Knowledge Management and Organizational Performance in Manufacturing Firms in Nigeria

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Abstract

Knowledge management and organizational performance of manufacturing firms in Nigeria have been adequately investigated. Data was obtained through the use of questionnaire and personal interviews of the sampled population. The hypothesis for the study were tested using the spearman rank order correlation co-efficient designated as rho. The findings of this research study shows amongst others that: there exists a positive relationship between knowledge transfer, organizational memory and knowledge retrieval with improved organizational profit, organizational growth and market share. The findings further shows that inadequate funding, poorly trained personnel/manpower, as well as poor technology in operations affects the effective implementation of knowledge management. The study has recommended amongst others that, manufacturing firms should provide knowledge management systems for users in a structured way to retrieve data and information to increase corporate effectiveness. Manufacturing firms should ensure the effective management of their operations in order to achieve their goals/objectives. And that manufacturing firms should be both proactive and innovative and must be concerned about their product quality and services so as to sustain the patronage of its customers.

Keywords: Knowledge Management, Knowledge sharing, knowledge retrieval, Market shares.

Introduction

Organizations exist principally to provide quality goods and services to customers. However, in an attempt to provide these services, efforts must be made by the management of the firms to carve out a niche for themselves. In other words, the ability of the organization to compete and survive in its environment actually depends on the quality of its goods or services thereby resulting in performance. Performance according to Johnson and Hart (2019) is designated in terms of financial and non-financial outcomes. In view of this, the performance of any organization is fundamentally dependent on the contribution and effort of its employees.
because despite that competitive advantage is associated with a number of factors within the organization, human resource is considered the most valuable of all (Melvin, 2015).

In view of this, training, development and mentoring of the less-experienced employees becomes imperative to improve the performance of the organization and this can only be achieved through effective knowledge management approach. Indeed, emphasis on knowledge management stems from the fact that all organizations desire to improve their standards and establish themselves more in their chosen areas of operations. Knowledge management refers to an organizational strategic effort to gain competitive advantage by capturing and using the intellectual assets held by its employees and customers to enhance learning and performance in the organization (Hart and Kalamama, 2020). Thus, emphasis on knowledge management implies that organizations can use it to ultimately boost its performances. This explains why experts believe that organizations currently implementing knowledge management must ensure that their organization’s strategy on knowledge management is deeply rooted in its core value linked to its products and services (Arora, 2002). In other words, organizations must ensure that the implementation of knowledge management practices results in retaining the expertise of employees’ products/services and increased profits or revenues (Becerra-Fernandez, et al., 2004).

However, despite the importance of effective knowledge management approach in vitalizing the performance of organizational success, there seems to lack empirical evidence in Nigeria in this direction. Some empirically established evidence points to other environment without due justice to our organizations Johnson et al. (2019) that studied the impact of knowledge management on organizational performance of companies in Slovenia and Croatia and the study findings confirms that indeed knowledge management acts as a lubricant in the improvement of organizational performance. Relying on the forgoing literature reviewed thus far, the main aim of this research is to critically evaluate the impact of knowledge management and organizational performance.

Due in part to the dynamic nature of the environment Johnson and Ossia (2019) observed that the Nigerian business environment is rife with various challenges and uncertainty stemming from poor power generation, obsolete technology, lack of synergy between government agencies, poor infrastructure, insecurity, weak policy implementation, poor transportation network and connectivity as well as a high level of corruption and unethical practices amongst government officials (Ogunro, 2014). Wickham (1998) argues that entrepreneurship is a key factor in addressing the challenges and opportunities presented by change. Therefore effective knowledge management mechanism is considered a viable tool in the transfer of such learnable entrepreneurial skill within the organizational members.

According to Uzoma & Johnson (2019) who stressed that irrespective of the size of the organization, knowledge could be transfer favorably and adequately. This principle, the author argues, is focused on the effective management of workers skills, expertise and
experience; one in which they are regarded as a primary source of corporate performance and productivity. Going by the above argument, this study tends to determine how the application of knowledge management process can enhance corporate performance of manufacturing firms in Nigeria.

