



## Business Process Re-Engineering and Federal Tertiary Institutions' Competitive Advantage: Evidence from Federal Polytechnic, Ilaro

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### Abstract

The most recent advancement in modern business is known as business process re-engineering (BPR). It is a process of moving away from old means of doing things and toward one that is more innovative, which typically leads to improved organizational performance. The fact that educational institutions, particularly those in the public sector, have not yet completely embraced this new phenomenon served as the impetus for this study. Data were gathered through the use of a standardized questionnaire using a survey research strategy for the study. The research population consists of 455 academic staff members from Federal Polytechnic Ilaro in Ogun State. The sample size for the study was 213 respondents. Multiple Regression Analysis was used to test the hypotheses while Ordinary Least Square (OLS) was used to examine the data in SPSS. The study's conclusions showed that technological innovation significantly influences how simple it is to learn at federal tertiary institutions. The study's conclusions also showed that management commitment significantly affects competitive advantage. Based on the findings, the study recommended that the government of Nigeria should expediently implement Business Process Re-engineering across tertiary institutions in the country.

**Keywords:** BPR, Management, Organization, Technological innovation, Tertiary institution.

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### Introduction

According to Hammer and Champy (1993), BPR is the process of abandoning the current business model in favor of a new, more potent strategy for producing goods and services. It is a cutting-edge administrative tactic that seeks to fast and drastically change businesses by non-traditionally recreating organizational structures, beliefs, and fundamental presumptions (Amer & Kandil, 2010). Institutions can no longer rely on outdated modes of operation due to intense rivalry and the imitation of capabilities by other organizations; as a result, processes need to be

reorganized. Business process re-engineering (BPR) will surely help to replace outdated structures and find novel solutions, which will finally result in a big advantage for the firm. Stereotypes in operations will be eliminated (Husameddin & Mohammad, 2018).

Tertiary educational institutions are now changing their operating models in industrialised nations in order to gain a competitive advantage over similar institutions in other nations. It is important to stress that educational institutions in industrialised countries are evolving into "Learning Organizations" from being purely educational institutions. Due to the

prejudicial perception that Nigerian graduates are subpar products who must enrol in a program to upgrade their qualifications in order to obtain such "white collar" jobs, Nigerian graduates who migrate to developed countries in search of a "white collar job" are frequently denied the opportunity. This best exemplifies the scenario in which federal tertiary schools lack a competitive edge.

Given the foregoing, it is imperative and logical for Nigeria's educational institutions, with a concentration on the federal tertiary institutions, to innovate their business methods in order to successfully compete with their counterparts in the private sector and other nations in general.

In order to better understand how BPR affects federal tertiary institutions' competitive advantage, this study will look at the associated consequences of BPR.

The main goal of this study is to ascertain the impact of business process re-engineering (BPR) on the competitive advantage of federal higher institutions of learning as a concomitant to the recognised requirement to research the issue of interest.

However, the study paid particular attention to the following: ascertaining how reengineered technology affects the simplicity of learning and examining the impact of managerial commitment on the institution's capacity for innovation.

The study concentrated on how Federal Polytechnic, Ilaro's competitive edge over rival institutions in other states throughout the federation was influenced by technology and managerial commitment

### **Methodology**

The following are the hypotheses which the study seeks to ascertain their validation or otherwise.

*H<sub>01</sub>: Reengineered technology has no significant influence on the simplicity of learning at federal tertiary institutions.*

*H<sub>02</sub>: Management commitment has no significant influence on the institution's capacity for innovation.*

### **Research Design**

The current study uses a survey methodology since structured questionnaires will be used to collect data.

### **Population of the Study**

The study's population consists of the academic employees from the five schools (faculty) that make up the configuration of Federal Polytechnic in Ilaro, Ogun State.

For each school, the breakdown of departments is as follows:

Table 1: Breakdown of departments

S/N	School	Departments	Number of Academic Staff
1.	<b>Engineering</b>	a) Mechanical Engineering	22
		b) Electrical Engineering	26
		c) Computer Engineering	12
		d) Civil Engineering	18
		e) Agric & Biology Engineering	13
		f) Mechatronics	5
		<b>TOTAL</b>	

