

Full Length Research Paper

Impact of organizational innovation on success of cost management techniques in value creation: Evidence from manufacturing sector of Pakistan

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Manufacturing sector of Pakistan has shown weak performance in the last decade, and could not achieve the targets that could move the country toward economic development. Many factors have been held responsible for this sluggish performance. This paper focused on the cost inefficiency of manufacturing sector in creating value through effective cost management techniques. The study intended to explore one of the behavioral factors responsible for the unsuccessful role of cost management techniques in creating value through effective cost controls in manufacturing sector of Pakistan. The study took into consideration, one of the organizational culture dimension, the organizational innovation and its impact on the role of cost management techniques in value creation. The study was designed to seek the opinion of cost management professionals working in manufacturing sector of Pakistan. The analysis revealed that the organizational innovation is significantly contributing to the adoption of cost management techniques by cost management professionals, and the successful implementation of the adopted cost management techniques for value creation. The study is a significant contribution to substantiate the scarce literature on the association between cultural variables and accounting practices.

Key words: Organizational innovation, cost management, value creation.

INTRODUCTION

Manufacturing sector of Pakistan has shown weak growth during the last decade, and could not achieve the targets that could move the country toward rapid industrialization. Major factors responsible for this poor performance are considered to be the high political instability, weakening law and order conditions, increasing electricity crisis, collective effect of fiscal contraction, low productivity level due to cost inefficiency and global trading challenges. In this context, Pakistan needs to take certain important strategic decisions to ensure sustainable and integrated economic growth in general, and the manufacturing sector's growth in particular, in a rapidly changing and challenging international competitive environment. This paper focuses on the cost efficiency factor of the manufacturing sector of Pakistan. Cost efficiency and

effectiveness is always achieved through value creation at different stages ranging from pre production to post production. Various CMT are used for this purpose from R&D stage till after sale customer services as shown in Figure 1.

LITERATURE REVIEW

Management accounting is considered not only to deal with the accounting but the management (Zhuo, 2007). Various CMT have been introduced by management accounting, which has grown significantly during the past century. These include strategic cost management, activity based costing, balanced scorecard and target costing. Management accounting has also contributed to other fields such as TQM and business process re-engineering (Merseraeau, 2008). CMT have been continuously in use due to their widespread benefits. On

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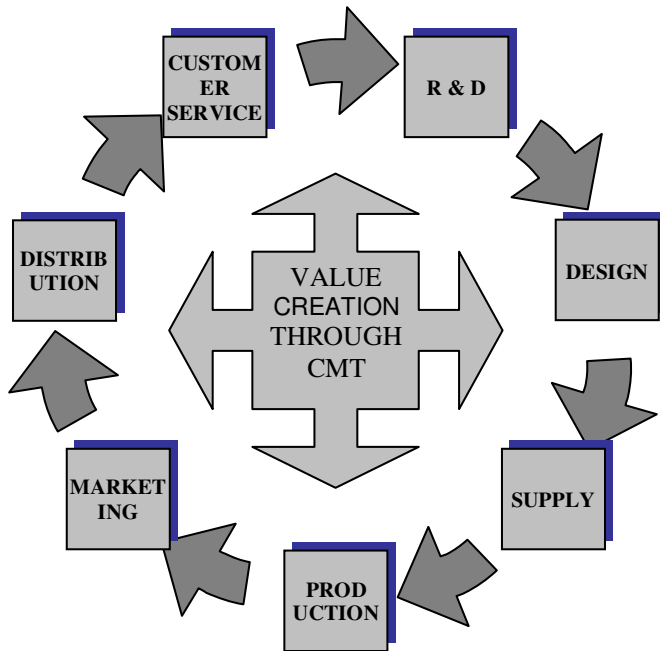


Figure 1. Value creation cycle and CMT.

the other side, it was observed that over time, the use of CMT has shown sluggish trends. CMT and philosophy of management are found to be mutually composed of each other vernacularly (Sawabe and Ushio, 2008). Researchers in management accounting have always been looking for linkages and relationship between culture and accounting practices (Bhimani, 2007; Ahrens, 1999). Existing literature proposes that cultural values of the users of accounting techniques influence the success or failure of those techniques (Bhimani, 2003; Dent, 1987). Theories developed during the past decades portray the social and institutional dimensions of accounting practices (Hopwood, 1992; Miller, 1994; Young, 1994). It has been revealed that the implications of these accounting practices have spread beyond the organizations to the society. Thus, the field of accounting has got linkages with the social practices and the society (Miller, 1994; Hopwood, 1992). It gives rise to a range of studies in this context to analyze and identify the factors affecting the adoption and implementation of accounting practices in a variety of organizations having different social and cultural attributes. Researches depicting the linkages of accounting with social practices investigate accounting to identify the implications of accounting in the social context. These studies look at the application of accounting practices in different organizational settings to analyze the implications of the individuals' behavior and the societies (Potter, 2005). Rogers (2003) concluded that the innovation in an organization is always affected by the culture prevailing in the organization. Shields (1995) and Birnberg (1998) have emphasized the

significance of exploring the variables cost management and effects of organizational culture (Bhimani, 2003).

