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COLLINEARITY FACTORS IN THE RESTRUCTURING PROCESS OF PUBLIC ENTERPRISES IN ZIMBABWE

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Abstract

This study was meant to determine if there is interference among internal organizational factors that have been applied during the restructuring process of public enterprises in Zimbabwe. A survey was used to collect data from a sample of 318 employees that witnessed the restructuring exercise in public enterprises. The data collected was subjected to a multiple regression analysis model using SPSS. Results depict two levels of predictability. At 95% level of significance, three factors i.e. planning, decision making and resource utilization were noted to be sufficient predictor elements for the success of organizational restructuring as a group of factors. However employee motivation and structural factors were predictors as individual elements in the restructuring process. This is a case of collinearity. The fact that these elements confer the same predictivity to organizational restructuring calls for increased monitoring of such factors by both change managers and policy implementers at both organizational and national level to find appropriate ways to identify their effects and so apply correct interventions to the restructuring process. The study therefore recommends that before any further restructuring of public enterprises, adequate attention be given to the effects of these factors if proper intervention strategies can be put in place.

Keywords: Predictive elements, restructuring, public enterprise, VIF, Zimbabwe

INTRODUCTION

The public enterprise sector in Zimbabwe has over the past three decades gone through various phases of restructurings. However these enterprises remain a failure by any standard of measurement including on the notion of delivery of social justice (Zhou, 2011 and Sedze, 2014). In addition the pace of public enterprise restructuring in Zimbabwe lags behind policy pronouncements as there is no clear way forward for these enterprises. Of the 78 public enterprises, only a few e.g. the Cotton Company (Cottco), Dairibord Zimbabwe Ltd, Cold Storage Commission (CSC), have been fully restructured. The rest have been exposed to various commercialization and unbundling processes. Despite the launch of the corporate governance framework for state enterprises document in 2010 and the subsequent corporate governance code on 9 April 2015, jurisdictional areas among the key players in the public restructuring process are not clearly delineated.

Restructuring can be considered as one of the most difficult, complex and yet necessary processes that organizations at times have to go through in order to make them efficient and effective. As part of efforts to improve performance of public enterprises, the Government approved procedures for public enterprise restructuring process. In this bid, there have been attempts to identify the internal factors that influence the performance of these entities. This study investigates these factors in terms of their influence to the restructuring processes. An analysis of the stages in the restructuring process as given by Nadir (2012) identifies these internal factors; the ability of the group to formulate plans, readiness to implement the plans and capacity of the members to make effective decisions during the process. The readiness to implement plans presupposes that the members have the motivation to see to the success of the process and that there are resources available to institute the process. This is corroborated by Connors (2012) and Kopicki and Thompson (2011) in their recommendation for institutional arrangements and organizational designs meant to guide, direct and manage the restructuring process. Other characteristics of the culture of the organization that impact on the organizational processes including restructuring are employee motivation (Heine, 2007), resources utilization (Barnat, 2014; Lebeaux, 2014) and structural factors (Ray, 2013) as predictors for success. It was therefore necessary in this study to determine the extent to which these factors influence the restructuring process in Zimbabwe.

Despite the fact that there are internal factors that have been discovered and are known to influence the performance of organizational transformation, their individual contribution to public enterprise restructuring especially for the Zimbabwe public enterprises has hardly been investigated. It remains unclear exactly how each of the factors influences the restructuring process. It has also not been clear how to determine the interventions needed to improve the

performance of these organizations. This has also resulted in unfocused interventions targeted at improving performance in these entities. The current study seeks to identify the contribution of these internal organizational factors applied during the stages of the process to the restructuring process and ways to deal with it.

The Challenge of collinearity

Managing the forces that impact business performance is important but a challenging task. It is the internal business environment which comprises of factors within the company which determine the success and approach of operations that the company has control over. Studies (Marsh, et al, 2004; Paul, 2006) have shown that when such factors influence a system as a group; a phenomenon known as collinearity, it becomes difficult to identify the unique contribution of each factor and predicting its effect. It also becomes difficult to the intervention measures necessary for the given system. Moderate collinearity may not be problematic. However, severe collinearity is a problem because it saps the statistical power of the analysis and makes it more difficult to specify the correct effect of that variable on the model.

