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# Contribution of Business Process Reengineering on Performance of Manufacturing Firms: A Case Study of Bralirwa Ltd.

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#### Abstract:

In the era of rapid changes in the markets, shorter product life cycles and consumers' high expectations and demands require fundamental changes in a firm's structure, culture and other management processes. Business Process Reengineering has been found to offer mechanisms for companies and organizations to adjust in order to remain competitive and profitable. However, manufacturing industries among other industries have not fully adopted Business Process Reengineering as a strategy for improving performance. This study investigated the contribution of business process reengineering on organization performance in Rwanda. Specific objectives for the study included; establishing the contribution of organization structure reengineering on organization performance in Rwanda, to determine the contribution of job redesigning on organization performance in Rwanda, to examine the contribution of organization culture reengineering on organization performance in Rwanda. This study adopted a survey descriptive research design. Both primary and secondary data were used in the study. A total of 114 employees of Bralirwa formed the target population of this study. A sample size of 89 respondents was determined using Slovin's formula. Stratified random sampling procedure selected the sample that represented the entire population. These constituted of managers and non-managers and supportive staffs. This study used questionnaire as the data collection tool which consisted of both open and closed questions. Descriptive analysis was computed to generate frequencies and percentage of various variables. Inferential statistics was done through Pearson correlation analysis to determine if there exists any relationship between the variables. Further linear regression analysis was carried out to determine the percentage change in organizational performance that could be attributed to business process reengineering. Statistical package for social science was used as the appropriate tool for data analysis. Results were presented in tables, pie charts and graphs. The findings of this study suggested a positive significant relationship between organization performance and organizational Structure re-engineering (r = .625, p < 0.05). The findings further indicated that a unit increase in the scores of organisation structure reengineering, would lead to a 0.522 increase in the scores of organizations performance, a unit increase in the scores of job redesigning would lead to a 0.445 increase in the score of organization performance while a unit increase in the scores of organisation culture reengineering would lead to a 0.601 increase in the score of organization performance. The study concluded that BPR has an effect on organization performance. Additionally, 71.8% of the variation in organization performance could be explained by all the three independent variables. Based on the findings the study concludes that business process reengineering measured in organizational structural re-engineering, job re-designing, and organizational culture have an immense contribution on organizational performance. Drawing from the conclusion the current study recommends that Organizations should embrace BPR, through team building, reviewing goals and objectives to enhance organizational performance

**Keywords:** Organisation structure reengineering, job redesigning, organisation culture reengineering organisation performance

#### 1. Background

Globally business is faced with different market dynamics making it necessary for it to reinvent itself to be strategically competitive (Okumu, 2013). One of thechannels available for this process is the Business Process Re-engineering (BPR). The business environment for the firms in the manufacturing industry is continually changing in the context of the organizational competitiveness, organizational performance, and operational performance (Onchana, 2012). The organizations need to continually improve on their operational processes due to growth of international trade, the customer assertiveness in demand for high quality services, rapid technological development, and shortened product life cycles (Ringim, *et al.*, 2012).

In the context of the customer assertiveness for higher quality products, the modern-day customer has an integral role in the consumer-producer relationship due to the introduction of variety of choices in the market (Odede, 2013). This enables the customer to dictate for tailor made products within a certain ability to pay (Kangogo, 2014). The international trade and globalization is continually exerting pressure on the local firms' due to the introduction of the high quality but cheaper products.

The factors that compel the businesses to undertake BPR can be grouped into the external factors and internal factors (Nangami, 2014). The internal factors include factors that exert pressure from within the organizations including outdated technology, need to automate processes, need for efficiency improvement; need tomanage cost, and a re-examination of the strategic aspirations (Dogan, 2013). On the other hand, the external factors exert pressure from the outside such as customers 'demands, increased competition, dynamic market conditions, and changing regulatory environment (Kyengo, 2014).

BPR aims to achieve improvements in the contemporary measure of performance that is cost, quality, service, and speed (Nangami, 2014). The aim of BPR is therefore designing of the work to better support organizational objectives while reducing on the cost implications (Kawa, 2013). To do this, BPR involves a complete overhaul of the organizational structure, job characteristics, performance measures and the reward system. The success metrics of BPR in the context of the operational performance include improved turnaround timeframes in service delivery, improvement in the quality of products and or service, cost reduction, technological improvement, competitiveness, revenue increase and improved customer service levels (Maina, 2014).