<b>2. Environmental</b>	a) Architecture	11
	b) Art & Desing	10
	c) Building Tech	8
	d) Estate Management	10
	e) Quantity Survey	8
	f) Surveying and Geo-Informatics	9
	g) URP	14
	h) Transportation	5
	<b>TOTAL</b>	<b>75</b>
<b>3. Pure and Applied Science</b>	a) SLT	47
	b) Food Tech	18
	c) Hospitality	10
	d) Leisure & Tourism	7
	e) Agric Tech	12
	f) Maths and Stat	18
	g) Computer Science	17
	h) Nutrition and Dietetics	8
	<b>TOTAL</b>	<b>137</b>
<b>4. Management</b>	a) Accountancy	19
	b) Banking and Finance	10
	c) Bus. Admin. & Mgt	14
	d) Marketing	9
	e) Public Admin	10
	f) Insurance	5
	g) Taxation	7
	h) General Studies	37
	<b>TOTAL</b>	<b>111</b>
<b>5. Communication and Information Technology</b>	a) OTM	12
	b) Library Science	5
	c) Mass Comm	14
	d) Music Technology	5
	<b>TOTAL</b>	<b>36</b>
<b>GRAND TOTAL</b>		<b>455</b>

*Source: Bursary Department, Federal Polytechnic, Ilaro (2022)*

### Sample Size and Sampling Technique

Using Taro Yamane sample size determination formula, a sample size of 213 respondents was

selected from the population. Bowley's allocation formula was utilized to allocate the questionnaire appropriately to the studied departments:

$$nh = \frac{nNh}{N}$$

**Where:**

nh= Allocation formula

**Engineering** =  $96 \times 213 / 455 = 45$

**Pure and Applied Science** =  $137 \times 213 / 455 = 64$

**Information Technology** =  $36 \times 213 / 455 = 17$

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213

Data for this inquiry were gathered using a questionnaire as the research method. The validity test for the questionnaire was carried out using both face and content validity with the aid of instrument validation professionals and management experts. A

### Data Presentation

**Table 2: Reliability Statistics**

Cronbach's Alpha	N of Items
.751	207

Source: SPSS output, November 2022

The reliability test results in Table 1 are 0.751, which shows that the respondents were able to provide all the information required to complete the research project.

**Table 3: Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	90.319	70.879		1.552	.134
	Technological Innovation	3.447	.135	.971	20.887	.000

a. Dependent Variable: Ease of Learning

Source: SPSS output, November 2022

Table 2 illustrates the components' importance and the connection between the predictors and the dependent

Nh = No. of items in each stratum of the population

n= Sample size

N = Population size

**Environmental** =  $75 \times 213 / 455 = 35$

**Management Studies** =  $111 \times 213 / 455 = 52$

reliability test for internal consistency was performed using the Cronbach (1951) Alpha test.

The gathered data was evaluated using the Ordinary Least Squares method using SPSS version 20 software. The hypotheses for this study are examined using regression analysis at a 5% level of significance.

variable. Reengineered technology and ease of learning appear to be positively correlated, as shown

by the coefficient result of 3.447. At the 5% level of significance, re-engineered technology is statistically

significant, as indicated by the significance value of 0.000.

**Table 4: Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficient	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	100.183	120.083		.204	.740
	Management Commitment	78.531	11.822	.774	5.129	.000

a. Dependent Variable: Competitive advantage

Source: SPSS output, November 2022

In Table 3, the variable's significance and the connection between the predictor and the dependent variable are both displayed. An association between management commitment and competitive advantage is shown to exist, with a coefficient of 78.531. A 5% level of statistical significance is shown by the significance value of 0.000 for Management Commitment.

### Conclusion and Recommendations

The data analysis revealed that the sub-variables of the independent variable, management commitment, and re-engineered technology, showed a positive relationship with the sub-variables of the dependent variable, competitive advantage, and ease of learning with a p-value of .000 at a 5% significance level. According to the study's findings, management commitment and newly built technology, respectively, have a considerable favorable influence on learning accessibility and competitive advantage.

In conclusion, Business Process Re-engineering has a significant impact on Federal Tertiary Institutions' ability to compete. The results of this study are in agreement with those of Taiwo (2017); Husameddin, Onwuchekwa, and Ikon (2018).

Based on the findings, the following recommendations were made:

In order to obtain better outcomes, the government should actively participate in the effective implementation of business process re-engineering.

All other parties involved in Federal Tertiary Institutions shall contribute to the effective use of BPR inside their respective institutions.

In particular, the administration of Federal Polytechnic, Ilaro should install projectors in classrooms to speed up the learning process, as is the custom in other institutions the researcher has visited.

Furthermore, by taking part in training sessions organised by the administration of the institution, all teachers and students should support the management's efforts to improve the quality of education at Federal Polytechnic, Ilaro. Even when training sessions are offered for their benefit, some professors and students have been seen to find a way to miss them.

### Suggestion for further studies

For the independent and dependent variables, the study used just two variables. In order to attain larger generalizability of this type of study to other sectors of the country, future research should involve looking at additional variables that are pertinent to the notion of business process re-engineering.

## Contributions to Knowledge

This study contributed to knowledge by providing verifiable proof of the benefits that may be acquired by improving business procedure through the process of business process engineering. More significantly, this study has shown that in order for the Nigerian education industry to remain modern and competitive, its procedures need to be re-engineered.

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