KNOWLEDGE MANAGEMENT PROCESSES AND ORGANIZATION EFFICIENCY: A STUDY OF SELECTED FIRMS IN DELTA STATE NIGERIA

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ABSTRACT

Knowledge management processes are those procedures that an organization uses to identify and capture knowledge, lessons learned or best practices and they include; acquisition process, sharing process and application process. This study sought to investigate the impact of knowledge management processes on organization efficiency within selected firms in Delta State, Nigeria. This is a survey research design was used in this study. The population of this study was 208 staff and a sample size consisting of 140 staff of the selected organizations was used for this study. The data were gathered using the questionnaire instrument and the data gathered were analyzed using descriptive and inferential statistics. The result revealed that knowledge sharing, knowledge acquisition and knowledge application have significant positive impact on organizational efficiency. In conclusion, knowledge management processes have a significant effect on organizational efficiency on the selected firms in Delta State, Nigeria. The study recommended that organizations should give more attention to the key processes of knowledge management components namely: knowledge acquisition, knowledge sharing and knowledge application because they significant have a positive impact on organizational efficiency.

Keywords: Management, Processes and Organizational Efficiency

INTRODUCTION

Knowledge management has been defined as the explicit and systematic management of vital knowledge and its associated processes of creation, organization, diffusion, use and exploitation (Skyrme, 2001). Knowledge

management is simply the management of knowledge available in the organization. Knowledge management processes are those procedures that an organization uses to identify and capture knowledge, lessons learned or best practices and they include; acquisition process, sharing process and application process.

Organizational efficiency is a process whereby organizations uses small amount of input (resources) to produce large amount of output (goods and services). For an organization to be efficient, it must be able to manage the resources available to produce more quantity of goods and services.

Consequently, the successful introduction and use of knowledge management processes are considered essential components of any strategy for the improvement of organizational efficiency. This is because appropriate management and application of knowledge can help organizations in their attempts to become more creative, more intelligent and more able to adapt within an ever-changing business climate (Wong and Aspinwall, 2004). Indeed, knowledge management should be viewed as a strategy used to assist organizations to envisage, make and control the whole decision-making process through the use of knowledge (Kongpichayanond, 2009). Knowledge management thus help organizations to be efficient because the way in which organizations will be able to manage their available resources is through applying knowledge which helps in ensuring that an organization performs well and be able to gain a large market share. Using knowledge management processes, an organization can be assured of efficient production of goods and services.

In recent times, organizations have been ignorant about how to extract the tacit knowledge which has led to poaching of skilled employees by other organizations and increased the level of employee turnover in various sectors of the economy. This problem has affected the performance of the organization. Despite different theoretical studies and assertion, the direct effect of knowledge management processes and organizational efficiency has not been studied. This study is unique and intends to contribute to knowledge by investigating the impact of knowledge management processes on organizational efficiency of the selected firms in Delta State, Nigeria. This study will fill this gap. Hence, the basic objective is to investigate the effect of knowledge management processes on organizational efficiency using some selected firms in Delta State, while the

specific objectives are;

1. To ascertain the effect of knowledge management sharing process on organizational efficiency.
2. To investigate the extent to which knowledge management acquisition process affects organizational efficiency.
3. To examine the influence of knowledge management application process on organizational efficiency.

The hypotheses for the above specific objectives are:

HO_1: Knowledge management sharing process has no significant effect on organizational efficiency.

HO_2: Knowledge management acquisition process has no significant effect on organizational efficiency.

HO_3: Knowledge management application process has no significant effect on organizational efficiency.

LITERATURE REVIEW

Theoretical Foundation Underpinning the Study

The tacit and explicit knowledge theory is used to underpin this study. This theory was proposed by Nonaka and Takeuchi, (1995) as cited in Ermine, (2007) which strongly influence nearly all knowledge management researches and approaches. This theory helps to show how knowledge recovered either through tacit or explicit knowledge helps to utilize the available resources efficiently. It gives organizations the understanding that knowledge gotten from the employees head and also from sources such as reports, financial statements, journals, documents, etc, if applied and utilized effectively will ensure proper use of available resources which will in turn lead to growth, innovation, profitability and increased market share.

