

BUSINESS PROCESS AS A PREDICTOR TO EMPLOYEE QUANTITY OUPUT IN MANUFACTURING FIRMS IN RIVERS STATE

Dr Joseph Akhasegbe Kadiri
Department of Management, Faculty of Business Studies
Ignatius Ajuru University of Education, Port Harcourt, Rivers State, Nigeria

ABSTRACT

The study focused on business process and employee quantity output in manufacturing firms in Rivers State of Nigeria. The study adopted the cross-sectional survey research design and used both primary and secondary data. The primary data were collected from board members, data processing managers, work study managers, supervisors and head of operations of the firms. Three hypotheses guided the study. The population of the study was 850 permanent employees drawn from 28 registered manufacturing firms in Rivers State with a sample size of 265. The study adopted a census technique. The instrument used for data collection was a structured questionnaire. The reliability of the research instrument was obtained using Test-retest method with Cronbach alpha at a 0.70 threshold. The instrument was validated by my supervisor and one expert. The data retrieved was analyzed using frequency, mean, and standard deviation at the demographic and univariate level. Spearman's Rank Order Correlation Co-efficient for the test of bivariate hypotheses at .05 level of significance. Findings revealed that business process correlate with employee quantity output. Therefore, the study concluded that business model enhances employee productivity. Thus, the researcher recommended that management should train employees on ICT in order to be more productive. More so, organizations should adopt a favourable business model with less stress in introducing and implementing needed transformation.

Keywords: Business Process, Employee Productivity, Quantity Output

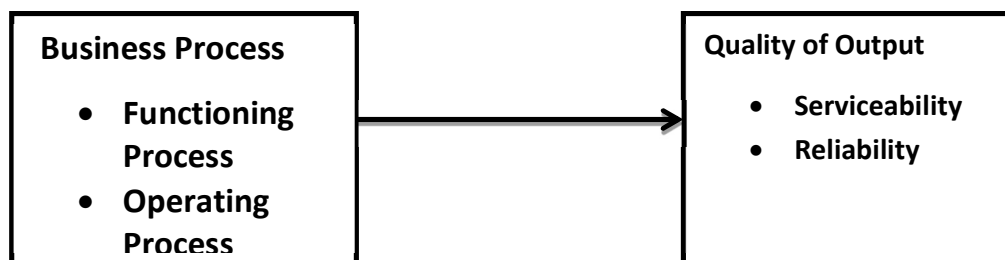
INTRODUCTION

Contemporary business process combines both perspectives. Given a certain technological frame, BPM provides an integrated set of methods, tools and techniques to continuously improve business processes in order to meet business targets (process effectiveness) in the most economical way (process efficiency). The technological frame, however, sets the boundaries (viz., a logical limit) for improvements. In order to increase performance beyond this point, new technology can afford radical process change. Such technology is referred to as disruptive technology (Bower & Christensen 1995), and information systems to date have particularly proved to be a facilitator of process innovation (Markus & Silver 2008). Business process also concerns identifying and evaluating the action possibilities originating from existent or new technologies, so as to capitalize on affordances that emerge in relation between systems, users, and the context in which information systems are used (Leonardi 2011). As changes in technology and processes created new risks, BPM also requires to evaluate alternative process designs and decide upon the right time to implement the next innovation. According to Hammer and Champy a process is a set of activities that put together produce a value to a customer (Hammer & Champy 1993). Process orientation is deeply rooted in (a) a focus on customers and (b) thinking in activities. When engineering processes, further details are considered in order to analyze processes such as the "self-contained, temporal and logical order of those activities (Becker & Kahn 2010). Processes are supposed to create value. Specifically, processes transform inputs received from suppliers into outputs of (added) value to customers; a pattern that has been applied to various units of analysis, both vertically inside an organization (analyzing internal customer-supplier-relationships) and horizontally across organizational boundaries (analyzing supply chain and network relations). Given the focus on value creation, processes have proven a suitable lens to integrate different

perspectives on business, for instance, in order to support IT-business alignment (Henderson & Venkatraman, 1993). More generally, process thinking supports the design of socio-technical systems by helping to integrate task-, technology-, people-, and structure-related decisions (Bostrom & Heinen, 1977).

According to Mathis & John (2017), productivity is a measure of the quantity and quality of work done, considering the cost and human resources utilized. The more productive organization is, the better its competitive advantage. This is because of the efficiency of the resources that have been used. McNamara (2018) further affirms that, results are usually the final and specific outputs desired from the employee. They may be in terms of financial accomplishments, impact on a community; and so, whose results are expressed in terms of cost, quality, quantity or time. McNamara also asserted that measuring productivity involves determining the length of time that an average employee needs to generate a given level of production. Ali & Opatha (2008), employee productivity can be leisurely in terms of responsiveness, morale, quality and quantity of production, customer satisfactions. Productivity is the amount of work produced in a given period of time. Productivity relates to the person's ability to produce the standard amount or number of products, services or outcomes as described in a work description. According to Mathis and John (2017), productivity is a degree of the quantity and quality of work done, considering the cost and human resources utilized. The more productive organization is, the better its competitive advantage. Employee productivity may be hard to measure, but it has a direct effect on a company's profits. There is little systematic empirical evidence about the way that firms are currently defining digital transformation such as business process in their day-to-day practices, how they are approaching digital transformation projects, and what the expected outcomes are.

