

OPERATIONAL SYSTEM AND ORGANIZATIONAL PERFORMANCE OF MANUFACTURING FIRMS IN RIVERS STATE

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ABSTRACT: *This paper examined the relationship between operational system and organizational performance of manufacturing firms in Rivers State. The objectives of the study were to assess the relationship between operational systems and two measures of organizational performance – product offerings and resource utilization. Data was obtained from 82 respondents from the population of 22 manufacturing firms in Rivers State using the questionnaire instrument. The Spearman’s rank order correlation tool was utilized in the test for the relationship between the operational systems and the measures of organizational performance. Evidence revealed that there is a significant relationship between strategic systems and both measures – product offerings and resource utilization. Based on this analysis, all previous hypotheses were rejected. In conclusion it was stated that the adoption and application of operational systems in the functionality and processing of human resource activities drives organizational long-term goals and offers a repositioning of human resource functions and behaviour which enhances the product offerings and resource utilization of manufacturing firms in Rivers State*

Keywords: *Operational systems, organizational performance, product offerings, resource utilization*

INTRODUCTION

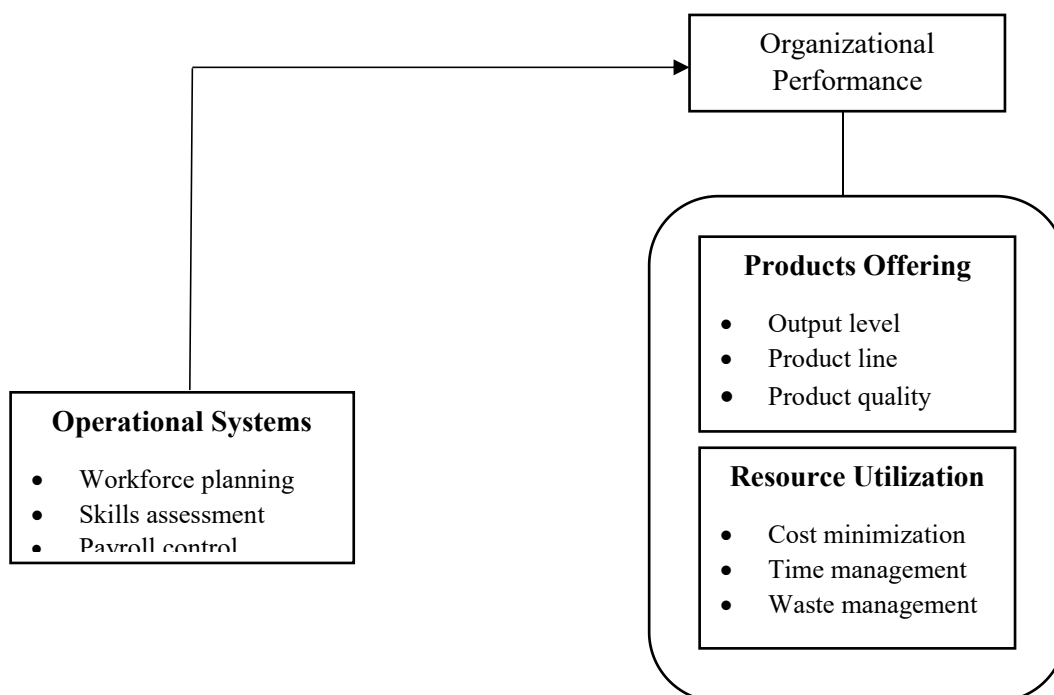
The Nigerian business environment is constantly changing and evolving, primarily due to the complexities and intricacies of globalization and advanced technological systems. While most firms within developed nations appear to lead and spur on such changes, manufacturing firms within Nigeria have been noted to be adversely affected by such advancements (Ojua, 2016; Egbunike et al, 2015). This is evident in the decline and poor productivity levels of these firms wherein Egbunike et al (2015) observed that most of the popular and well-recognized names in the manufacturing industry have been dropped off the market radar as a result of their inability to compete and function within the current dispensation. Recent studies further indicate that despite interventions from the government to stir, support and grow its local industries, evidence of such growth has remained minimal. The view of studies such as those of Ojua (2016) is that the challenge and problems associated with the manufacturing sector are not external but bother on internal mechanisms and inefficiency of resource utilization processes.