Collinearity is a matter of degree; not a matter of presence or absence (Paul, 2006). This means that wherever there are two or more factors influencing a system, there is always a combined effect of the factors that is difficult to distinguish or eliminate. Marsh et al. (2004) corroborates the challenges posed when dealing with factors that operate in groups (collinearity) especially since these challenges can seriously threaten the validity of interpretations in structural models. In a related study Capar and Kotabe (2003), uused a sample of 81 major service firms spanning across four industries and found that the existence of group factors had an effect on the performance of firms. This means that the existence of these issues of collinearity marred interpretation of the results.

Literature indicates that collinearity is a current challenge in research when one deals with multiple factors (Burack, et al. (2012). While there has been increasing interest in studying the effect of collinearity among variables in business and management systems empirical researches of these occurrences are scanty in the Zimbabwean context. The purpose of this study was to examine the factors that influence the restructuring process of the public enterprises and determine any collinearity among them, its severity and ways to deal with it.

RESEARCH METHODS

This study examines the effect of five internal factors of the organizational culture on performance of the organizations. It relied on the observations and responses made by the people in the organizations. The researchers chose to focus on former public enterprises that

have undergone the full stage of restructuring (up to privatization). A descriptive survey of the public enterprises in Zimbabwe made and the privatized public entities in Zimbabwe constitute the unit of analysis in this study. The study adopted the descriptive research design as it was in line with the adopted quantitative research paradigm. The researchers were interested in a descriptive understanding of the culture types that prevailed at both the beginning and the end of the restructurings of public enterprises.

Five internal factors represented the restructuring process in public enterprises. These are planning formulation (PF), decision making (DM), resource utilization RU), staff motivation SM) and structural factors (SF). These factors were used to determine the interdependence.

The population for this study consisted of the 6 privatized public enterprises in Zimbabwe. However, because the researchers wanted data from the time of restructuring, only those members who participated in the restructuring process were eligible and formed the basis of the sampling frame. A brief survey of the organizations by the authors estimated the population of such employees to be approximately 1 450 for all the organizations involved. The sample size for this study was determined using the Raosoft sample calculator for sample size of a population of less than 10 000 (McCrum-Gardner, 2010). For this study, a sample size of 405 was targeted for data collection and the actual returns and unspoiled papers were 318, (least 20% of the population). Respondents for the questionnaires were selected using purposive and snowball sampling.

Table 1: Population and profile of obtained.

Name of Public Enterprise	**Estimated Size (No. of employees)**	**Sample Size used**	**Target sample obtained**
CAPS Holdings	30	10	0
Cold Storage Commission	290	85	75
Commercial Bank of Zimbabwe (CBZ)	350	100	80
Cotton Company of Zimbabwe (Cottco)	400	110	90
Dairibord Zimbabwe (DZ)	320	80	73
Zimbabwe Reinsurance Company	60	20	0
Total	**1450**	**405**	**318**

The instrument for data collection was a self administered questionnaire which was in 2 sections. The first section solicited data about the 5 variables (PF, DM, SM, RU and SF) in

relation to the restructuring process. The second section collected data on the performance of the organizations after restructuring. In order to ensure reliability of items, the Cronbach's Alpha test was carried out. The question to be answered here was 'Do the items in the research instrument measure what they are supposed to measure'? This analysis was done on the pilot data (a sample of fifty respondents). See Table 2. Only after the reliability test, was the rest of the data for the study collected.

Table 2: Cronbach's Alpha levels and interpretation for restructuring

Construct measured	# items in construct	Value of Cronbach's Alpha (standardized)	Interpretation: George and Mallery (2003) rule
Plan formulation (PF)	11	0.875	Good
Decision Making (DM)	10	0.836	Good
Resource Utilization (RU)	14	0.905	Excellent
Staff Motivation (SM)	8	0.73	Acceptable
Structural Factors (SF)	10	0.821	Good

It can be concluded that the test for reliability was positive and therefore results are usable and generalizable (since 0.7 is the bench mark). After the pilot test, the instruments were administered to the rest of the respondents. Snowball sampling techniques was used until the target sample size was reached.