There is a disparity in the academic community regarding how cost management research should be conducted. Interventionist research is being considered one way to increase the practical relevancy of such research (Jakkula and Suomala, 2008). Major research work related to the manufacturing organizations of Pakistan during the last twenty years has taken into consideration the interacting effects of different inputs on output (Khan and Burki, 1999; Khan and Rafiq, 1993; Zahid, 1993; Chisti and Mahmood, 1991; Battese and Malik, 1988; Khan, 1989; Kemal, 1981). However, a few researches have also been carried out to discuss the factors affecting industrial inefficiencies (Kemal, 1998), issues related to utilization of capacity (Kalim 2001a; Pasha and Qureshi, 1984), and factors affecting the potential of industrial institutions to provide for employment (Kalim 2001b). Yet, none of these studies explicitly discusses the issues that are responsible for not achieving the cost competitiveness in the manufacturing sector. The present research is an endeavor to review the manufacturing sector of Pakistan from this viewpoint.

Objectives of the study

The preceding discussion brings to light the need to study how innovation at organization affects the adoption and the subsequent successful implementation of CMT. The present study intends to contribute to and extend existing studies in this particular field by providing insight through empirically testing the effect of the variable organizational innovation on the adoption of CMT and the successful implementation of the adopted CMT for value creation.

Significance of the study

It provides a deeper look into the causal effect of organizational innovation on the adoption and successful implementation of CMT for value creation. It provides a background for further future researches in the same field in Pakistan in other non manufacturing organizations. The empirically tested results provides with information that could be used by manufacturing organizations in Pakistan for the better use of CMT to enhance value creation in their operations.

RESEARCH METHODOLOGY

Smircich (1983) categorized the culture of the organization with respect to the internal and external environment. This study takes into consideration the organizational culture from internal point of view. The dimension of organizational culture (Quinn and Kimberly, 1984) assumed in the research is organizational innovation as the independent variable. The perception of an individual is a dimension of organizational innovation (Koys and DeCotiis, 1991).

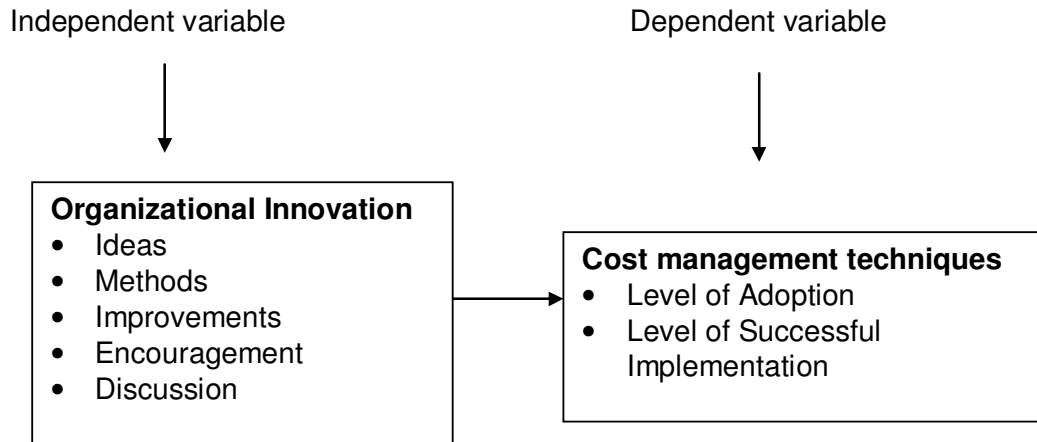


Figure 2. Diagrammatic presentation of the theoretical framework.

This dimension of the organizational innovation affects the level of acceptance of an innovation in an organization because, generally, the individuals act or react as per their perceptions. Thus, there is a linkage between this dimension of organizational innovation and the usage of innovative accounting practices.