The following hypotheses are stated to guide the study:

**H₀₁:** There is no significant relationship between knowledge retrieval and market share.

**H₀₂:** There is no significant relationship between knowledge retrieval and organizational profitability of manufacturing firms in Nigeria.

**H₀₃:** There is no significant relationship between knowledge retrieval and organizational growth of manufacturing firms in Nigeria.

**Significance of the Study**

Given that organizations are aware of the important role that the implementation of knowledge management will have on the quality of the products, services and general operations, the findings of this study will significantly impact the manner organizations position themselves for competitive advantage. Several studies have shown that the use of knowledge management methods and practices in organizations ultimately improves the capacity of the organizations for improved quality service delivery, improvement of the skills and competence of employees and the general well-being of the organizations.

**Literature Review**

We adopted the social exchange theory since knowledge is basically a shared concept that enhances the growth of the organization (Melvin, 2015). The Social Exchange Theory holds that when workplace interactions are effective, the organization benefits abundantly from it. This is why it is considered an important management task especially, for first level managers to unit heads just to ensure that effective workplace networks and interaction is maintained (Melvin, 2003). Adoption of social exchange theory helps employees experience mutual reciprocity of resources, information, respect and power with supervisors in particular; and management generally should also experience high perceptions of autonomy. Moreover, they would be satisfied with the resources, information, relationships and synergy offered by the supervisor, as well as the job generally – hence, they would be committed to staying in the organization and giving their best to the organization. In contrast, those employees operating in a workplace dictated by a poor flow of information, poor relationships and resources within a hierarchical bureaucratic workplace would be more likely to have a low level of satisfaction with their supervision and thus a poor level of service quality. It is expected that such employees would also experience a low level of autonomy and would therefore have a low level of satisfaction with the organisation and hence be more likely to perform poorly towards customers and clients (Johnson & Kalio 2018).
Workers levels of commitment to a greater extend enhanced their level of input to the organizational activities (Johnson et al, 2018), provides guidance in self-management (Dose & Klimoski, 1995) and often precedes moving from one organization to the other (Johnson et al, 2018). A growing body of research, however, questions the universality of social science models from one society to another (Hart, 2019), including the application of social exchange-based explanations for employee attitudes (Hart, 2019). Johnson (2018) argued that, the manner with which norms of reciprocity is universally practiced is accepted.

**Concept of Knowledge Management**

The concept of knowledge management has been defined in various ways by a great number of scholars. Eketu (2010) defined knowledge management as the leveraging of the intellectual assets either in the form of explicit knowledge held in artifacts or as fact knowledge possessed by individuals or communities. Similarly, Valentine (2002) defined knowledge management as a comprehensive collection of organizational practices and approaches in relation to generating, capturing, disseminating know-how and other content relevant to the organization’s business. Again, knowledge management is considered to have a far reaching impact on individual members of the organization, processes, products and the overall corporate performance of the organization (Arora, 2002). In today’s economy knowledge is people, money leverage, learning, flexibility, power and competitive advantage. A well-managed knowledge base is more relevant to sustained business than capital, labor or land (Morten, 1999). A holistic view considers knowledge to be present in ideas, judgments, talents, relationships, perspectives and concepts. Knowledge is stored usually stored in people’s brains or encoded in the organizational processes, documented, product, services facilities and systems (Denham & Grey).

Knowledge is considered the basis for, and the driver of our postindustrial economy. Knowledge is the result of learning which provides the only sustainable competitive advantage; it is considered a value-added behavior and activities; for a given knowledge to be of value it must be focused, current tested and shareable. Knowledge management complements and enhances other organizational initiatives such as total quality management (TQM), business process reengineering and organization learning, providing a new and urgent focus to sustain competitive advantage.