Therefore, the overall aim of BPR is delivering more value to the customer through rethinking of existing processes, use technology to improve data dissemination and decision making, redesigning the functional organization into cross-functional teams (Kangogo, 2014). The areas of improvement that BPR helps achieve include improvement of the turnaround timeframe on service delivery, reducing defect rates, increasing accuracy of process instructions, eliminating repetitive tasks, speeding up product development and improving human resource practices (Namatsi, 2014).

Today's business dynamics are calling for process reengineering, a pioneering attempt to change the way work is performed by simultaneously addressing all the aspects of work that impact performance, including the process activities, the job design and the reward system, the organization structure and the roles of process performers and managers, the management system and the underlying organization culture which holds the beliefs and values that influence everyone's behavior and expectations (Debela, *et.*, *al.* 2011,).Davenport and Short (2010) defined business process as a set of logically related tasks performed to achieve a defined business outcome.

Bralirwa limited is a public company limited by shares since 9th June 2010 incorporated in the Republic of Rwanda under the law no7/2009 of 27th April 2009 relating to companies and registered by the Registrar General Office under no 100004348.Bralirwa Limited was the first company listed on the Rwanda Stock Exchange (RSE) as from 31st January 2011. Over the past three years, the company have invested heavily on machinery, Information Technology in a bid modernize its operations, improve efficiency and better serve the customers. By launching the Primus GumaGuma Supers star and several brands re-launching the company hoped to enhance its brand performance. However, performance has been on the decline as shown in the table below, (Tumwebase 2016).

	Y	Year	
(In '000hl and RWF millions)	2015	2014	
Sales Volume	1609	1882	-14.5%
Gross Revenue	131,765	120300	9.5%
Revenue	84088	79238	6.1%
Results from Operating Activities	13035	16239	-23.0%
Net finance cost	(4783)	(682)	600.9%
Profit Before Income Tax	8252	16239	-49.2%
Income tax expense	(1146)	(4844)	-76%
Profit and total comprehensive income for the year	7106	11394	-37.6%

Table 1: Performance for the year 2014/2015 Source: Bralirwa ltd report 2016

The earnings before interest and taxation (EBIT) declined by 49.2% to Rwf13.05 billion, while profit and total comprehensive income (Profit after Tax) for the year declined by 37.6%, beer export volume declined by 29%. Additionally, the prices of soft drinks had to be increased to cover input costs, effects of currency depreciation and overall business costs. The declining performance registered in 2015 was attributed to currency depreciation, increasing operation costs, competition, low consumer income and Challenging conditions in export markets which have impacted consumption (Tumwebase, 2016). These factors necessitated the adoption of BPR as a strategic tool to tackle these challenges.

# 1.2. Statement of the Problem

Essentially, BPR amounts to making radical changes to one or more business processes affecting the whole organization performance. Bralirwa Company limited adopted BPR to improve its performance following a decline in production levels 2015 with the aim of improving productivity. However, despite having invested heavily in a bid to modernize its operation and improve performance productivity remained low (BCL, 2015/2016 Annual Report).

Although a number of studies have been conducted on the contribution of business process reengineering on organization performance, (Sidikat and Ayanda 2008, Goksoy, et, al., 2012 and Aregbeyen2011), there is currently little evidence of the extent to

which manufacturing companies in Rwanda achieve improved performance through business process reengineering. This study there for was meant to address the information gap arising from the foregoing and also determine with the influence of BPR on the organizational performance.

# 1.3. Objective of the Study

## 1.3.1. General Objective

The general objective of the research was to determine the contribution of business process reengineering on organisation performance in Rwanda.

#### 1.3.2. Specific Objectives

The study sought to address the following specific objectives:

- 1. To establish the contribution of organisation structure reengineering on organisation performance in Bralirwa ltd.
- 2. To determine the contribution of job redesigning on organisation performance in Bralirwa ltd.
- 3. To examine the contribution of organisation culture reengineering on organisation performance in Bralirwa ltd.