A considerable number of studies premised on the performance of manufacturing firms in Nigeria appear to share the views (Upadhaya *et al*, 2014; Zeb-Obipi, 2015). This is as undesirable outcomes such as the low productivity and poor resource utilization can be traced to the inefficiency of work systems and the inconsistencies of existing human resource management models applied within this firms. This is as Egbunike *et al* (2015) affirmed that most of these organizations, even within the current technological age, still rely a great deal on out-dated human resource management practices, lacking in flexibility and the capacity of effectively and optimally applying, coordinating and harnessing the efforts, skills and knowledge of the human resource in the functionality of the organization. Egbunike (2015) further noted that this situation presents the organization with a disadvantage which over the years has drained both capital investments and financial resources as it has been left unchecked and overlooked.

Subsequently, it is argued that while the human resource element of the organization is critical to its functionality and wellbeing, it is however their effective management and coordination that facilitates the required productivity levels and efficiency of resource utilization in the organization (Omiunu, 2014; Upadhaya *et al*, 2014; Zeb-Obipi, 2015). Noteworthy also it the role of technologically oriented approaches towards the management such human resources given the competitive features of not only the Nigerian product market but also the labour-intensive characteristics of most manufacturing firms in Nigeria; an attribute which requires a more thorough and consistent platform with higher tendencies for data accuracy and performance tracking. This is as Lippert and Swiercz (2005) opined that the adoption and application of human resource information systems enhances the work arrangements and relations within the organization while at the same time ensuring inputs match expected organizational outputs. According to Hussain and Wallace (2007), the effective installation and applications of the strategic, tactical and operational system have a strong and substantial bearing on the functions and behaviour of the workers and invariably impacts on organizational outcomes.

As earlier noted, several studies on organizational performance have emphasized on antecedents which advance the features of the workforce such as human resource development, training, compensation and development (Omiunu, 2014; Cugin, Ng & Lee, 2016; Hekkala, Stein & Rossi, 2018), nonetheless there is a paucity of research that has addressed the technological and systematic control and coordination of human resource activities in view of channelling such features or activities towards improved organizational outcomes such as product offerings and resource utilization. Hussain and Wallace (2007) affirmed that one of the major gaps addressed in building more stable and efficient organizations is the control and systematic alignment of actions and behaviour in line with organizational values and objectives – a function duly captured within the framework of human resource information systems. Hence this study as a point of departure from previous studies, investigates the relationship between human resource information systems and organizational performance of manufacturing firms in Rivers State.

Conceptual Frame Work



Research Hypotheses

The following hypothetical statements offer an operational but tentative position on the relationship between the variables of the study

HO₁: There is no significant relationship between operational systems and product offering of manufacturing firms in Rivers State

HO₂: There is no significant relationship between operational systems and resource utilization of manufacturing firms in Rivers State

HO₃: There is no significant moderating effect of organizational structure on the relationship between human resource information systems and organizational performance of manufacturing firms in Rivers State

Operational systems

The third system and dimension of human resource information systems which as noted by Lengnick-Hall and Lengnick-Hall (2007) comprises activities related to workforce planning, skills assessment and payroll control is that system or functionality that transforms the way human resource operations are performed in order to keep up with new technology and reducing the number of employees. Delivering human resource services online supports more efficient collection, storage, distribution and exchange of data (Dery, Grant & Wiben, 2009).

This is corroborated by Lengnick-Hall and Lengnick-Hall (2007), who attest that human resource information system provides a comprehensive database; which enables organizations to provide structural connectivity across units and activities and increase the speed of information transactions more particularly in recruitment processes. They observe that in so applying information system in recruitment makes the whole process easy and reducing of recruitment costs.