**Corporate Performance**

The corporate performance of any organization hinges on a lot of factors. It ranges from the appropriate management of organizational resources, improvement in production inputs/processes, employment of qualified manpower etc. (Volte & Crazan, 2009). Specifically, Drudcer (2009) views corporate performance as the comprehensive end results of all the organization’s work process and activities. Corporate performance improves with
the implementation of knowledge management initiatives or practices which ultimately enhances the exposure of employees to new ideas and processes.

Multiple studies have revealed clearly the importance of knowledge management implementation and the capacity for improving the levels of corporate performance viz-a-viz; informed expertise of employees, improved customer satisfaction, increased revenue, improved market share etc. (Jones, 2015). Similarly, Schack (2004) notes that corporate organizations that have implemented knowledge management practices have generally improved the capacities of their organizations to remain productive. This effort further underscores the importance of knowledge management in improving corporate performance.

There have been several models/frameworks geared towards an attempt to explain the concept of knowledge management and facilitate its understanding (Johnson and Kalio 2019). Within the context of this work knowledge management will be explained with a view to facilitating the understanding between knowledge management and corporate performance.

**Knowledge Retrieval**

The essence of knowledge retrievals system is to lessen the problem of those processors through enhanced search and representation; this enhancement is required to level the increasing data flow in the organization (Ossia, 2019). Knowledge retrieval process provides knowledge to those in need of it in a well-structured manner compared to data retrieval and information retrievals; they utilize different models, access methods, result organization etc. Data retrieval and knowledge systems are anchored on improved arrangement of information. Indeed, knowledge retrievals involves organizing the data and document by filing as well as organizing information by specifying connections between components in those documents (Sconthorpe, 2010).

Odum (2018) observes that information technology plays a vital role in the success of information (knowledge) storage. He confirmed that information technology support organizational memory by making recorded knowledge retrievable when needed or by making individuals with knowledge accessible. Pilar et al, (2005) assert that a well-integrated and accessible knowledge within an organization is a strategic resource to organizational learning.

**Organizational Performance**

Organizational success is measured through its’ performance, or turnover of products that result from management decisions and the execution of those decisions by employees of the organization (Carton & Hofer, 2006). Performance draws a relation between minimal and effective cost (economy), between effective cost and realized output (efficiency) and between output and achieved outcome (effectiveness) it therefore underscores that it is the efficiency and effectiveness of the organization that determined its’ performance (Johnson, 2019).
Boman & Deal, (2003) states, an organization is performing and effective when it takes advantage of its environment in the acquisition of high value and scarce resources such as immutable knowledge to complement its operations. So a better environmental adaptability which breeds survival is held synonymous with performance. A performing and effective organization considered as that which has a high degree of collaboration and commitment among stakeholders through work groups, team projects and management (Cohen & Bradford, 2005). But note that Scott and Dalvin, (2007), have proposed that the flexibility and the ability of the organization to take advantage of its environment in the acquisition of internal and external resources are indicators of performance. Youseff, (2014) has opined that performance should be analyzed from the spheres of both behaviors and results, noting that behaviors emanate from the performer who transforms performance from abstraction to action. He further stipulated that behaviours were not just the instruments for results, but were also outcomes in their own right – the product of mental and physical effort applied to tasks and can be judged apart from results.

Knowledge management and Market Share

An enhanced market share shows a domineering position enjoyed by an organization when comparing to another organization within that market domain. The firm with the highest market share is the one with a commanding leadership in the market. Scherer and Ross (1990) noted that: (1) due to individual firms having high market shares, those highly concentrated industries have high profits; and (2) In calculation to industry profitability, massive firm profits are apportioned with greater weight. Owing to these facts possibly without any collusion, a positive market share-profitability relationship will lead to a positive concentration-profitability relationship; there is a necessity to find out how the link between market share and profit.