# 1.4. Research Questions

The following research questions guided the study

- 1. What is the contribution of organisation structure reengineering on organisation performance in Bralirwa ltd?
- 2. What is the contribution of job redesigning on organisation performance in Bralirwa ltd?
- 3. What is the contribution of organisation culture reengineering on organisation performance in Bralirwa ltd?

# 2. Conceptual Framework

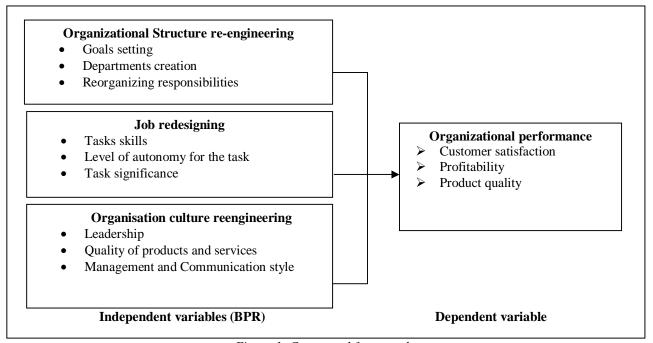


Figure 1: Conceptual framework

# 3. Target population

Target population has been defined by Mugenda and Mugenda (2003) as the specific population which the researcher may want to generalize in the study. It is a set of people households that are being investigated (Ngechu, 2004). The target population of this study was 114 employees of Bralirwa. According to the HR data, Bralirwa have 114 employees who directly or indirectly relates to Process Reengineering.

# 3.1. Sampling Procedure

Multistage sampling technique was applied to obtain the required sample of 89 respondents. Initially the employees were stratified in to departments. Further, a proportionate sampling was applied as shown in table 2 to obtain the subsamples from each department. From the determination of the proportionate sampling 6 managers were to present this level, 39to present the marketing team, 31 to present operations, 12 to present finance, 23 to present customer care while 3 presented human resource.

Finally, a simple random sampling technique was applied to obtain the respondents required from each stratum, from the determination of random sampling 5 represented the managers, 31 represented marketing team, 24 represented operations, 9 represented finance, 18 represented customer cares while 2 represented human resource.

Departments for the population	Strata	Subsamples
Managers	6	6/114*89= 5
Marketing team	39	39/114*89=31
Operations	31	31/114*89=24
Finance	12	12/114*89=9
Customer care	23	23/114*89=18
Human Resource	3	3/114*89=2
Total	114	89

Table 2: Proportionate Sampling

# 4. Research Findings and Discussion

# 4.1. Effect of Organizational Structure re-engineering on Performance

The study further sought to determine the effect of organizational structure reengineering on company performance.

Table 3 indicates that 65% of the respondents strongly agreed with the statement that organizational Structure re-engineering influences organizational performance while 35% agreed with the statement. Majority (58%) of the respondents agreed with the statement that organizational Structure re-engineering is one of the BPR dimensions undertaken by their company, 2% strongly agreed while 40% disagreed with the statement. The findings also indicated that 55% of the respondents agreed with the statement that their company reviews set goal for better performance, 30% were strongly agreed while 15% disagreed with the statement. Majority (80%) strongly agreed with the statement that their organization is divided into various formal departments while 20% just agreed with the statement. Also, the findings indicated that 69% of the respondents strongly agreed with the statement that amount of control managers and supervisors has over staff is defined, 30% agreed while 1% disagreed with the statement.

Statements	Strongly agree	Agree	Disagree
Organizational Structure re-engineering influences organizational	56	30	
performance	(65%)	(35%)	
Organizational Structure re-engineering is one of the BPR dimensions	2	50	34
undertaken by your industry	(2%)	(58%)	(40%)
Your industry reviews set goal for better performance	26	47	13
	(30%)	(55%)	(15%)
Your organization is divided into various formal departments	69	17	
	(80%)	(20%)	
Amount of control managers and supervisors has over staff is defined	59	26	1
	(69%)	(30%)	(1%)

Table 3: Effect of Organizational Structure re-engineering on performance

These findings coincide with the findings of Irene (2016), which sought to determine the impacts of business process re-engineering and operational performance at Nairobi City County where the researcher found out that business structure reengineering through departmentalization and goal setting had positive impact on operational performance with a significant value.

