

Business Process Reengineering and Organizational Competitiveness of Manufacturing Companies in Rivers State

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Abstract: In light of stale business processes and decline in quality of products and services of manufacturing firms, this study explored the existing level of relationship between business process reengineering and organizational competitiveness of manufacturing companies in Rivers State. The study employs the Cross sectional research design and studied two firms under food and beverages sectoral group of manufacturing firms out of the 34 listed with manufacturers association of Nigeria; Rivers/Bayelsa branch. The study employed the simple random sampling technique; also Krejcie and Morgan table of sample size determination was used to arrive at our sample size. From the field survey, we retrieved and analyzed two hundred and eighty-nine sets of questionnaire using Kendall's tau-b correlation coefficient to deduce existent association and significance of relationship between and amongst study variables respectively. The Study uncovers that the dimensions of business process reengineering namely; managerial commitment, process redesigning and information technology exhibited significant relationship with organizational competitiveness of the corporations. The study concludes that managerial commitment, internal process redesigning and the adoption of information technology for the process achieved competitiveness. This motivated our recommendation for manufacturing firms and other institutions on how essential business process reengineering is for corporate competitiveness however not in isolation of critical success factors such as top management's commitment as well as internal process redesigning and adoption of information technology

Keywords: Business Process Reengineering (BPR), Managerial commitment, Process redesign, Information Technology (IT) and Organizational Competitiveness.

1. INTRODUCTION

As a global perspective, organizations are largely seen as micro economic units whose capabilities will drive sustainable prosperity (Cetindamar & Kilitcioglu, 2013; Oral 2009). Based on this, the improvement of firm's capabilities has taken a focal point. Hammer (1990) who conceived the Business Process Reengineering (BPR) concept described it as process that entails how businesses redesign and rethink the business process so as to enable improvement and sustenance of product quality, speed, innovation, flexibility, cost, lead time and service. He opined that BPR as a process requires evaluating and rethinking business fundamentals via a cross-functional perspective and determine which of its steps really add value and devising newer procedures to achieving better results.

BPR as a strategic change tool, ensures the presence of a fit efforts, process and information technology (Habib & Shall, 2013; Ventartranment, 1991). BRP projects are triggered by industrial benchmarking tools which could also assist in the determination and scope of change to be employed (Centindamar & Kilitcioglu, 2013; Zairi & Leonard, 1994; Richman & Koontz, 1993).

Competiveness is notably very crucial in an economy's micro economic fundamentals, it helps in solidifying and ensures the sophistication of organizational operations. It similarly upholds the cluster strength of firms and ensures quality of the microeconomic business environment (Centindamar & Kilitcioglu, 2013; Porter 1990).

Oral (2009) as cited in Centindamar & Kilitcioglu (2013) advanced a fundamental and comprehensive model in light of competition, competition is seen to be influenced by a wide range of market characteristics such as functionality, delivery period, customer expectation, product attributes, prices, designs and packaging.

BPR encompasses the envisioning of new work strategies, its application and implementation of such redesigning in all its complex technology, human and organization dimension (Habib & Shah, 2013; Davenport, 1993).

In their study, they cleared the heterogeneous opinions on BPR dimension through an empirical (survey) research in 73 Slovenian Manufacturing Companies and identified seven crucial area based on the myriads of literatures on BPR literature. These seven fundamental areas for the achievement of an effective and efficient process re-engineering entails; Management commitment, team work, information technology support, education and training, employee cooperation, BPR project characteristics, and levers and results (Natasa, Andrej, & Tonchia, 2006)

Nadeem & Ahmad (2016) asserted the banks in Pakistan who are implementing the BPR have significant results, innovation, information technology use and change management have increased performance.

Performance represents a fundamental and vital issue to organization survival. Several authors have measured performance in terms of net profits, market share and cost.

Orogbu, Onyeizugbe & Onuzulike (2015) measured the empirical influence of BPR on the operation performance of firms in view of employee retention and uncovered a significant nature of relationship between them.