Operational Framework



Hypothesis

Ho₁: There is no significant relationship between business process and quantity of output in manufacturing firms in Rivers State.

Concept of Business Process

Business process needs to contribute to superordinate, strategic goals of the organization. Related capabilities include the assessment of both processes and process management initiatives according to their fit with the overall corporate strategy. BP needs to be implemented in the organizational structure. Related capabilities include the assignment of various relevant BP-related tasks to stakeholders and to apply specific principles and rules to define the required responsibilities and controls along the entire business process lifecycle. BP needs to be supported by methods for process design, analysis, implementation, execution and monitoring. Related capabilities include selecting relevant business process methods, tools and techniques as well as adapting and combining them according to the specific requirements of the organization. Business process needs to utilize technology, particularly process-aware information systems (PAIS), as the basis for process design and implementation. Related capabilities include the ability to select, implement and successfully use relevant PAIS solutions covering for example workflow management, adaptive case management or process mining solutions. BP needs to consider the

employees' qualifications in the discipline of business process management as well as expertise with relevant business processes. Related capabilities include an assessment of the human resources impact of specific BP related initiatives as well as programs facilitating the development of process related skills throughout the organization. BP needs a common value system supportive of process improvement and innovation. Related capabilities include the ability to assess the organizational culture according to relevant values as well as the ability to derive measures to further develop these values accordingly. Research on process simulation and process analytics has provided methods to analyze processes according to criteria of strategic relevance (Zur&Shapiro 2010). Process improvement tends to focus on the so-called devil's quadrangle assessing time, cost, quality, and flexibility (Reijers & Mansar, 2005). With the recognition of BPM as a management discipline, performance evaluations of processes have increasingly been integrated into corporate management and reporting system. Value based business process management has been suggested in order to provide decision support in process redesign (Neiger, 2006; vom Brocke 2010).

The return on process transformation, for instance, is a financial measure that can be used in order to evaluate alternative process designs based on their return on investment (Vom& Simon, 2009). Following stakeholder theory (Freeman 1984), the objective is to balance multiperspective views on process, particularly considering stakeholders including customers, employees, shareholders, and society at large. The latter relates to an upcoming stream of research, coined as sustainability performance measurement that intends to include social and environmental effects of business processes in the measurement system of organizations (Seidel, 2009). The collection of process-oriented data allows organizations to capitalize on process mining as an important strategic tool for analyzing data in order to identify patterns for process improvement (Vander& Weijters, 2004).

Concept of Output

According to Ulrich (2012), productivity implies the level or degree of output achieved from a defined input. The 'input' in most organizations is measure as material/equipment costs. Labour hours, or production costs. Output may consist of sales, earnings, and market share. Some organizational have proved that employee's knowledge, skills, abilities, attitude, motivation and behaviours affects productivity. The basis for improvement on employees' productivity being from the identification of organization skills gap through skill gap analysis and proceeds with cocktails of digital transformation in order to fill skill gaps that is so identified.

Quantity of output has been a focus of theoretical and empirical economic research for decades (Laffont & Martimort, 2019). Also, is the quantity of goods or services produced in a given time period, by a firm, industry, or country, whether consumed or used for further production. Production is profitable when the firm's optimal quantity of output at the market price results in (at least) a normal amount. Fischbacher (2017) opined that is a total of number of goods produced in an experimental session. Example, upon arriving at the laboratory, participants were randomly assigned to a computer station, and participants performed a real effort task; adding up sets of randomly generated digits numbers by hand as quick as possible gears towards productivity. Quantity of output is the number of products manufactured per hour, then a suitable employee to measure the quality of output could be the number of defective products produced, i.e. the defection rate. Quantity of output is essential for improving results; and in order to perform effectively, clarity is needed. Employee knows their expected results coupled with the risk involves in performing that tasks. They are not producing the right goods and services but contribute insufficiently to the productivity of the organization. Working effectively are clear signs of a good productive. As long as employees know what their tasks are, the best way is to perform their duties, and what the priority for each task, they will feel less pressure while working and will be more productive. Having a clear picture of their role paves the way for effective working.

Empirical Review

John and Ramon (2015) conducted a study on the business model. Nature and benefits. This paper considers the nature of the business model and its strategic relevance to negotiations. We elaborate a substantive definition of the business model as decisions enforced by the authority of the firm; this definition enables the analysis of business models through the analysis of individual firm choices. We situate negotiation outcomes within the strategy literature by considering 'ambivalent value' - value produced by the interaction of partner firms that does not necessarily accrue to any of them. The extent of 'ambivalent value' is unclear, but its persistence, despite changing structural market features, promises to help sustain superior profits in the long run. We conclude with an exploration of some ways in which firms' business models may impact their negotiation outcomes.