# 4.2. Discussion of Results

The study found a positive relationship with a study by Sidikat and Ayanda (2008) on bank structure reengineering and performance. This as an indicator that reengineering structural processes remains effective tools for organizations striving to operate as effectively and efficiently as possible and organizations are required to reengineer their business processes in order to achieve breakthrough performance and long-term strategy for organizational growth and performance

		Organization performance	Organizational Structure re-engineering		
Organization performance	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	86			
Organizational Structure re-engineering	Pearson Correlation	.625***	1		
	Sig. (2-tailed)	.001			
	N	86	86		
**. Correlation is significant at the 0.05 level (2-tailed).					

Table 4: Correlation between Organizational Structure re-engineering and performance

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Tables 4 indicate that there is a positive significant relationship between organization performance and organizational Structure reengineering (r = .625, p < 0.05). This implies that re-engineering organization structure would result in improved performance.

4.4 Effect of Job reengineering on performance

The study further sought to determine the effect of job reengineering on company performance.

Table 5 indicates that most (56%) of the respondents agreed with the statement that their company view job reengineering as a strategy that can boost company's performance, 27% strongly agreed while 17% disagreed with the statement. Majority (80%) of the respondents strongly agreed with the statement that job reengineering in their company is based on the skills required for the task, 20% just agreed with the statement. The study findings also showed that 83% of the respondents strongly agreed with the statement that through job reengineering their company have managed to place the right person in the right job 17% agreed with the statement. Majority (57%) of the respondents disagreed with the statement that regular job redesign makes jobs interesting and engaging and produce maximum employee productivity 30% agreed while 13% strongly agreed. Most (45%) of the respondents agreed with the statement that significance of the job to the customers and organization itself is considered when redesigning jobs in their company, 31% disagreed while 24% strongly agreed with the statement.

Statement	Strongly	Agree	Disagree
	Agree		
Your organization view job reengineering as a strategy that can boost organizational	23	48	15
performance	(27%)	(56%)	(17%)
Job reengineering in your organization is based on the skills required for the task	69	27	
	(80%)	(20%)	
Through job redesigning the organization have managed to place the right person in the right	71	15	
job.	(83%)	(17%)	
Regular redesign of jobs makes them interesting and engaging and produce maximum from	11	26	49
employees	(13%)	(30%)	(57%)
The significance of the job to the customers and organization itself is considered when	21	38	27
redesigning jobs in your organization	(24%)	(45%)	(31%)

Table 5: Effect of Job reengineering on performance

# 4.3. Discussion of Results

The findings are positively coincided with the study done by Mathias, (2013) on employee perception on the effects of business process reengineering on the performance of mara-ison technologies. The study established that employees perceived that use of business process reengineering improved employees' efficiency and productivity affected by the fact that business process reengineering links employees with the right jobs and required skills. The research findings also positively concur with the findings of (Nema, 2008) that sought to determine the effect of business process reengineering on company's performance among Korean companies and concluded that job redesigning had a high impact on performance of Korean manufacturing companies.

		Organization performance	Job reengineering	
Organization performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	86		
Job reengineering	Pearson Correlation	.637**	1	
	Sig. (2-tailed)	.001		
	N	86	86	
**. Correlation is significant at the 0.05 level (2-tailed).				

Table 6: Correlation between job reengineering and organization performance

Tables 6 indicate that there exist organization performance and job reengineering correlate positively and significantly (r = .637, p<0.05). This implies that the more job reengineering is implemented in an organization the better the performance of that organization

# 4.4. Effect of Organisation Culture Reengineering on Performance

The study further sought to determine the effect of organisation culture reengineering on company performance.

Table 7 indicates that most (62%) of the respondents agreed with the statement that BPR in their company result from analysis of needs of customers while 38% agreed with the statement. Also, most (56%) of the respondents strongly agreed with the statement that BPR's central purpose is to find new ways of adding value for their customers, 44% just agreed with the statement. The study findings also showed that 48% of the respondents agreed with the statement that employee work culture has been improved as a result of BPR, 19% strongly agreed, 17% strongly disagreed while 16% disagreed with the statement. Most (41%) of the respondents agreed with the statement that there is an efficient communication channel to get feedback from employees about the reform 26% strongly agreed,

23% disagreed while 10% strongly disagreed. Most (59%) of the respondents strongly agreed with the statement that employees are comfortable with the leadership and management style y, 35% agreed while 6% disagreed with the statement. The findings also show that most (56%) agreed with the statement that organization culture re-engineering have helped improve relationship between employees, 27% strongly agreed while 17% disagreed with the statement. Finally, majority (66%) of the study respondents strongly agree with the statement that their organization is known for quality services and product while 34% agreed with the statement.