Hegel (2012) argued that salary administration, salary review procedure are important functions of HRM. The beginnings of human resource technology arose with the need to process large numbers of employee pay-slips, make salary forecasts and plan for workers which prior to 1960s was predominantly a manual or clerical exercise. The advent of use of technology to manage payroll signified the first major application of technology to an HR related problem. At the same time, it was recognized that such payroll systems often held a useful repository of employee information, including data about jobs, pay, cost, absence levels and personal data.

When integrated with payroll management, HRIS payroll interface can calculate salaries and provide a range of supporting functions such as preparing pay-slips and payroll reports. A HRIS may be closely linked to or even a component of an integrated financial management system (IFMIS). With a comprehensive payroll pay card, an organization can offer its employees 24/7 access to funds and on-time pay no matter what, for instance employees on vacation or sick leave and the like), elimination of time-consuming trips to the bank, and more (Hegel, 2012).

Employee turnover, which is the total of the number of employees who resign for whatever reason, plus the number of employees terminated for performance reasons, and that total divided by the number of employees at the beginning of the year. This may be measured by analysing the records that human resource information systems contain of each employee. The separation section lists reason and date of separation for each employee; monthly or when requested; the HRIS group will query the database and provide departmental heads with turnover reports by posting graphs of each report on the intranet.

It is only a handful of firms which have embraced this level of HRIS such as that the workforce analytics module in human resource information systems can be used to give crucial information about return on investment on employees. All this information allows for proper decision making in an organization. Furthermore, recent human Resource information system simulations have also been used to even predict future performance of employees (Muriithi, Gachunga & Mburugu, 2014).

As talent becomes harder to find, recruiters look within their own house for the next applicant for that important job. Recruiters want the ability to understand internal applicants in greater detail than the external candidates, including a performance history and learning details to assess their fit for open positions. The integration of performance into the HRIS, where recruiting data often is housed, would open a new door for continued focus on internal mobility. Also, through competency management - understanding the skills and abilities of the workforce continues to baffle most executives. What has been missing in all links from compensation to performance is measurement of year-over-year increases in performance and the impact that compensation has on performance.

Organizations that take an interactive view of the performance management process and ensure that compensation is just one of many outcomes, which might also include promotion, new opportunities for learning and development, and other forms of recognition, understand the importance of integrating performance and human resource information systems to measure total compensation and rewards. Organizations that still rely on a manual, semi-automated process as a once-a-year, meet-the-requirement tool will soon realize that the war for talent and staffing shortages will make it necessary to approach pay-for performance as an integrated process.

Core HR Information - to manage the performance management process in the most effective and efficient manner possible, organizations must leverage the data that exists within their HR systems. This includes basic data, such as name, department and supervisor, but organizations do not often take advantage of other data that could be instrumental to the process. This data includes other employees in the department to support the 360-degree review process, the employees' matrix reporting structure that many organizations adopt today and the comparative data available based on the job code of the employees. The ability to compare and contrast performance of employees with like jobs gives managers and executives visibility and decision-making tools that they have never had in the past.

Organizational Performance

Performance is behaviour exhibited or something done by the organization (Campbell, 1990). According to Motowidlo, Borman and Schmidt (1997), performance is the behaviour that be evaluated in terms of the extent to which it contributes to organizational effectiveness (Onukwube, Iyabga and Fajana, 2010). Hillriegel, Jackson and Slocum (1999) see performance as individual's work achievement after having exerted effort. Viswesveran and Ones (2000) regard it as the behaviour and outcomes that employees engage in or bring about that are linked with and give to organizational goals (Onukwube *et al.*, 2010). It is clear from these definitions that performance related to the extent to which an employee is able to carry out the task assigned to him or her and how the accomplished task contributes to realization of the organizational goal.