Concepts and Measurement of Knowledge Management Processes

Knowledge management processes are those steps or guidelines that helps in identifying how knowledge is been collected, communicated and applied in order to ensure that the best knowledge is used to carry out the daily activities of the organization. Many schools of thought identified that knowledge management represent processes, and knowledge and information that comes from internal or external sources do not mean anything without these processes.

Researchers have identified many processes. (Leonard, 1995 as cited in Alsalim and Mohamed, 2013), identified knowledge management processes as; acquire, collaborate, integrate, experiment. More recently, knowledge management is classified into four dimensions; knowledge acquisition, knowledge creation, knowledge transfer and knowledge application (Saleim & Khalil, 2007). In this study, knowledge management processes can be classified into three; acquisition process, sharing process and application process.

Knowledge Acquisition Process: According to Mills and Smith (2011), acquisition describes an organization's ability to identify, acquire and accumulate both internal and external knowledge essential to its operations.
Knowledge Sharing Process: Knowledge sharing is defined as a process of exchange of explicit or tacit knowledge between two agents, during which one agent purposefully receives and uses the knowledge provided by another (Lemlem, 2017).

Knowledge Application Process: It refers to the ability of the organization to apply and utilize the knowledge shared in order to generate revenues, making important decisions and problem solving and also response more effectively to the environment changes.

Concept and Measurement of Organizational Efficiency

Organizational efficiency is a measure of the relationship between organizational inputs (resources) and outputs (goods and services) and in simple terms, the more output we can achieve with a given amount of inputs or resources, the more efficient we are. It relates to productivity and profitability and managers needs to maintain or improve their level of production in their organization. Inefficient processes are costly in terms of naira, waste, rework, delays, resource utilization and so on. Organizations should aim at making the best use of available resources in the most productive way in achieving organizational objectives.

To measure organizational efficiency, this study adapts a five point scale likert questionnaire which consists of seven questions in total by Shakeel, Mohammad and Mohammad, (2015) which was modified.

Empirical Review

Alsalim and Mohamed, (2013) studied the “Impact of Knowledge Management

Processes on Organizational Performance" using Institute of Technical Learning, Iraq. A survey research design was adopted using 33 department chairs as the sample size drawn from the total population of 50 department chairs. Multiple regression analysis was conducted. The result showed that there is a significant impact of knowledge management processes (knowledge generating, knowledge storage, knowledge publishing and knowledge application) on all indicators of organizational performance (personal conduct, social responsibility, scientific performance and functional relations). This study is limited to only one institution in Iraq.

Also, Ehsan and Masoomen, (2013) in their study investigated "Knowledge Management Effect on Performance Rate of Employees" using Auxin Steel Company in Iran. The study adopted the descriptive survey research design. The statistical population consists of all employees and 380 employees as statistical sample were selected by using Morgan table and stage-random sampling method. The method of data analysis used was Pearson's correlation. The results indicated that knowledge management application is the integral component of organizations and its application increases the knowledge and information of employees and consequently increase organization's productivity. However, it is limited to only one company in Iran.

A study by Katsuro, Mapira, Mangava and Chimbindi (2013), on the "Impact of Knowledge Management on Organizational Performance" used Grain Marketing Board in Zimbabwe. A case study research design was adopted and a sample size of 60 employees out of a total population of 100 employees was used. Regression analysis was conducted. The result was that knowledge management creates sustainable competitive advantage for an organization, reduces design time and cost. Therefore, there was a positive relationship between knowledge management and organizational performance. However, it is limited to only one marketing firm in Zimbabwe.

Mckeen, Zack and Singh, (2013) carried out a study on "Knowledge Management and Organizational Performance" using North American Business School in USA and Canada. Survey research design was conducted. The total population was 106 managers and the sample size was 90 managers. Partial least squares (PLS) approach alongside with principal components analysis, path analysis, and regression was used for analysis. Results indicated that knowledge management practices were directly related to organizational

performance which, in turn, was directly related to financial performance. It is limited to only one business school in USA and Canada.