Competitiveness alludes to a company's ability to contend in a particular market, to expand its market share, to enter global markets by sending out, and accomplish sustainable profitability and firm growth. Consequently, the firm competitiveness depends on three key factors: competitive performance and outcome (output), firm assets and resources (input), and the administrative and managerial processes and capabilities where organizational resources are put to good use and developed. Competitive outcome can be measured through institutional growth data, customer and society, profit and export (Centindamar & Kilitcioglu, 2013).

Hallowed (1996) found out that customer satisfaction, customer loyalty had a significant inter-relationship with profit in the financial industry. Various schools have in their studies examined the inter-relationship between, customer loyalty, customer satisfaction, customer retention and organizational success (Jing-Bo, Zhe, & Xnan-Xuan, 2008; Berry, 2002; Gerport, Rams, & Schindle, 2001).

Studies have been undertaken on the influence of BPR on organization performance using contemporary measures such as market share, profitability, employee retention, the failures and successes of BPR implementation. Nadeem and Ahmad (2016), Orogbu *et al.*, (2015), Habib and Shah (2013).

The underlying study will use customer and employee retention as measures of organizational competitiveness adopting the model as developed and utilized by Centindamar & Kilitcioglu (2013).

Very little consideration has been given to using the BPR method to achieve competitiveness in the manufacturing industries.

Taking the Resource Base view of the firm according to Lynch (2009), the capabilities and resource analysis, therefore proceeds along two paralleled and interconnected routes: value added and sustainable competitive advantage.

Improving existent operations might be misleading as a start point. Rather, the best starting point in the desired strategic position (Centindamar & Kilitcioglu, 2013).

Statement of the Problem:

The manufacturing sector as a classified sector holds a strategic expectation as a prime mover of any nation. Small and medium enterprise can grow and developed into multinational organization a situation obtainable in developed economy.

The dismal performance and contribution of the sector to Gross Domestic Product (GDP) is appalling.

Different scholars have attributed it to low level innovation and technology, raw materials sourcing, poor capacity utilization rate, poor performing infrastructure which results in high cost and high cost of obtaining fund. The government policies not supportive which has led closure of many firms (Umoh & Amah, 2017; Anyanwu, 2000)

The food and beverage sector is very crucial, the present policy of producing what we eat is a boost, the competitiveness in this sector is fierce. Organizations must rethink their processes to ensure competitiveness and survival. This study seeks to examine the effect of Business Process Reengineering and Organizational Competitiveness.

Aim and Objectives of the Study:

The aim of this study is to determine the relationship between Business Process Reengineering and Organizational Competitiveness in the Food and Beverage sector of the manufacturing industry.

Furthermore, the study seeks to achieve the following specific objectives:

- i. To access the nature of relationship between managerial commitment and organizational competitiveness
- ii. To ascertain the type of relationship between process redesign and organizational competitiveness
- iii. To investigate the relationship between information technology and organizational competitiveness

Research Questions:

The following research questions will guide the study;

- i. What is the relationship between managerial commitment and organizational competitiveness?
- ii. What is the relationship between process redesign and organizational competitiveness?
- iii. What is the relationship between information technology and organizational competitiveness?

Research Hypotheses:

To provide tentative answers to the research questions above, this research work is guided by the following propositions stated in the null form:

H0₁: There is no significant relationship between managerial commitment and organizational competitiveness.

H0₂: There is no significant relationship between process redesign and organizational competitiveness.

H0₃: There is no significant relationship between information technology and organizational competitiveness.

Significance of Study:

This study will contribute to knowledge by using measure such as customer retention concept to driver competitiveness in the manufacturing industry, which has direct bearing on volume of sales, market share and employee retention as major organization resource in the business reengineering process.

Competitiveness of organizations will be enhanced by knowing which variables that can be adjusted to alter their strategic orientation.

Policy makers will also benefit from this study, by applying the reengineering process to their processes which significantly will stimulate the ease of doing business index.