Knowledge management and Growth

A firm’s growth represents its market position when compared with other firms in the industry. Organizations in their operations are those who are able to effectively manage their resources more prudently. In measuring organizational growth, increase in employee is considered a proxy measure of growth as it indicates the addition of employees in anticipation of sales growth, and will therefore be redundant if sales growth is already used (Kurunda et al, 2010). The other possible indicators of business growth are operating assets growth, which of course is considered a measure of organizational effectiveness rather than organizational performance.

Growth is the relative increase in size produced by the achievement obtained from new markets, product lines or operational areas. Most small firms desire growth because it is perceived as a visible indication of success and progress. Robbins, (2001) suggest that an organization can achieve growth through the adoption of different growth strategies such
concentration, vertical integration, horizontal integration or diversification. Those through the utilization of either of these strategies, a company can increases its revenues, size of its workforce and market share.

Knowledge Management and Organizational Performance

Knowledge transfer, retrieval, and organization have been considered as key components of knowledge management systems and important element of creative behaviors in any organizations (eketu, 2016). Therefore, organizations that effectively enable organizational and individual knowledge dissemination usually improve employees’ participation and better utilization of their existing knowledge resources and concurrently create new knowledge (Johnson & Celine, 2019; Hart, 2019); The benefits of this to the organization is a cumulative result of a positive and guided new employee under a trained and committed senior of which results in improved organizational performance, satisfied workforce, lower attrition and improved employer branding (johnson, 2019; Armstrong, 2006).

Several studies have revealed the importance knowledge management implementation has and the capacity for improved level of corporate performance, improved customer satisfaction, increased revenue, improved market share etc. (johnson & Celine 2019; Hart 2019). Similarly, Melvin, (2015) noted that corporate organizations that have implemented knowledge management practices have generally improved the capacities of their organizations to remain productive. This effort further demonstrates and underscores the importance of knowledge management in improving corporate performance.

Methodology

Research Design

Cross-sectional survey design was adopted for the research. This was considered necessary for the study since data obtained through the survey with a questionnaire are standardized, allowing easy for comparison. Furthermore, according to Ashland (2006), descriptive research studies are intended to isolate pertinent and precise information in respect to current state of the phenomena and, where possible, draw valid general conclusions from the facts revealed. Baridam, (2008) stated that the population of a study covers the total items that the researcher intends to evaluate. According to Baridam, (2001), cluster sampling is used in large scale descriptive studies involving a target population with geographically dispersed sampling unit.

According to Obioma, (1987) sampling is the process through which a subset of elements or observations from a group is captured and investigated so as to make conclusions about the features of the elements. A sample occurs when a number of sampling units is fewer than the aggregate drawn from a given population and examined in details. Since the population is
finite, a sample size that can be feasibly covered is acquired. However, the sample size for this study was obtained using the Taro Yamen’s formula as shown below:

\[ n = \frac{N}{1 + N(e)^2} \]

Where;

- \( n \) = sample size sought
- \( e \) = level of significance
- \( N \) = population size

Applying the formula above,

\[ n = \frac{104}{1 + 104(0.05)^2} \]
\[ n = \frac{104}{1 + 0.126} \]
\[ n = \frac{104}{1.126} \]
\[ n = 83 \]

Therefore, the study sample size will be 83 respondents.

**Methods of Data Analysis**

In this context data obtained from the field was sorted and categorized. Based on this descriptive statistics such as frequencies, tables, percentages, mean and standard deviation were utilized for the respondents demographic and items associated with characteristics of the respondents. However, to assess the degree and direction of the association between variables under study, inferential statistic was adopted using Spearman’s Rank Order Correlation Statistics. This aided us in verifying the nature of association between the examined variables. It is a non-parametric way of testing hypothesis raised Spearman. It ranks paired observations requiring at least ordinal data. The formula for the spearman’s rank-order correlations is as follows:

\[ r_s = \frac{\sum d_i^2}{n(n^2 - 1)} \]