In addition, Meenakshi and Kachna, (2014) studied "Assessing the Impact of Knowledge Management Practices on Organizational Learning and Performance" using Govt. Medical College Jammu as a case study. A survey research design was adopted. The sample size was 100 doctors which were randomly chosen. 97 questionnaires were returned and were used for analysis. The study adopted regression analysis using SPSS software. The results show that Performance is a function of knowledge management and organizational learning and there is a significant positive relationship between Knowledge Management and Organizational Learning. However, this study is limited to only one hospital and data was collected using only doctors.

Seyed, Mariyayee and Thiaku, (2014) studied "The Effect of Knowledge Management Practices on Employees' Innovative Performance" using some manufacturing industries in Malaysia. An online survey method was undertaken using 384 employees as the sample size drawn from the total population of 1,693,154 employees. Linear regression analysis was conducted using SPSS software version 20. The results obtained concluded that knowledge management plays a vital role on supporting employees' innovative performance within organizations. The study is limited to a small number of respondents from a small country, Malaysia.

Wageeh, (2014) sought to examine Knowledge Management and Organizational Learning from the Employee Perspective with the Saudi banks in Al-Taif Governorate as the case study . A survey-design was used in the study and a sample size of 350 staff of the banks was used in this study. Data was gathered using a questionnaire and analyzed using descriptive and inferential statistictis. The findings revealed that there was statistically significant relationship between the dimensions of knowledge management and organizational learning (adaptive organizational learning and generative organizational learning). The results from this study were limited to Saudi banks in Al-Taif Governorate.

Abdel, Gawaher and Mohamed, (2015) investigated the role of Knowledge Management in improving organizational performance of selected businesses in Egypt. The study used survey research design with a sample size of 560

employees. The findings revealed that results knowledge management capabilities had a positive significant relationship with measures of the performance The findings were limited to only small and medium scale enterprises while ignoring large scale enterprises in Egypt. Also, a study by Bharadwaj, Chauhan and Raman (2015) in Indian Organizations was aimed at assessing the impact of knowledge management capabilities on knowledge management effectiveness. A survey research design was adopted, using 156 employees as the sample size out of the total population of 1,000 organizations in India. The results revealed that both infrastructure capabilities and process capabilities play an important role in improving knowledge management effectiveness.

Moreso, Mohammad, (2015) in his study sought to evaluate the impact of knowledge management on organizational performance using Kuwait University. The study adopted survey research design with a population of 1365 faculty members and the sample size of 355 faculty members. Descriptive statistics methods such as mean, standard deviation, variance, percentage calculation and inferential statistics (T-test) were applied to analysis the data. The finding revealed that knowledge management components have a positive relationship with organizational performance. This result is limited to only one institution making it difficult to generalize

Nnabuife, Onwuka and Ojukwu, (2015) sought to examine knowledge management and organizational performance of some Selected Commercial Banks in Awka. Anambra state Nigeria The study employed descriptive research design with a sample size of 30 staff. The questionnaire Was the instrument for data collection and data gathered was analyzed using Pearson's product moment correlation. The findings revealed that there was a positive relationship between knowledge identification and organizational performance. It also reveals that knowledge acquisition has a positive effect on organizational performance. This study was limited to the banking sector.

A study was also conducted by Shakeel, Mohammad and Mohammad, (2015) was carried out to examine the impact of knowledge management practices on organization performance among the banking sectors in Pakistan. A survey research design was adopted and the sample size of the study was 256. The questionnaire instrument was used to gather data and the data was analyzed using Pearson's correlation analysis. The findings revealed that all knowledge

management processes have a positive impact on organizational performance. This study is limited to only some selected banks in Pakistan.

Furthermore, Al- Hayaly and Alnajjar (2016) using Private Jordanian Universities examined "Knowledge Management Processes and Their Impact on Organizational Performance, the Adoption Balanced Scorecard: the Moderating Role of Quality Assurance Standards". A survey research design was adopted using stratified random sampling method. The total number of universities was 15 with 2567 employees as the total population. 334 questionnaires were distributed, 297 were returned and 290 were valid for analysis. Analysis was conducted using linear regression method. The result showed a significant impact of quality assurance standards on improving the impact of knowledge management on organizational performance. However, this study is limited to only private universities thereby excluding the public universities from the research.