Organizational performance can be judged by many different constituencies, resulting in many different interpretations of "successful performance". Each of these perspectives of organizational performance can be argued to be unique. Further, each organization has a unique set of circumstances, making performance measurement inherently situational (Cameron & Whetton, 1983). Both of these issues are problematic for researchers, since theory building involves making and testing assertions that explain or predict a particular phenomenon (generally represented as a value of a dependent variable in a model) that holds true across a broad range of specific instances (Van de Ven, 1989; Weick, 1989). While it is possible to develop a multi-attribute model of organizational performance, building a model that addresses multiple constituencies becomes problematic, since each group may have contradictory objectives.

Most management research focuses on the determinants of performance. For instance, Kunkel (1991) proposed that new venture performance was a function of new venture strategy and industry structure. Kunkel (1991) tested the relationship between two independent variables and the dependent construct of new venture performance. The focus of Kunkel's (1991) research was on the hypothesized relationship between certain independent variables and certain dependent

variables. The independent variables are proposed as determinants of the changes in the dependent variables. The changes in the dependent measures are considered to represent "performance" caused by the variations in the independent measures. The critical point here is that performance as a concept involves measurement of the effects of organizational actions.

Organizations are consciously created to accomplish specific objectives. In realizing set goals, organizations formulate strategies from which organization structures are designed and set targets are achieved. Organizations conduct periodic assessment to ascertain the level of objectives attained. The process of determining the extent of organization's performance level is called organizational effectiveness (Onwuchekwa, 1999). The concept of organizational performance is otherwise called organizational success or organizational worth which associates with goal attainment. According to Onwuchekwa (1999), an examination into performance is to evaluate how well an organization is doing in relation to some set standards.

Georgopoulos and Tennebaum (1957) posit that organizational performance is the extent to which an organization as a social system with the resources and means at its disposal fulfils its objectives without incapacitating its means and resources and without placing undue strain upon its members. However, Quang (2002) proposes seven measurement criteria of organizational performance. These measurement criteria are employee's satisfaction, profitability, growth rate of sales or revenue, financial growth, competitiveness of the company's products and services, public image and good will and leader in Technology. The measurement criteria postulated by this scholar is quite impressive and cuts across a wide range of issues. It is not restricted to financial performance of any organization as was the case in the past. The relationship between management styles and organizational performance cannot be overemphasized. Management actions and human resource activities are some of the important factors that affect organizational performance.

A good match between the management of human resources and operating realities of an organization will substantially influence its level of performance. In each organization, human resources management influences the performance of individual employee and work groups, and thereby the whole organization's performance. Culpan and Kucukemirogula (1993) developed a model to study how managers practise the different human resources management in work places. The model of these scholars consists of six managerial dimensions for comparing management practices which include leadership/supervisory style, decision-making, communication patterns, control mechanism, interdepartmental relations and paternalistic orientation. The author further attempted to establish a link between human resources management and organizational performance by comparing United States and Japanese management systems

In general, the concept of organizational performance is based upon the idea that an organization is the voluntary association of productive assets, including human, physical, and capital resources, for the purpose of achieving a shared purpose (Alchian & Demsetz, 1972; Barney, 2001; Jensen & Meckling, 1976; Simon, 1976). Those providing the assets will only commit them to the organization so long as they are satisfied with the value they receive in exchange, relative to alternative uses of the assets. As a consequence, the essence of performance is the creation of value. So long as the value created by the use of the contributed assets is equal to or greater than the value expected by those contributing the assets, the assets will continue to be made available to the organization and the organization will continue to exist. Therefore, value creation, as defined by the resource provider, is the essential overall performance criteria for any organization. How that value is created is the essence of most empirical research in management.

