitment. *Springer Plus, 5*(1), 1520.

Chuang, S. (2004). A resource-based perspective on knowledge management capability and competitive advantage: an empirical investigation. *Expert Systems with Applications, 27(3), 459-465.*

Davenport, T.H. & Prusak, L. (1988). *Working Knowledge: How Organizations Manage What They Know.* Harvard Business Press: Boston, MA, USA.

Fagade, C.O. (2011). *Enhancing supply Chain through knowledge management practice*.Master's Thesis.University of Gavle.

Grant, R. (1996). Towards a knowledge-based theory of the firm. *Strategic Management Journal, 17*, 109-122.

Habib, M.D. & Jungthirapanich , C. (2009). Research framework of educational supply chain management for the Universities. IEEE International Conference on Engineering Management and Service Sciences EMS, China.

Holsapple, C. (2003). *Knowledge and its attributes, In C. Holsapple (Ed.), Handbook on Knowledge Management* Retrieved from Google.com on 5/5/2022

Kyobe, M. (2010). A knowledge management approach to resolving the crises in the information systems discipline. *Journal of Systems and Information Technology, 12*(2), 161-173.

Madbouly, A., Gupta, V., Reyad, S., & Soundarajan, G. (2020). The impact of knowledge management on the HEIs' innovation performance: An analytical study of Omani HEIs. 5(0130), 20.

Maponya, P. M. (2005). *Knowledge management practices in academic libraries: a case study of the University of Natal,* Pietermaritzburg Libraries (Doctoral dissertation, Loughborough University).

Marinagi, C.C., & Akrivos, C.K. (2011). Strategic alignment of ERP, CRM and e-business: A value creation. *Advances on Information Processing and Management (AIPM), 1*, 347-350

Mathew, V. (2010). Knowledge management in higher education: Implementation agenda in distance learning. In Distance Learning and Education (ICDLE), 2010 4th International Conference on (155-158). IEEE.

Nasimi, M.H., Nasimi, S., Kasmaei, M.S., Kasmaei, H.S., Basirian, F. & Musapour, H. (2013). Knowledge management and competitive advantage for organizations. *Kuwait Chapter of Arabian Journal of Business and Management Review, 2*(5), 56-64.

Ngoc-Tan, N., & Gregar, A. (2018). Impacts of knowledge management on innovation in higher education Institutions: An empirical evidence from Vietnam. *Economics and Sociology, 11(3), 301-320.*

Nurul, H. & Lee, C. W. (2018). The Effect of knowledge sharing on the service innovation performance: An empirical study on restaurant in North Kalimantan, Indonesia .*Journal Metris 19, 31–36.*

Raj Adhikari, D. (2010). Knowledge management in academic institutions.*International Journal of Educational Management, 24(*2), 94-104.

Rodríguez-Enríquez, C.A., Alor-Hernandez, G., Sanchez-Ramírez, C., Cortes-Robles, G. (2015). Supply chain knowledge management: A linked data-based approaching *SKOS. DYNA, 82, 27–35*.

Sakas, D., Vlachos, D., & Nasiopoulos, D. (2014). Modeling strategic management for the development of competitive advantage, based on technology.*Journal of Systems and Information Technology, 16(3),187 – 209.*

Shaik, M.N. & Abdul-Kader W. (2013). Interorganizational information systems adoption in cupply Chains: A context specific framework. *International Journal of Information Systems and Supply Chain Management, 6(1), 24–40.*

Shakerian, H. Dehnavi, H.D.Shateri, F. A (2016). Framework for the implementation of knowledge management in supply chain management. *Procedia Soc. Behav. Sci. 230, 176–183.*

Tesavrita, C., Suryadi, K., Wiratmadja, I.I.,Govindaraju, R., intra-organizational and inter-organizational knowledge sharing in collaborative learning process: A conceptual framework for SME. *In Proceedings of the 2017 4th International Conference on Industrial Engineering and Applications (ICIEA), Nagoya, Japan, 21–23 April 2017; pp. 187–191.*

Thomas, A., Dorrington, P., Costa, F., Loudon, G., Francis, M., Fisher, R., Liu, S. (2017).Organizational learning capability in SMEs: An empirical development of innovation in the supply chain.*Cogent Bus.Manag, 4, 1-20.*

Tseng, S. & Lee, P. (2014).The effect of knowledge management capability and dynamic capability on organizational performance. *Journal of Enterprise Information Management, 27(2), 158-179.*

Tubis, A.A.; Werbi nska-Wojciechowska, S. (2021).Risk management maturity model for logistic processes. *Sustainability, 13, 659.*

Veer Ramjeawon, P., & Rowley, J. (2018). Knowledge management in higher education institutions in Mauritius. *International Journal of Educational Management, 32*(7), 1319-1332.

Wang, K. Q., Liu, H. C., Liu, L. & Huang, J. (2017). Green supplier evaluation and selection using cloud model theory and the QUALIFLEX Method. *Sustainability, 9, 688.*

Yang, C., & Chen, L. C. (2009*). On using organizational knowledge capabilities to assist organizational learning. In knowledge management and organizational learning* (302-318).Springer. US.

Zimon, D., Tyan, J. & Sroufe, R. (2019).Implementing sustainable supply chain management: Reactive, cooperative, and dynamic models. *Sustainability, 11, 7227*