2. CONCEPTUAL FRAMEWORK

Business Process Redesign

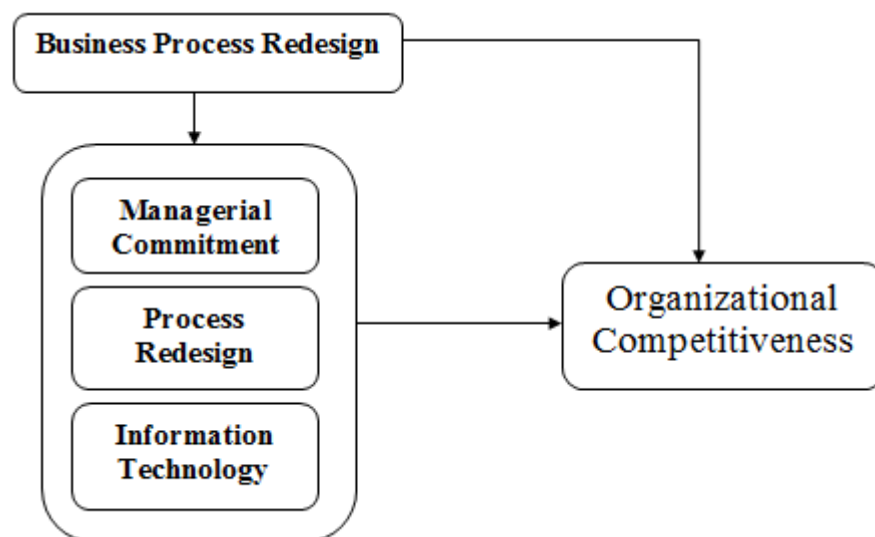


Figure 1: Dimensions and measures adapted from Orogbu, Onyeizugbe and Onuzulike (2015) and Cheng and Chiu (2008) respectively.

3. REVIEW OF LITERATURE

Concept of Business Process Reengineering:

Competition and the need to do things differently birthed the concept of Business Process Reengineering (BPR) by Hammer (1990), when he advised the American firms to reengineer their work process, obliterate don't automate. He anchored the concept on seven principles. The basic assumption of work was specialization, economics of scale and hierarchical control in the traditional model, which reduced speed and quality because of defect inherent in several persons performing bits of a task.

These principles are that firms should organize work around outcome not task, that is, a process, identify all the processes in an organization, redesign only those that add value. IT driven and open to innovative technology. Managerial role changes to that of a supporter and facilitator.

Scholars opined that the gaining acceptance of BPR as a tool of change is due to openness towards technology, adaptation feature and utilization of information technology.

Markets are rapidly dynamic and these dynamics demands reformation of production traditional approach towards innovation, adaptation of latest technology to produce high quality level of products and services and to adjust business in light of the market and global needs (Nauman & Shah, 2013; Archer & Bowler, 1995).

Managerial Commitment:

Business Process Reengineering is a strategic change process. It involves a radical redesign of work process to deliver speed, reduce cost and add value to customers. It has to be aligned with organization strategy, either cost leadership, differentiation or focus (Onuoha, 2015; Porter, 1980).

Process Re-design:

The analysis and design of workflow and process within and between organizations delineates process design (Davenport & Short, 1990).

According Zigiari (2000), business processes are designated by three components; the inputs (data such as for example, client request or resources and materials), the data and materials processing (which for the most part experience a series of stages and may essentially stops that turns out to be time and money consuming and the outcome the delivery of the expected result).

Processing represents the riskiest piece. BPR mainly intervenes in the processing part, which is reengineered in order to become less time and money consuming.

Since "doing business" is mainly running processes, it would be extremely intelligent to organize and sort out companies based on processes.

BPR centers around team building and customer orientation for effective organization.

Information Technology:

IT is the enabler of BPR project. The world is a global village, the use of IT impacts significantly on the cost of coordination, it reduces paper.

Attara (2003) asserted IT capabilities involve improving information access and coordination across organizational units. It is so powerful that it can actually create new process design options, rather than simply support it.

IT is an enabler like human resources together can bring about change in business process. IT can improve process speed and deliver value to customers (Cheng & Chiu, 2008; Hammer & Champy, 1998).