Where \( r_s \) = Spearman’s rank correlation coefficient

\( d_i \) = differences in ranking of a given observation
n = number of observation

By design, it is constrained as follows: -1 < r_s < 1 and its interpretation is, the closer r_s is +1 the stronger the monotonic relationship. The sign of a correlation of (+ or -) indicates the direction of relationship between -1.00 and +1.00. Variables may be positively or negatively correlated. A positive correlation indicates a direct, positive relationship between two variables. A negative correlation, on the other hand, indicates an inverse, negative relationship between two variables (Gouldner, 1960).

Hypothesis 1: There is no positive and significant relationship between knowledge transfer and market share.

<table>
<thead>
<tr>
<th>Type</th>
<th>Variables 1</th>
<th>Statistics</th>
<th>Knowledge transfer</th>
<th>Market share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman’s rho</td>
<td>Knowledge transfer</td>
<td>Correlation coefficient</td>
<td>73.0</td>
<td>347***</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>75</td>
<td>75</td>
</tr>
<tr>
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<tr>
<td></td>
<td>N</td>
<td></td>
<td>75</td>
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</table>

**Correlation is significant at the 0.05 level (2-tailed)

Thus, applying the formula Rho = 1 -

= 1 - 0.49

= 0.51

Rho = 0.51

Thus, since perfect correlation between the two variables ranked would result in a value of +1 if the variables are positively correlated; a value of 0.51 as computed above indicates a moderate correlation between the two variables ranked. Also, in order to test the null hypothesis (H₀₁), the critical Z value of at 0.05 level of significance was used. For a two-tail test, at 0.05 level of significance, the critical Z value = ±1.96.

Z test was used to test the significance of the ranked variables. Z test was used since sample size is greater than 50.
\[ Z = r - \rho \ (0.51) \] and \( n = 50 \)

\[ Z = \rho \]

\[ Z = 0.51 \times 8.6 = 4.4 \]

**Decision Rule**

If the calculated \( Z \) value is less than or falls within the critical \( Z \)-value of \( \pm 1.96 \), then accept (\( H_{01} \)), null hypothesis, and reject \( H_{A1} \) (alternate hypothesis). However, if calculated \( Z \) value is greater than the critical \( Z \) value of \( \pm 1.96 \), then reject \( H_{01} \) and accept \( H_{A1} \) (alternate hypothesis).

**Implication**

The null hypothesis (\( H_{01} \)) was rejected implying that there is a relationship between knowledge transfer and market share.

**Hypothesis 2:** There is no positive and significant relationship between knowledge retrieval and market share.

**Table 2. Hypothesis 2**

<table>
<thead>
<tr>
<th>Type</th>
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<th>Statistics</th>
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<th>Market share</th>
</tr>
</thead>
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<td>N</td>
<td>75</td>
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</tr>
</tbody>
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**Correlation is significant at the 0.05 level (2-tailed)**

Thus, applying the formula; Rho 1 -

\[ = 1 - 0.49 \]
\[ Rho = 0.51 \]

Thus, since perfect correlation between the two variables ranked would result in a value of +1 if the variables are positively correlated; a value of 0.51 as computed above indicates a moderate correlation between the two variables ranked.

Also, in order to test the null hypothesis \((H_{O2})\), the critical value of \(Z\) at 0.05 level of significance was used. For a two-tail test, at 0.05 level of significance, the critical \(Z\) value = ±1.96.

\(Z\) test was used since sample size is greater than 50.

\[ Z = r - rho \] (0.51) and \(n = 75\).

\[ Z = r \]

\[ Z = rho \]

\[ Z = r \times 8.6 \]

\[ = 4.4 \]

**Decision Rule**

If the calculated \(Z\) value is less than or falls within the critical \(Z\) value of ±1.96, then accept \(H_{O2}\) (null hypothesis) and reject \(H_{A2}\) (alternate hypothesis). However, if calculated \(Z\) value is greater than the critical \(Z\) value of ±1.96, then reject \(H_{O2}\) and accept \(H_{A2}\) (alternate hypothesis).