The General Systems Theory

A system is defined as a regularly interacting or interdependent group of items forming a unified whole, and as a group of devices or artificial objects or an organization forming a network especially for distributing something or serving a common purpose. Meadows (2009) defined system as a set of things, people, cells, molecules, or whatever, interconnected in such a way that

they produce their own pattern of behaviour over time. These definitions are consistent with other existing definitions of a system, as they share four common elements: (1) having a group of objects, molecules, or forces; (2) the relationships and interactions between the groups within their environment; (3) how these groups make up a larger whole; and (4) the function or purpose of the elements within the group, that affects the function or purpose of the group as a whole. Organisations are regularly described in systems terminology. Such descriptions have become an important aspect of explaining the nature of organisations and how they function. As well, these descriptions provide a common language for discussing issues relating to how to manage them more effectively. Robbins and Barnwell (1998) point out that describing organisations as systems provides insights into their make-up. For example, Harvey and Brown (1992) use systems terminology to describe a dynamic model of organisational change. Systems theory is an abstract model for better understanding the nature of the interactions and processes that occur within the organization and how these impact on the organization as a whole (Bechtold 1997). The organisation is seen as being capable of making changes to these sub-systems, although it is recognised that this is not a simple process. From the presence of these interdependent parts, the organisation develops configuration and structure. The sub-systems can form into a hierarchy of systems. For example, organisations are made up of individuals at the micro level. Individuals work within the context of groups at another level. The organisation is also seen as a sub-system of a larger macro system, which may be identified as a larger organisation, industry, society or economic zone.

Research Methodology

This study adopts the cross-sectional survey design as being suitable in its investigation of the relationship between strategic systems and organizational performance. The population for this study draws from all manufacturing firms within Rivers State. This captures all sectors including food and beverages, electronics, roofing and housing accessories etc. The population for this study therefore comprises of a total 22 manufacturing firms in Rivers State. In this case, 4 managers were identified within key positions relevant to this study (general manager, production/operations manager, human resources/administrative manager, and the budget/finance manager). The design of the questionnaire for this study. The test for hypotheses in the study will be carried out using inferential techniques such as the Spearman’s rank order correlation coefficient for the test on bivariate relationships.

Results

Operating systems and organizational performance measures

| | | | Operate | Product | Resource |
|----------------|----------|-------------------------|---------|---------|----------|
| Operate | | Correlation Coefficient | 1.000 | .608** | .401** |
| | | Sig. (2-tailed) | . | .000 | .000 |
| | | N | 82 | 82 | 82 |
| Spearman's rho | Product | Correlation Coefficient | .608** | 1.000 | .332** |
| | | Sig. (2-tailed) | .000 | . | .002 |
| | | N | 82 | 82 | 82 |
| | Resource | Correlation Coefficient | .401** | .332** | 1.000 |
| | | Sig. (2-tailed) | .000 | .002 | . |
| | | N | 82 | 82 | 82 |

Source: Survey Data, 2020

HO₁: There is no significant relationship between operational systems and product offering of manufacturing firms in Rivers State

The test on this hypothesis revealed both variables to have a significant relationship where operational systems at a $\rho = 0.608$ and a $P = 0.000$ is observed to significantly contribute towards outcomes of product offering within the manufacturing firms in Rivers State. As such the hypothesis is rejected on the basis of the evidence presented.

HO₂: There is no significant relationship between operational systems and resource utilization of manufacturing firms in Rivers State

The test on this hypothesis revealed both variables to have a significant relationship where operational systems at a $\rho = 0.401$ and a $P = 0.000$ is observed to significantly contribute towards outcomes of resource utilization within the manufacturing firms in Rivers State. As such the hypotheses is rejected on the basis of the evidence presented.