Development of hypotheses

Given the possible association between organizational innovation and the CMT, the following hypotheses have been developed:

H₁: Higher organizational innovation lead to higher level of adoption of CMT

H₂: Higher organizational innovation lead to higher level of successful implementation of CMT

Diagrammatic presentation of the theoretical framework

A diagrammatic presentation of the theoretical framework is presented in Figure 2.

Operationalization of the variables

Independent variable

The organizational innovation is intended to be measured through the five indicators stated in Figure 2. These indicators measure the level of innovation as a dimension. Each indicator is measured through seven-point Likert scale ranging from 1 (for strongly disagree) to 7 (for strongly agree).

Dependent variable

The dependant variable CMT is measured in two ways: the level of adoption of CMT and the success of the adopted CMT in value creation. The level of adoption is measured as a composite score comprising the nine CMT considered for the purpose of this study. The total number of CMT in use reflects the level of adoption of the innovation with 0 being no adoption at all and 9 being the highest level of adoption. Respondents were requested to indicate their perception on the extent of success of the adopted CMT in use

on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Research tool

The instrument used to measure the effect of dependent variable on independent variable is adopted from Chia and Koh (2007). The Cronbach alpha Coefficients of 0.99 has been reported. A pilot study was carried out to evaluate the reliability of the scale in Pakistani environment. The results showed the reliability of the constructs as Cronbach alpha values of 0.88 (adoption and successful implementation) and 0.86 (organizational innovation).

Population and sampling

Population of the study was manufacturing organizations of Pakistan, having professionally qualified management accountants heading their cost management functions. Judgment sampling was used to select the organizations. Three hundred professional management accounting professionals working in different manufacturing organizations were selected and the research questionnaire was sent to them through email. Ninety six questionnaires were successfully collected back, amounting to 32% response rate.

ANALYSES AND DISCUSSION

Descriptive analysis: Adoption of CMT

The descriptive analysis (Table 1) revealed that the level of adoption of key performance indicators is highest among all, and a vast majority of the organizations are employing this CMT to achieve cost competitiveness. Use of functional analysis and resource management techniques is significantly high. Moreover, activity based costing, target costing, and zero based budgeting are used by slightly lesser number of organizations as against the highly used techniques. Balance scorecard, activity based management, and strategic cost management are least used CMT in manufacturing organizations

Table 1. Descriptive statistics.

Variable	N	Minimum	Maximum	Mean	Std. deviation
Zero based budgeting	96	0	1	0.51	.503
Resource management	96	0	1	0.59	.494
Activity based management	96	0	1	0.48	.502
Target costing	96	0	1	0.52	.502
Activity based costing	96	0	1	0.52	.502
Strategic cost management	96	0	1	0.47	.502
Functional analysis	96	0	1	0.64	.484
Key performance indicators	96	0	1	0.73	.447
Balanced scorecard	96	0	1	0.49	.503
Valid N (listwise)	96				

Table 2. Descriptive statistics.

Variable	N	Minimum	Maximum	Mean	Std. deviation
Zero based budgeting	96	0	7	2.38	2.518
Resource management	96	0	7	3.16	2.773
Activity based management	96	0	7	2.23	2.434
Target costing	96	0	7	2.43	2.508
Activity based costing	96	0	7	2.55	2.542
Strategic cost management	96	0	7	2.31	2.56
Functional analysis	96	0	7	3.54	2.836
Key performance indicators	96	0	7	4.23	2.781
Balanced scorecard	96	0	7	2.62	2.877
Valid N (listwise)	96				

and a fewer of the organizations are using these for cost efficiency and control purposes.

Descriptive analysis: Successful implementation of CMT

The perceived level of successful implementation of adopted CMT (Table 2) in different manufacturing organizations disclosed that key performance indicators is the most successfully implemented CMT among all. Functional analysis and resource management are also implemented in organizations quite successfully. The balanced scorecard though adopted by a fewer organizations, is implemented quite successfully by these organizations.

On the other side, activity based costing, target costing and zero based budgeting though adopted by many organizations, a fewer of these organizations are implementing these practices successfully. The strategic cost management and activity based management were perceived to be the least adopted and least successfully implemented CMT.

Inferential analysis

The one-way ANOVA is used to test the hypothesis whether the variables differ or not in some way. The significance value of the F test (Table 3) showed that there are significant differences among adoption and successful implementation of CMT in relation to the organizational innovation. Thus the level of adoption and successful implementation of CMT is not the same across differences in organizational innovation.

To further explore the structure of the differences in the variables, bivariate correlations procedure is used to determine the strength and direction of the association between the variables.