This study used the Variance Inflation Factor (VIF), a common method that has been used in other studies to determine collinearity. By interpretation, the VIF is a linear relationship between a dependent variable and a group of independent variables. For this study the dependent variable is the performance of the organization and the independent variables the internal factors (Paul, 2006; McCrum-Gardner, 2010). The interaction between the factors was therefore checked using the independent variables for the particular model and taking one of them as the dependant variable at a given time. The Variance Inflation Factor (VIF) is the measure of relatedness.

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The Variance Inflation Factor (VIF) as a measure of collinearity can be interpreted differently because researchers vary in their use of the key to interpret the significance of the VIF; in this study the following key is applied:

VIF	**Status of predictors**
VIF <= 3	Not correlated
3 < VIF < 5	Moderately correlated
VIF > 5 to 10	Highly correlated

All cases with VIF less than 3 have been shaded red to depict the lack of collinearity between the dependent and the independent variables. For the majority of the cases, collinearity actually exists. The VIF represents the proportion of variance in one predictor explained by all the other predictors in the model. A low VIF therefore indicates no collinearity, whereas increasingly higher values suggest increasing variance that can be explained by other variable (Zuur, Ieno, and Elphick, 2010). The approach of using VIF allows the user to shed off the factor with the largest collinearity sequentially until all values are below the cut-off, (in this case the cut-off is 3).

ANALYSIS AND FINDINGS

Results of multiple regression show that there is a case of collinearity in the independent variables planning (PF), decision making (DM), resource utilization RU) but not in staff motivation SM) and structural factors (SF). The results obtained are laid out in Table 3.

Table 3: VIF values for the various scenarios of dependent variables.

	Dependent Variable					
	PF	**DM**	**SM**	**RU**	**SF**	**Average VIF**
VIF value for PF	X	2.761	3.362	3.361	3.27	3.331
VIF value for DM	6.529	X	7.898	3.539	7.964	6.467
VIF value for RU	7.559	3.365	7.306	X	7.231	7.2685
VIF value for SF	2.482	2.556	2.157	2.44	X	2.2985
VIF value for SM	1.829	1.817	X	1.768	1.546	1.657

The results depicted above show that it is not easy to distinguish between the influence of any one of the variables (planning formulation, decision making and resource utilization) from the others upon the restructuring process in the organizations. This means that the performance of the organization could easily be predicted by reference to any of the 3 correlated factors in the model. Because planning, decision making and resource utilization are correlated, the impression it gives for this study is that the restructuring exercise was planned and executed in accordance with best practice. These were not impediments during the restructuring exercise unless all of them were present. There is therefore less need to focus on these factors during the restructuring process. However the other 2 factors (staff motivation and structural factors) individually determine the performance of the restructuring process. There effects on the restructuring process are not dependent on that of other factors. The low VIF means this is where attention should be focused. This calls for close monitoring of such factors by both change managers and policy implementers at both organizational and national level to focus more attention on these.

This may explain why while a lot of effort has been made to improve performance, there has not been significant improvement. The ordinary staff may not have been adequately engaged, communicated to and motivated to ensure success of the restructuring process. It is likely that during the restructuring process the employees did not have a buy-in in the process.

CONCLUSION

This study was meant to determine if there is interference among internal organizational factors that have been applied during the restructuring process of public enterprises in Zimbabwe. Study found that at 95% level of significance, three factors i.e. planning, decision making and resource utilization were noted to be sufficient predictor elements for the success of organizational restructuring as a group of factors. However employee motivation and structural factors were predictors as individual elements in the restructuring process. This is a case of collinearity. The study therefore recommends that before any further restructuring of public enterprises, adequate attention be given to the effects of these factors if proper intervention strategies can be put in place.

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