In addition, Fatemeh and Jamal, (2017) investigated on "The Impact of Knowledge Management on Organizational Productivity" using Koosar Bank of Iran. A survey research design was used. The sample size was 210 employees drawn from the total population of employees in the different branches of the bank. 210 questionnaires were used for analysis. Multiple regression and pearson matrix of correlation analysis was conducted. The findings were that knowledge management impacts positively on organizational productivity. This finding is limited to only one bank in Iran.

METHODOLOGY

This study adopted the cross-sectional survey research design. The population of the study is 208 managers consisting of sales managers and non-sales managers of five (5) randomly selected companies in Delta State. The selected firms include; Izisco Obos Institute of Maritime Studies, Lenimar Ocean Trawlers Limited, Airtel Office, Bablinks Resources Limited and Made Energy Service Limited. The sample size is 140 using the proportional sampling method.Primary data were collected using questionnaire to generate quantitative response. The questionnaire used in this study was a modified questionnaire used by Shakeel, Mohammad and Mohammad (2015) .The reliability coefficient of their responses was established using the Cronbach's Alpha since their responses were in different scales. From the results of the reliability test, the Cronbach's Alpha values obtained ranged from 0.73 to 0.90

for items on the questionnaire that measured the various dimension of knowledge management processes. Additionally, the reliability coefficient for items that measured organizational efficiency had Cronbach's Alpha values that ranged from 0.78 to 0.92. Simple regression models were formulated based on the respective variables (dependent and independent variables). The dependent variable of the study is organizational efficiency while the independent variable is knowledge management processes which for the purpose of this study has been categorized into three dimensions (knowledge acquisition, knowledge sharing and knowledge application). For the purpose of testing the hypotheses of this study, simple regression models linking the dependent variable with measures of the independent variable is estimated in the following working models in line with the specific objectives and hypotheses of the study.

ORGEF = f(KMP).....Eq. 1

Where:

ORGEF = Organizational Efficiency

KSP = Knowledge Management Processes

On the basis of the above, each of the hypotheses of this study shall be tested with the following models.

Model I

ORGEF = f(KAQ) Eq. 2

Model II

ORGEF = f(KSH) Eq. 3

Model III

ORGEF = f(KAP) Eq. 4

Assuming a linear relationship between the variables in equations 2 - 4, the explicit forms of equations 2 - 4 would therefore be represented as follows:

$ORGEF_t = a_0 + a_1KAQ_t + e_t$ Eq. 5

$ORGEF_t = a_0 + a_1KSH_t + e_t$ Eq. 6

$ORGEF_t = a_0 + a_1KAP_t + e_t$ Eq. 7

Where:

KAQ = Knowledge Acquisition

KSH = Knowledge Sharing

KAP = Knowledge Application

it = Parameters indicating individual firms

$a_0; a_1;$ = Regression Coefficients

e_t = Error term

Data collected from the finalized responses were summarized, coded, tabulated and checked for any errors and omissions. The responses obtained were analyzed using descriptive and inferential statistics. The mean and standard deviation were used to analyze the responses and find answers to the research questions while the test of hypotheses and the decision on whether to accept or reject each hypothesis was based on the result of the F-test in the multivariate analysis. Hypotheses were however tested at 0.05 level of significance. In order to achieve the above, the researcher utilized a computer software package - STATA 13.0.

DATA ANALYSIS AND RESULTS

Results of the Hypotheses Testing

This section presented the results of research hypotheses based on three (3) null hypotheses and were tested via simple regression results. Specifically, simple regression was used to examine the effect of knowledge management processes dimensions (knowledge sharing, acquisition and application processes) and organizational efficiency among the selected companies in Delta State.

Hypothesis 1:

HO_1: There is no significant relationship between knowledge sharing processes and organizational efficiency.