The result from the analysis reveals that operational systems contribute as a significant predictor of organizational performance. This is based on the results which show that operational systems have a positive and substantial impact on outcomes of product offering and resource utilization. The evidence suggests that activities related to the functionality and operational processes or systems of the organization, impacts more evidently on products offering than resource utilization. In view of the evidence presented the findings on this set of tests are stated as follows:

- i. Operational systems significantly enhance the products offering of manufacturing firms in Rivers State
- ii. Operational systems significantly influence the resource utilization of manufacturing firms in Rivers State

Operational systems significantly influence the organizational performance of manufacturing firms in Rivers State

Operational systems are revealed in this study to impact significantly on organizational performance – thus demonstrating that without the established systems of addressing workforce planning, skills assessment and payroll control, it would be extremely difficult for organizations to make their decisions. This is because they would be forced to making baseless information due to the lack of confirmed information. Moreover, operational systems normally lay a firm foundation for the establishment of concrete decisions through its systematic tools, timely information and adequate managerial policies and regulations. Furthermore, operational systems regarding businesses act as guidelines to business owners when making critical decisions about their businesses and their workforce. As a result, managers and key decision makers are bridled from overstepping their boundaries or exceeding their business mandate. This is very crucial as it helps in keeping businesses checked and balanced thus ensuring that only proven decisions are considered while the untried ones are thwarted.

More importantly, the capacity to guide decision-making facilitates progress and improvement of the operations in a company (Hegel, 2012). In addition, most operational programs are endowed with the capacity to give real-time updates of the occurrences in company or system. By real-time, scholars (Kamau, 2013) simply refer to immediate updates of occurrences in a system. These immediate updates help managers to take necessary actions as soon as is deemed appropriate—especially during the discovery and human resource management gaps. This augment push for improvement in company operations through timely decision-making. This is important for companies in the modern-day generation where any slight lapse in decision making can lead to very huge losses (Rietsema, 2015). Still, operational systems are very elemental and imperative in improving company securities (Avebrok 2012). For example, in many instances, most operational systems can be easily programmed by the owner to conduct certain actions at certain times. In effect, managers can program the system to perform certain routine checks on skills assessment which can help in improving efficiency of a company through easy discovery of lapses or mismatches. Furthermore, the programmability of most operational systems save a lot of priceless time and resources for owners. In other words, through programmability, business managers can program the systems to automatically discover certain deficiencies and even solve them.

Consequently, the manager or system operator can use the time and resources he/she would have used in monitoring or fixing problems for other key uses. By routinely programming an operational system, the business is bound to make positive progress since time and resources can be easily channelled into rightful business paths (Avebrok 2012) As a fundamental point, a good number of operational systems used today can perform multiple tasks all at the same time. This potential to multitask increases efficiency in a company since several business operations can be conducted simultaneously. With special regards to decision making, the capacity to multitask ensures that decisions are made speedily when compared to those systems which can only handle one task at a time. Closely related to the above point, Hegel (2012) says that some operational systems allow multiple users to access the same content all at the same time without any discrepancies. This potentiality boosts accountability from the business operators since multiple people can access a particular content and verify whether they are consistent or whether they are not. As a matter of fact, most organizations tend to suffer due to poor accountability from those charged with the mandate to manage certain details.

CONCLUSION

The application of operational systems in the coordination and harnessing of human resources functions within the organization, drives the development of organizational features and operations which are imperative for enhancing the product offerings and resource utilization of manufacturing firms in Rivers State

RECOMMENDATIONS

The following recommendations are premised on the observed link between human resource information technology and organizational performance. As well as the moderating contributions of organizational structure and size to the relationship between the variables. On this basis, it is recommended that:

- i. The application of operational systems can be improved upon through the adoption of designs that focus on the integration of human resource responsibilities, roles and functions within the organization in a manner that positively impacts on the product offerings and resource utilization of the manufacturing companies in Rivers State.
- ii. The structuring of relationships, tasks and responsibilities should be formatted to offer the necessary support and reporting features which enhance the role of the human resource information system in the actualization of organizational performance of manufacturing firms in Rivers State
- iii. The size of the organization should be channelled to offer the necessary support and base for the development of more robust and growth embractive human resource information system that is required for the actualization of organizational performance of the manufacturing firms in Rivers State.

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