Statement	SA	A	D	SD
The BPR in your company result from analysis of needs of	33	53		
customers	(38%)	(62%)		
The BPR's central purpose is to find new ways of adding value	48	38		
for your customers	(56%)	(44%)		
The employee work culture has been improved as a result of	16	41	14	15
BPR	(19%)	(48%)	(16%)	(17%)
There is an efficient communication channel to get feedback	22	35	20	9
from employees about the reform	(26%)	(41%)	(23%)	(10%)
Employees are comfortable with the leadership and	51	30	5	
management style	(59%)	(35%)	(6%)	
Organization culture re-engineering have helped improve	23	48	15(17%)	
relationship between employees	(27%)	(56%)		
Your organization is known for quality services and product	57	29		
	(66%)	(34%)		
SA-strongly Agree, A - agree, D -Disag	gree, SD- stroi	ngly disagree		

Table 7: Effect of Organisation culture reengineering on performance

# 4.5. Discussion of Results

The findings are in agreement with the findings of a study conducted by Mutua, (2010) which sought to establish the influence of business process re-engineering on customer satisfaction in Kenya Power and Lighting Company Limited where improved communication, perceived product quality and customer needs analysis through individualized attention quick complaint handling improve the performance of Kenya Power and Lighting Company,

		Organization performance	Organisation culture reengineering		
Organization performance	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	86			
Organisation culture reengineering	Pearson Correlation	.701**	1		
	Sig. (2-tailed)	.001			
	N	86	86		
**. Correlation is significant at the 0.05 level (2-tailed).					

Table 8: Correlation between organisation culture reengineering and performance

Tables 8 indicate that there is a significant relationship between organization performance and organisation culture reengineering (r = .701, p < 0.05). This implies that reengineering organisation culturewould result to improved performance of the organization.

# 4.6. Contribution of BPR on Organizational Performance

The study further sought to determine the respondent's perceived effect of BPR on their company's performance

Table 9 indicates that 74% of the respondents felt that organisation structure reengineering contribute positively to organisation performance as opposed to 26%. Majority (78%) of the respondents were of the opinion that job redesigning contributes positively to organisation performancewhile 22% felt that job redesigning had no contribution to organisation performance. The table also shows that 91% of the study participants indicated that organisation culture reengineering contribute positively to organisation performance.

Statement	Yes %	No%
Organisation structure reengineering contribute positively to organisation performance	64	22
	(74%)	(26%)
Job redesigning contribute positively to organisation performance	67	19
	(78%)	(22%)
Organisation culture reengineering contribute positively to organisation performance	78	8
	(91%)	(9%)

Table 9: Effect of BPR on Organizational performance

## 4.7. Regression Analysis

Beside correlation analysis that showed relationship between the variables, multiple regression analysis was conducted. Regression analysis sought to establish the percentage variation on organization performance that would be attributed to the three independent variables separately as well as when combined. The findings of the analysis were as shown in the

Model		<b>Unstandardized Coefficients</b>		Standardized Coefficients	T	Sig.	
		В	Std. Error	Beta			
1	(Constant)	.431	.321		3.719	.001	
	Organisation structure reengineering	.522	.201	.187	2.317	.002	
	Job redesigning	.445	.380	.371	4.934	.012	
	Organisation culture reengineering	.601	.131	.217	1.192	.000	
а	a. Dependent Variable: Organization Performance						

Table 10: Coefficients<sup>a</sup>

The study also sought to determine the relationship between employee engagement and organization performance. Regression analysis was conducted to assist estimate the relationship. The study adopted the following regression model to depict the expected relationship between employee engagement and organization performance

$$Y = a + \beta_1 X 1 + \beta_2 X 2 + \beta_3 X 3 + e$$

Fitting the study variables to the model the following regression equation was obtained;

Y = 0.431 + 0.522 (organisation structure reengineering) + 0.445 (job redesigning) + 0.601 (organisation culture reengineering).