The reported correlation (Table 4) suggested that there is a positive and significant association between the variables, and therefore, organizations should focus their efforts on increasing organizational innovation to enhance the level of adoption and successful implementation of CMT to achieve cost competitiveness and efficiency.

Linear regression is used to investigate more about the structure and relationship of variables by separately

Table 3. ANOVA

Variable		Sum of Squares	df	Mean Square	F	Sig.
Adoption of CMT	Between Groups	7.029	16	.439	10.436	.000
	Within Groups	3.326	79	.042		
	Total	10.355	95			
Success of CMT	Between Groups	4.368	16	.273	11.344	.000
	Within Groups	1.901	79	.024		
	Total	6.269	95			

Table 4. Correlations

Variable		Adoption of CMT	Success of CMT	Organisational innovation
Adoption of CMT	Pearson correlation	1	0.971**	0.258*
	Sig. (2-tailed)		0.000	0.011
	N	96	96	96
Success of CMT	Pearson correlation	0.971**	1	0.313**
	Sig. (2-tailed)	0.000		0.002
	N	96	96	96
Organisational innovation	Pearson correlation	0.258*	0.313**	1
	Sig. (2-tailed)	0.011	0.002	
	N	96	96	96

** and *. Correlation is significant at the 0.01 and 0.05 level (2-tailed) respectively.

Table 5. Coefficients^a

Model		Unstandardized Coefficient		Standardized Coefficient	t	Sig.
		Beta	Std. error	Beta		
1	(Constant)	0.151	0.157		0.959	0.340
	Organisational.Innovation	0.583	0.225	0.258	2.590	0.011

a. Dependent Variable: Adoption of CMT.

regressing the dependent variables against the independent variable. The relationship is thus described as:

$$Y = i + a X + e$$

Where: Y = dependent variable (level of adoption/successful implementation); a = regression coefficient; X= independent variable (organizational innovation); e = error term.

The regression coefficient for expected rate of adoption and organizational innovation (Table 5) depicted that the relationship can be expressed as:

$$Y = 0.151 + 0.583 * X + e$$

The results (Table 6) indicated that the regression and

residual sums of squares are significantly different and the significance value of the F statistic depicted that the variation explained by the model is not due to chance and about 7% of the variation in adoption of CMT is explained by the model. The regression coefficient for successful implementation and organizational innovation (Table 7) described that the relationship can be expressed as:

$$Y = 0.028 + 0.550 * X + e$$

Further analysis (Table 8) revealed that regression and residual sums of squares are significantly different and the significance value of the F statistic stated that the variation explained by the model is not due to chance and about 10% of the variation in successful implementation

Table 6. ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.690	1	0.690	6.708	0.011 ^a
	Residual	9.665	94	0.103		
	Total	10.355	95			

a. Predictors: (Constant), Organisational innovation, b. Dependent Variable: Adoption of CMT.

Table 7. Coefficients^a

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		Beta	Std. Error	Beta		
1	(Constant)	0.028	0.120		0.231	0.818
	Organisational.Innovation	0.550	0.172	0.313	3.193	0.002

a. Dependent variable: Success of CMT..

Table 8. ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.613	1	0.613	10.192	0.002 ^a
	Residual	5.656	94	0.060		
	Total	6.269	95			

a. Predictors: (Constant), Organisational innovation, b. Dependent variable: Success of CMT.

of CMT is explained by the model.

CONCLUSION AND RECOMMENDATIONS

The study presented the realistic substantiation to supplement the scarce literature on the association between innovation at organization and the role of CMT in value creation. Besides providing empirical evidence, the study provided an insight into the intricate nature of interaction between organizational culture and the CMT. The organizations that are developing strategies to initiate and promote innovations, whether accounting related or otherwise, should not merely rely on the expertise in that particular area, they must also consider other factors that may affect the success of such innovations. One of those factors might be the different dimensions of the organizational culture on such innovations; therefore the organizations that are going to adopt innovative CMT must also consider the concomitant changes in the various cultural dimensions, to get the advantages out of the adopted innovations. The management must be well aware of the probable significant impact of the culture of the organization on the innovations adaptability in manufacturing and other organizations.

LIMITATIONS

The study is focused on manufacturing organizations only. However, such studies may be carried out in trading and service companies to have a better insight into the interacting effect of the variables. Same conditional associations can also be established between the other dimensions of culture on CMT. The cross sectional approach was adopted in the study, however, longitudinal studies and case studies might have added more value to the empirical findings, and as such, could produce results that could harmonize and add value to the results of the present study.

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