Table 1. Analysis of the relationship between Knowledge Sharing Processes (KSP) and Organizational Efficiency (ORGEF) among the Selected Companies in Delta State

. regress orgef ksp

Source	SS	df	MS		
				Number of obs =	125
				F(1, 123) =	1074.80
Model	73.5303329	1	73.5303329	Prob > F =	0.0000
Residual	[illegible]	123	.06841[illegible]	R-squared =	0.8973
				Adj R-squared =	0.8965
Total	[illegible]	124	.66084[illegible]	Root MSE =	.26156

orgef	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
ksp	1.020166	.0311177	32.78	0.000	.958571	1.081762
_cons	-.2290721	.1351613	-1.69	0.093	-.4966156	.0384715

Source: Researcher's Computation via STATA.13.0

Table 1. Showed the regression outcome on the relationship between knowledge sharing processes (KSP) and organizational efficiency (ORGEF) among the selected firms in Delta State. The R^2 with value 0.8973 is an indication that 90% of the variation in ORGEF has been explained by KSP. This is a good fit since the unexplained variation in the model is just 10%. Besides, the t- ratio and p-value (t-ratio = 32.78; p-value = 0.000 < 0.005) is an indication that KSP is a major determinant of ORGEF among the selected companies in Delta State. Furthermore, the f-ratio with value 1074.80 (F 1, 123) indicated that there is significant relationship between knowledge sharing processes and organizational efficiency. Hence, the null hypothesis was rejected and the alternative hypothesis was accepted.

Hypothesis 2:

HO_2: There is no significant relationship between knowledge acquisition processes and organizational efficiency.

Table 2. Analysis of the Relationship between Knowledge Acquisition Processes (KAP) and Organizational Efficiency among the Selected Companies in Delta State

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. regress orgef kap
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Source	SS	df	MS	Number of obs = 125
				F(1, 123) = 1328.47
Model	75.3008284	1	75.3008284	Prob > F = 0.0000
Residual	6.84429228	123	.056457661	R-squared = 0.9167
				Adj R-squared = 0.9146
Total	81.9451207	124	.660847748	Root MSE = .23761

orgef	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
kap	.8869089	.0243337	36.45	0.000	.8387429 .9350749
_cons	.5148337	.1015782	5.07	0.000	.3137659 .7159015

Source: Researcher's Computation via STATA.13.0

Table 2. Showed the regression outcome on the relationship between knowledge acquisition processes (KAP) and organizational efficiency (ORGEF) among the selected firms in Delta State. The R2 with value 0.9153 is an indication that 92% of the variation in ORGEF has been explained by KAP. This is a good fit since the unexplained variation in the model is just 9%. Besides, the t- ratio and p-value (t-ratio = 36.45; p-value = 0.000 < 0.005) is an indication that KAP is a major determinant of ORGEF among the selected companies in Delta State. Furthermore, the f-ratio with value 1328.44 (F 1, 123) indicated that there is significant relationship between knowledge acquisition processes and organizational efficiency. Hence, the null hypothesis was rejected and the alternative hypothesis was accepted.

Hypothesis 3:

Ho3: There is no significant relationship between knowledge application processes and organizational efficiency.

Table 3: Analysis of the Relationship between Knowledge Application Processes (KAPP) and Organizational Efficiency among the Selected Companies in Delta State

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regress orgef kapp
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Source	SS	df	MS	Number of obs = 125
				F(1, 123) = 1969.79
Model	77.1741224	1	77.1741224	Prob > F = 0.0000
Residual	4.77053828	123	.038785352	R-squared = 0.9418
				Adj R-squared = 0.9413
Total	81.9451207	124	.660847748	Root MSE = .19694

orgef	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
kapp	.9773687	.0277985	47.61	0.000	.9282192 .1265182
_cons	.1200711	.0915426	1.40	0.164	-.0531518 .293294

Source: Researcher's Computation via STATA.13.0

Table 3 showed the regression outcome on the relationship between knowledge application processes (KAPP) and organizational efficiency (ORGEF) among

the selected firms in Delta State. The R^2 with value 0.9418 is an indication that 94% of the variation in ORGEF has been explained by KAPP. This is a good fit since the unexplained variation in the model is just 6%. Besides, the t- ratio and p-value (t-ratio = 44.61; p-value = 0.000 < 0.005) is an indication that KAPP is a major determinant of ORGEF among the selected companies in Delta State. Furthermore, the f-ratio with value 1989.79 (F 1, 123) indicated that there is significant relationship between knowledge application processes and organizational efficiency. Hence, the null hypothesis was rejected and the alternative hypothesis was accepted.