Organizational Competitiveness:

The business environment is turbulent; the need for organization to be proactive and nurture capabilities to advance is the Clarian call. Competitiveness is the ability of a firm to compete successfully in a given market. (Whitt, 2006; Porter, 1990).

Cenntindarmar & Kilitcioglu (2013) said competitiveness refers to a firm capacity to compete in a specific market, to increase its market share, to enter international markets by exporting, and to achieve sustainable growth and profitability.

Resources based view of firms emphasize that firms are a set of competences/abilities of developing and deploying capabilities (Barney, 1991; Prahalad, 1990) as cited in Centindarmar & Kilitcioglu (2013) who posited that competition can be estimated through the performance/ outcome of competition (i.e. output), assets/factors (i.e. input) and the managerial processes that turn the assets/factors into actual performance.

In their model for measuring competitiveness of firm, they advocated that competition should be measured across the value chain. The outcome indicators are growth, export, value added & profit, customer & society. While the resources indicators are human resources, financial resources, technology, innovation, design and finally the managerial process and capability that turns input to output. The indicators are leadership, sustainability of strategies and the ability to develop processes and system.

This study adopted their model, using customer retention and employee retention as indicators for competitiveness.

Benchmarking is the trigger for competition and business process reengineering, while competitive position must fit with organization strategy.

4. RESEARCH METHODOLOGY

This study adopted cross-sectional survey research design. Target population for this study consist of only two food manufacturing firms in the food and beverage industry in Port Harcourt that are registered with Manufacturing Association of Nigeria (MAN) Rivers/Bayelsa States. Chapter; Dufil Prima Food Limited and Olam Crown Flour Mill.

They have a total of 3,000 employees; the figure was culled from the repository of the Human Resources Manager. The study utilizes the Simple random sampling technique to ensure non bias and a good representation of the study population members.

Krejcie and Morgan (1970) sample size determination table was used to arrive at a sample size(S) of 341 employees of the population size(N) 3,000. The questionnaire was the instrument for data collection and Spearman's Rank order correlation coefficient statistical tool was used for data analysis for the 289 valid responses.

Measures of variables:

Business Process Reengineering was measured on a twenty (20) item scaled adapted from Orogbu, et al (2015) and Cheng & Chiu (2008).

Managerial commitment had 8 items e.g. Top Management are committed and ensure that everyone in the organization share the achieving dramatic improvement through fundamental rethinking and radical re-design of business process.

Process design had 5 items e.g. my organization has a system that is open to change in its method of operation.

Information technology has 7 items e.g. increase IT function competency.

The dimensions reported coefficient alpha values of 0.79 for managerial commitment, 0.83 for process redesign and 0.81 for information technology.

A 8 items scale used for organizational competitiveness with 4 items for employee retention and 4 items for customer retention as adapted from Orogbou et al. (2015) and Cheng & Chiu (2008) recorded Cronbach' alpha values between 0.82 to 0.94 this satisfies Nunnally and Bernstein' (1994) proposition of values between 0.81 and 0.88.

This study recorded a Cronbach' alpha value of 0.763 on the three dimensions for business process reengineering as well as 0.893 for organizational competitiveness thus proving that the items are reliable; for validity of the items, face validity and content validity was satisfied as well.

5. RESULTS AND DATA ANALYSIS

Table 1: Kendall's tau-b correlation coefficient: Test of association between the variables

Correlations			Managerial Commitment	Process Redesign	Information Technology	Competitiveness
Kendall's tau_b	Managerial Commitment	Correlation Coefficient	1.000			
		Sig. (2-tailed)	.			
		N	289			

	Process Redesign	Correlation Coefficient	.484**	1.000		
		Sig. (2-tailed)	.000	.		
		N	289	289		
	Information Technology	Correlation Coefficient	.877**	.506**	1.000	
		Sig. (2-tailed)	.000	.000	.	
		N	289	289	289	
	Organizational Competitiveness	Correlation Coefficient	.818**	.458**	.785**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	289	289	289	289
**.Correlation is significant at the 0.01 level (2-tailed).						