Table 10 shows that the regression equation generated established that taking all factors (Organisation structure reengineering, Job redesigning, Organisation culture reengineering) to a constant zero, organization performance will be 0.431. The findings presented also show that taking all other independent variables at a constant zero, a unit increase in the scores of organisation structure reengineering, would lead to a 0.522 increase in the scores of organization performance, a unit increase in the scores of job redesigning will lead to a 0.445 increase in the score of organization performance, a unit increase in the scores of organisation culture reengineering will lead to a 0.601 increase in the score of organization performance.

Overall, organisation culture reengineering had the highest influence on organization performance, followed by organisation structure reengineering while organisation culture reengineering had the least effect to organization performance. All the variables were significant (p<0.05). A low p-value (<0.05) indicates that changes in the predictor (organisation structure reengineering, Job redesigning, organisation culture reengineering) are associated with changes in the dependent variable (organization performance).

#### 5. Conclusions

# 5.1. Effects of Organizational Structure Reengineering on Organizational Performance

The study concluded that reviewing set goals as well as establishing formal departments positively affects organizational performance. The research findings concluded that reorganizing responsibilities to enhance team work contributes positively to organizational performance.

The study concluded that regulating the amount of control of supervisors and managers enables enhances organizational performance by giving employees freedom to make decisions that improve the performance of the organization.

#### 5.2. Effect of Job Redesigning on Organizational Performance

The study has established that job reengineering in the organization help place the right person in the right job. It is therefore concluded that BPR is an important technique that an organization could adopt in order to enhance organization performance through hiring and placing the right people and matching them with the required skills.

Further the study concluded that job rotation does not always make the job interesting but and cannot be considered as a motivation towards improving organizational performance.

The study concluded that taking into consideration the significance of the job to the customers contributes positively to organization performance.

# 5.3. Effect of Organization Culture Reengineeringon Organizational Performance

The study concluded that organization culture reengineering resulted to the highest influence on organizational performance; further the results concluded that organisation culture reengineering helps improve employee work culture that in turn improves organization performance.

The study also concluded that reengineering organization culture through team building and skills development contributes greatly to organizational performance.

#### 6. Recommendations

Restructuring is aimed at increasing efficiency, enhancing competitive advantage, achieving synergy and improving firm value.

# 6.1. Effect of Organization Structure Reengineering

From the conclusions, the study recommends that Bralirwa Company limited and other manufacturing firms should reorganize responsibilities and continue to review set goals and objectives to improve their performance.

The study recommends that organizations should regulate the amount of control that managers and supervisors have to allow employees engage in important decision making to improve organizational performance.

# 6.2. Effect of Job Redesigning on Organizational Performance

The study recommends that organizations should place the right people on the right jobs by recruiting employees with the required skills for the jobs to improve organizational performance.

Further the study recommends that that job redesigning should be undertaken considering customer and task significance.

The study recommends that managers should take into consideration the significance of the job to the customers contributes positively to organization performance.

# 6.3. Effects of Organizational Culture Reengineering on Organizational Performance

The study recommends that Bralirwa Company Limited should continue to improve employee work culture for quality services

The study also recommends that organizations should consider team building as a measure to employee's cohesion and thereby improve organizational performance.

The study recommends that Bralirwa Company limited continue to reengineer their organization culture as it contributes the highest to organization performance.

To scholars, the study recommends that other variables that are not studied in this research should be studied to boost the overall company performance as the three dimensions investigated herein contributed to 71.8% performance.

# 6.4. Suggestions for Further Study

The study was undertaken on the Bralirwa only. Every organization has its uniqueness on culture, structure, resources and the environment it operates in. A similar study should therefore be done on other organizations and companies operating in Rwanda. This will shed more light on the effect of BPR on organization performance.

In addition, a study needs to be undertaken to determine the exact time frame of the impact of restructuring so as to determine the most appropriate time for the next restructuring exercise for optimum implementation. This would enable firms to have a time table for subsequent restructurings in advance to avoid time crushes and poor implementations as this gives the firms ample time to prepare in advance for the restructuring. Moreover, a similar study needs to be conducted in a different industry to see the practical applications of the findings in the particular industry.

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