DISCUSSION OF FINDINGS

This study sought to examine knowledge processes and organisational efficiency. In research hypothesis I, the regression outcome on the relationship between knowledge sharing processes (KSP) and organizational efficiency (ORGEF) among the selected firms in Delta State showed that R2 with value 0.8973 is an indication that 90% of the variation in ORGEF has been explained by KSP. This is a good fit since the unexplained variation in the model is just 10%. Besides, the t- ratio and p-value (t-ratio = 32.78; p-value = 0.000 < 0.005) is an indication that KSP is a major determinant of ORGEF among the selected companies in Delta State. Furthermore, the f-ratio with value 1074.80 (F 1, 123) indicated that there is significant relationship between knowledge sharing processes and organizational efficiency. Hence, the null hypothesis was rejected and the alternative hypothesis was accepted. This finding is in line with the work of Al- Hayaly et al, (2016) whereby knowledge sharing process which is a dimension of knowledge management processes has a significant relationship with organizational efficiency.

In the case of research hypothesis II, the regression outcome on the relationship between knowledge acquisition processes (KAP) and organizational efficiency (ORGEF) among the selected firms in Delta State showed that the R2 with value 0.9153 is an indication that 92% of the variation in ORGEF has been explained by KAP. This is a good fit since the unexplained variation in the model is just 9%. Besides, the t- ratio and p-value (t-ratio = 36.45; p-value = 0.000 < 0.005) is an indication that KAP is a major determinant of ORGEF among the selected companies in Delta State. Furthermore, the f-ratio with value 1328.44 (F 1, 123) indicated that there is significant relationship between knowledge acquisition processes and organizational efficiency. Hence, the null hypothesis was rejected and the alternative hypothesis was accepted. This result is in line with the work

of Shakeel et al, (2015) by which knowledge acquisition process which is a dimension of knowledge management processes has a positive relationship with organizational efficiency.

Finally, in the case of hypothesis III, the regression outcome on the relationship between knowledge application processes (KAPP) and organizational efficiency (ORGEF) among the selected firms in Delta State showed that the R^2 with value 0.9418 is an indication that 94% of the variation in ORGEF has been explained by KAPP. This is a good fit since the unexplained variation in the model is just 6%. Besides, the t- ratio and p-value (t-ratio = 44.61; p-value = 0.000 < 0.005) is an indication that KAPP is a major determinant of ORGEF among the selected companies in Delta State. Furthermore, the f-ratio with value 1989.79 (F 1, 123) indicated that there is significant relationship between knowledge application processes and organizational efficiency. Hence, the null hypothesis was rejected and the alternative hypothesis was accepted. This finding is in accordance with the work of Alsalim et al, (2013) which indicates that knowledge application process, a dimension of knowledge management processes has a significant relationship with organizational efficiency.

CONCLUSION AND RECOMMENDATIONS

Properly designed knowledge management processes gives employee flexibility, reduce design time and organizational costs (Katsuro et al, 2013). There is need for organizations to bring all stakeholders together in order to adopt a strategy that will consider knowledge management, put it into practice in order sustain a competitive advantage in the business world. Therefore, the management of the selected firms should ensure that there is proper implementation of knowledge management processes so as to ensure efficiency. Thus, this study recommends that organizations should give more attention to the key processes of knowledge management components namely: knowledge acquisition, knowledge sharing and knowledge application because they significant have a positive impact on organizational efficiency. This study has contributed to knowledge by giving evidence of knowledge management processes and organizational efficiency from a developing country perspective and thereby adds to existing literature in the field of knowledge management.

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