**Decision**

Given that the calculated \(Z\) value equals 4.4 and is greater than the critical \(Z\) value, ±1.96 at 0.05 level of significance (i.e. 4.4 > ±1.96), then reject \(H_{O2}\) and accept \(H_{A2}\).

**Implication**

Given that the calculated \(Z\) value equals 4.4 and is greater than the critical \(Z\) value, 1.96 at 0.05 level of significance (i.e. 4.4 > ±1.96) then reject \(H_{O2}\) and accept \(H_{A2}\).

**Discussion of findings**

Null hypothesis 1 (\(H_{O1}\)) seeks to established the relationship between knowledge retrieval and corporate growth. The hypothesis was tested using the spearman rank order correlation co-
efficient, designated as rho. As can be seen from the analysis of data, majority of the respondents agreed that there exists a relationship between organizational memory and corporate growth. The ranked observations of the respondent as shown in table 1 also led to the rejection of the null hypothesis (H01).

Therefore, knowledge retrieval which are largely reflected in the rules, procedures, technologies, beliefs and cultures that are conserved through socialization and control in the organization in critical to boosting and sustaining increased corporate growth. This finding supports the view expressed by Johnson and Celine (2019) who argues that there is a connection between individual memories and organizational memories which ultimately shapes corporate growth.

Null hypothesis two (H02) sought to ascertain the relationship between knowledge retrieval and market share. Thus, it was hypothesized that there is no relationship between knowledge retrieved and market share. The hypothesis was tested using the spearman rank order correlation co-efficient, designated as rho. As can be seen from the analysis of data, majority of the respondents agree that there exists a relationship between knowledge retrieval and market share. The ranked observations of the respondents, as shown in table 2, also led to the rejection of the null hypothesis (H01). Therefore, knowledge retrieval systems which help in providing knowledge to users in a structured way helps ultimately to boost the market share of organizations.

Summary

This study examined the relationship between knowledge management and organizational performance of manufacturing firms in Nigeria. The study is basically quantitative and examined the relationship between the variables using statistical techniques considered as appropriate given the distribution and scaling system (5-point Likert) adopted in the measurement of the variables. The study is considered as quasi-experimental as it investigates the variables within the natural and non-contrived settings of the framework of the organization. As such the cross-sectional survey design was adopted in the assessment of the relationships and data was obtained using structured questionnaire, distributed to the target organizations.

The process of the study was deductive as it draws from extant literature on the conceptualization and relationship of the variables as found by previous scholars, as well as the review of theories which define, describe and predict the relationship between the variables. The hypotheses tested determined the extent to which knowledge management elements influence on organizational performance measures. The findings for the study proved that all elements of knowledge management significantly relates with all measures of organizational performance.
Conclusion

The researcher has established clearly that there exists a positive and significant relationship between knowledge retrieval and increased organizational profit and organizational market share. Otherwise, the implementation of knowledge management system such as knowledge transfer, knowledge retrieval impacts positively on organizational profit and market share. It was further established that knowledge management is one of the strategies used by organizational managers and businesses to dominate or compete with competitors. It is used within the industry to increase market share, increase shareholders wealth and to achieve organizational benefits which include profitability. Knowledge management has proven to be effective among businesses or corporate organizations in Nigeria. Since every successful business is set to be so because of their need to share knowledge.

Recommendations

The following recommendations were made:

1. Manufacturing firms should provide knowledge management systems for users in a structured way to retrieve data and information to increase corporate effectiveness.
2. Manufacturing firms should ensure the effective management of their operations in order to achieve their goals/objectives.
3. Manufacturing firms should be both proactive and innovative and must be concerned about their product quality and services so as to sustain the patronage of its customers.

References