Source: SPSS Output Version 20

A Kendall's tau-b correlation was run to determine the relationship between managerial commitment and competitiveness amongst 289 participants. There was a strong positive correlation between managerial commitment and competitiveness, which was statistically significant ($\tau_b = .818^{**}$, $p = .000$); this being indicative that an increase in the level of managerial commitment will result to an increase in organization's competitiveness. This results to non-acceptance of the stated **H0₁** hypothesis to state that there exists significant relationship between managerial commitment to business process reengineering and competitiveness.

From the table also, process redesign reported a moderate positive relationship with competitiveness ($\tau_b = .818^{**}$, $n = 289$, $p = .000$) and statistically significant having that $.000 < 0.01$; this suggests that there exists significant relationship between process redesign and competitiveness as an increase in business process redesign will result to a moderate increase in organization's competitiveness thus we reject the stated null hypothesis (**H0₂**)

Accordingly, Kendall's tau-b correlation coefficient reported a strong positive relationship between information technology and competitiveness which was statistically significant ($\tau_b = .785^{**}$, $n = 289$, $p = .000$); this being indicative that an increase in the level of information technology adoption for the process of reengineering will result to an increase in organization's competitiveness. This also results to non-acceptance of the stated **H0₃** hypothesis to state that there exists significant relationship between information technology and organizational competitiveness.

6. DISCUSSION OF FINDINGS

The result of the tested **H0₁** suggests that there exists significant relationship between managerial commitment and organizational competitiveness. This finding agrees with the opinion of Onuoha (2015) who posited that for effectiveness in business process reengineering; commitment should be derived from the management team because without their involvement, the process will not be successful and also the resources needed to carry out the redesign comes from top management within the organization.

Accordingly the result of the tested **H0₂** implies that there exists significant relationship between process redesign and organization's competitiveness; Zigiaris' (2000) finding supports this empirical result in that his proposition aligns with it; in his opinion organization's internal processes when transformed could impact positively on competitive position of a firm.

In the same vein, the result of the **H0₃** suggests that there exists significant relationship between information technology (IT) and organizational competitiveness which agrees with Attara (2003) in his assertion that IT capabilities involve improving information access and coordination across organizational units through successful adoption of such technologies. IT is an enabler like human resources together can bring about change in business process. IT can improve process speed and deliver value to customers (Cheng & Chiu, 2008)

7. CONCLUSION

From our findings, business process reengineering was seen to possess a significant relationship with organization's competitiveness among food and beverages companies engaged in this study.

Managerial commitment to business process reengineering is very paramount to success of such strategic effort as their consent and involvement will determine how much of organizational resources would be channeled to fulfill such course with the consequent effect on enhanced competitive position for the firm.

Again process redesign (internal process redesign) also is an important contributor to organization's competitiveness as internal business processes are transformed and redesigned; automation of certain processes result in faster delivery times consequently employee performance is improved and customers are delighted with organization's products and services offerings; this also contributes remarkably to organization's competitive position in its designated industry.

Finally, from this study it is evidently clear that IT adoption aids business process reengineering as well as the automation of business internal processes and full adoption of modern technology for firm's operations will unarguably result in better performances that would enhance organizational competitiveness.

8. RECOMMENDATIONS

From the foregoing findings and conclusion reached; the following recommendations are made;

Managerial commitment is essential for the success of any business process reengineering within the business organization and as such given the untold benefits of business process reengineering; owners of business organizations, top managers as well as other organizational members should be committed and involved in such strategic intents when they arouse.

Business process reengineering should attempt at redesigning the internal organizational processes to the extent of automation so that time wastages often associated with manual processes are eliminated and customers are served as expected to derive customer satisfaction, delight and retention.

Again information technology should be adopted for an adequate reengineering process as almost the whole organizational processes are being modified by increasing advances in technology; hence for successful business process reengineering, information technology cannot be left out.

Limitations of the study:

A number of observed limitations in this study should be addressed in subsequent studies as outlined below;

The study was conducted involving only one group of manufacturing companies in Rivers/Bayelsa branch, however subsequent research should widen the scope to involve other sectoral groups. The domain of this research study was limited to manufacturing sector; thus further research about business process reengineering should involve other organizations, institutions and sectors to assess the impact of business process reengineering in achieving competitiveness for the corporation.