Zelong et al, (2017) study on manufacturing flexibility, business model design and firm performance. This study examine how manufacturing flexibility affects efficiency and novelty centred business model designs and consequent firm performance. Propose and test eight hypotheses using data from one hundred and eighty-six manufacturing firms in China. The results indicate that firms flexibility promotes both efficiency and novelty centred business model designs and subsequent firm performance. Also, their relationship is strengthened by competitive intensity but weakened by demand heterogeneity.

Muhammad et al, (2014) conducted a study on Business intelligence domain and beyond. Enterprises look to Business Intelligence to transform this data into useful information, allowing more effective and efficient production. As a result, Business Intelligence theories and technologies are the focus of an increasing amount of substantial investment from Enterprises seeking to maintain a competitive advantage. This paper explores recent literature of the Business Intelligence domain and provides a few stimulating and innovate theories and practices. The authors explore several state-of-the-art studies related to the future trends and challenges of Business Intelligence as well as the surrounding technologies, such as data warehousing and cloud computing, that drive it.

Muhammad et al, (2019) conducted a study on the Impact of Digital Transformation on Business Performance. Business ecosystems are continuously evolving. In this hyper-competitive era, firms are increasingly transforming their business operations through advanced digital technologies.

Gone are the days of mere testing and debating the influence of digital transformation and industry 4.0, yet the time has come for actionable steps. Therefore, this study has identified the role of industry 4.0 technologies including big data, cyber-physical systems, internet of things and interoperability, on the performance of Small and Medium-sized Enterprises (SMEs) in Pakistan. A relevant questionnaire was developed and distributed randomly in the cities of Karachi, Lahore, Peshawar, Islamabad, Gujrat, and Sialkot. After applying multiple regression techniques through SPSS, it was found that big data, cyber-physical systems, and interoperability have a significant positive impact to improve business performance, while the insignificant effect of internet of things was revealed. Since the research in the area of digital transformation and industry 4.0 is scant, the current study has contributed novel directions, insights and a framework for future researchers. Moreover, this study will help managers to justify the allocation of resources towards technological infrastructure development in the operations of their firms. Finally, policymakers will find it helpful in order to devise suitable strategies for developing human capital and to enhance their absorptive capacity.

METHODOLOGY

The research design adopted in this study was the cross-sectional survey design. The research population is **850** employees of 28 manufacturing industries in Rivers State. The Krejcie and Morgan (Sekaran, 2017) sample size determination table was used to determine the sample size for this study which is **265**. The primary data for the study was sourced through the administration

of the structured questionnaire. Tests was carried out using the Spearman's rank order correlation coefficient at a 0.05 level of significance based on the adoption of a 95% confidence interval.

Hypothesis one.

H₀₁: There is no statistical significant relationship between business model and quantity of output

Analysis of the effect of business model on quantity of output

			Correlations	
			Business Model	Quantity Of Output
Spearman's rho	Business Model	Correlation Coefficient	1.000	.627**
		Sig. (2-tailed)	.	.000
		N	265	265
	Quantity Of Output	Correlation Coefficient	.627**	1.000
		Sig. (2-tailed)	.000	.
		N	265	265

** . Correlation is significant at the 0.01 level (2-tailed).

The table revealed that the Spearman rho Correlation coefficient is 0.627. This indicates a strong positive linear relationship between business model and quantity of output. This Correlation test is highly significant since p-value is 0.000. The p-value is less than 0.05. A positive relationship exist between business model and quantity of output, this means that as business model increases quantity of output increases.

Following this finding, the study concluded that there is a significant relationship between business model and quantity of output. Therefore null hypothesis was rejected.

CONCLUSION

The study conclude that business model enhances employee productivity in manufacturing firms in Rivers State. Following the expansion of business activities, globalization, and rapid changes in the organizations' environment, information is considered as a strategic factor to the extent that today it is seen as a powerful tool in dealing with environmental problems and challenges as well as a tool that makes proper use of opportunities.

RECOMMENDATIONS

Based on the findings in this study, the following recommendations were made:

- Failure to use proper techniques can be a challenge in digital transformation. Organizations are advised to adopt a favourable procedures. Stress can be reduced if efficient ways are used to introduce and implement the needed transformation.
- Digital transformation and its use involves the constant generation, processing, and the management of the data. Therefore, it will serves as a tool for solving the problems only when

it is used for the purpose of human development. In this case human capabilities are mixed, resulting in development and productivity.

- Proper training is recommended to ensure that the workforce understand the need for the transformation and how this transformation will help them to improve their work. Today, the needed trainings and changes and orienting them through IT are performed easily and develop the organization or the society in different fields.

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