The study dwells on the cross-sectional design; subsequent studies in this area could adopt the longitudinal research design to arrive at a more non-biased conclusion as more time will be available. The instrument used for data collection again posed a limitation to our findings because they were structured thus not giving chance to participants to state other issues other than that captured in the questions; hence subsequent studies should utilize other instruments to reach a more valid conclusion. This study did not take cognizance of any moderating variables; hence subsequent research could investigate the moderating role of technology amongst other variables, leadership style, knowledge management and perceived organizational support on such outcomes.

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APPENDIX A

This set of questionnaire has been constructed on a 5 point Likert Scale indicating;

Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) Strongly Disagree (SD)

S/N	Managerial Commitment	Scale				
		SA	A	UD	D	SD
1	Top management set strategic plans in pursuit of service quality and customer satisfaction through various BPR projects					
2	Top management are committed and ensure that everyone in the organization share the achieving dramatic improvement through fundamental rethinking and radical re-design of business process					
3	Top management are often the sponsors and initiators for BPR projects					
4	Top management are willing to accept and implement re-engineering team's recommendations					
5	Top management actively encourage change to maintain competitiveness					
6	Top management considers BPR as a way to improve competitiveness					
7	Top management considers BPR as a way to improve services/products					
8	Key staff organizations—human resources, finance and information systems—are positive about the prospect of re-engineering and capable of carrying out related changes					

S/N	Process Redesign	Scale				
		SA	A	UD	D	SD
1	My organization has made improvement on its process					
2	My organization has a system that is open to change in its methods of operation					
3	My organization adopts process that adds value to their products					
4	Use a re-engineering team well-informed in BPR methods					
5	Regular communication of progress in re-engineering process to all staff is often made					

S/N	Information Technology	Scale				
		SA	A	UD	D	SD
1	Alignment of IT infrastructure and BPR strategy					
2	Building of effective IT infrastructure					
3	Adequate IT investment and sourcing decisions					
4	Adequate measurement of IT infrastructure effectiveness on BPR					
5	Increasing IT function competency					
6	Proper information system integration					
7	Effective use of software tools					

S/N	Organizational Competitiveness	Scale				
		SA	A	UD	D	SD
	<i>Employee Retention</i>					
1	My organization maintains a work environment that discourages employees' turnover					
2	The management of my organization is concerned about maintaining organizational knowledge					
3	My organization makes effort towards ensuring that employees are adequately trained to perform their jobs					
4	A clear understanding of BPR issues and solutions enhance employees' involvement for the process					
	<i>Customer Retention</i>					
5	BPR projects result from analysis of customer requirements of product/services					
6	BPR's purpose is to find new ways of adding value to customers					
7	Redesign process must have a direct impact on customer value and cost					
8	Firms that are able to meet customer demands in new products and services can achieve a competitive advantage over their competitors					

APPENDIX B

Nonparametric Correlations:

[DataSet1]

Correlations

			Managerial Commitment	Process Redesign	Information Technology	Competitiveness
Kendall's tau_b	Managerial Commitment	Correlation Coefficient	1.000	.484**	.877**	.818**
		Sig. (2-tailed)	.	.000	.000	.000
		N	289	289	289	289
	Process Redesign	Correlation Coefficient	.484**	1.000	.506**	.458**
		Sig. (2-tailed)	.000	.	.000	.000
		N	289	289	289	289
	Information Technology	Correlation Coefficient	.877**	.506**	1.000	.785**
		Sig. (2-tailed)	.000	.000	.	.000
		N	289	289	289	289
	Organizational Competitiveness	Correlation Coefficient	.818**	.458**	.785**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	289	289	289	289

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

Reliability

[DataSet1]

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	288	99.7
	Excluded ^a	1	.3
	Total	289	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.763	3

Reliability

[DataSet1]

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	289	100.0
	Excluded ^a	0	.0
	Total	289	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.893	8