



The Impact of Propagating Management Accounting Innovations on Organizational Culture

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ABSTRACT

Regarding the tremendous changes effected in the domain of modern technologies and information technologies, firms are required to adopt management accounting innovations to continue their operations. While the extant literature has focused on developed countries, the present project is set to determine the extent to which management accounting innovations are applied in firms in the context of a developing country - Iran. As cultural factors play a major role in propagating management accounting innovations, the ongoing research aims to examine the cultural dimensions of Edgar Schein's model and their association with management accounting innovations. Organizational culture is composed of such dimensions as external (superficial) adaptation including strategy, targets, and control systems and tools, and internal cohesion consisting of shared language, definition of group boundary, rewards and punishments, and power relations and position. Management accounting innovations include activity-based costing, activity-based management, balanced scorecard and benchmarking. As a field-descriptive study, this research employs two questionnaires to collect the necessary data. To analyze the data, firms are divided into two groups, namely one with management accounting innovations and the other one without these innovations. Afterwards, various methods like Mann-Whitney test, comparison of means test, mean ranks of two independent population as well as t-test, Wilcoxon test, and Kruskal-Wallis test were adopted to test the research hypotheses. Regarding the results of testing the research hypotheses at 95% level of significance, one can conclude a significantly direct relationship between using management accounting innovations and organizational culture. The results reveal that applying management accounting concepts, methods and innovations assist firms and organizations in achieving organizational goals, improving operations, and increasing the efficiency of the managerial decisions. Since organizational culture is a prerequisite for accounting profession, adopting and implementing management accounting innovations are a function of organizational culture.

Keywords: organizational culture, innovation, management accounting, questionnaire survey, developing country, Iran.



1. Introduction

Organizational culture is prerequisite for the development of any professions. Profession and society both are contingent on the ethical decisions made by individuals, which, in turn, forms a basis for corporate trading operations and a social discipline.

Professional ethics and behaviors are the cornerstones of the accounting profession. Accountants fail to provide users with accounting services unless they trust and accept them. Trust in services is a function of trust in service providers, which, in turn, is a monument to the ethical and integrity values. Ethics is the building block of accounting profession as accounting plays a pivotal role in the economic and social growth of the society (Hajjha, 2014).

Applying management accounting concepts and methods in manufacturing and service companies have long played an essential role in achieving organizational goals, improving operations and making efficient decisions. The traditional system of accounting fails to establish a direct or an indirect relation between resource deployment and its consequences, yet tries to collect costs. In their pursuit of collecting corporate costs, most directors exhibit the same attitude, which is fortified by the accounting system of their organizations.

Directors employ various tools and techniques to manage their organizations more efficiently. One of these tools is management accounting which help directors make informed decisions. As in other scientific fields, management accounting has experienced various innovations. Some define innovation as the first use of modern knowledge, whereas others define it as a new thing in relation to a particular organization. As such, the definition of innovation is founded on the concept of novelty and its relation to initiative (Khoshtinat, 2002).

Nowadays, organizational health is of paramount importance to organizations while they seek sustainability and conformity to circumstances and try to generate necessary capabilities to continue as a going concern. Unlike financial accounting which focuses on historical data, management accounting mostly collects ordinary and current data. Therefore, management accounting is intrinsically based on decision-making, which is concerned with current and future events. To assist managers of various organizational levels in decision-making and evaluation practices, management accounting needs to supply them with their necessary information. Management accounting information is thus useful when it is relevant, accurate, and reliable, and is estimated using accurate estimation methods. The latest

report by the World Economic Forum on the IT's of different countries underscores the pivotal role of IT in the development of those countries, which was previously highlighted in the reports by national and international organizations (Qunhthn, 2011).

However, information technology-oriented development necessitates the adoption of management accounting innovations in organization and firms. Thus, the development of information technology and modern technologies requires the application of management accounting innovations, which can be introduced as a general and practical principle. Therefore, since organizations are given this opportunity to choose, propagate, deduce and plan creativity as an innovation and driver of novel ideas, they are recognized as a part of organizational culture (Sanford, 2017).

Edgar Schein maintains that culture refers to those latent beliefs which individuals have communally acquired and regulate their daily behaviors accordingly. If fish were endowed with the language faculty and able to say what water is, an organization's individuals could talk about the nature of their culture. Similar to Freud who believed that human mind is like an ice mountain, Schein analogizes organizational culture to an ice mountain which consists of three parts. The superficial or outer part of the mountain is a partial impression of culture, like human mind in which the self-conscious constitutes a small part. Schein states that the most important danger one may encounter while struggling to understand culture is to make it oversimplified in his mind and perceive it as it looks.

Therefore, advances in technology has done much to help directors make informed decisions for their organizations. Whether at national or organizational level, cultural factors exert great influence on management accounting innovations, whose efficacy is protean in various cultural settings.

The present study is concerned with exploring the association between management accounting innovations and organizational culture based on Edgar Schein's model. Organizational culture is composed of various dimensions including A) external (superficial) adaptation which consists of strategy, goals, and control systems and tools; B) internal cohesion which involves (shared language, definition of group boundary, rewards and punishments, power relations and position).

Management accounting innovations examined in this study include activity-based costing, activitybased management, target costing, balanced scorecard, and benchmarking. The present research aims at

identifying cultural differences among the firms that make use of or don't make use of these innovations. It also seeks to investigate the effect of various dimensions of organizational culture on the extent to which management accounting innovations are utilized.

2. Literature Review

The idea of organizational culture is a new topic of thought and discussion within the domain of management knowledge and organizational behavior. Following new theories and studies in management, organizational culture has received much attention from academic settings. Demographers, sociologists and recently psychologists, and even economists have devoted particular attention to this novel subject and developed a number of theories to cope with managerial issues (Hajiha, 2014). A couple of management thinkers hold the belief that organizational culture is considered as one of the most influential factors contributing to the development of countries such that many scholars are inclined to attribute Japan's achievements in industry and management to its organizational culture. As a set of communal beliefs and values, organizational culture can affect individuals' behavior and thought, thereby facilitating or inhibiting their progress. Organizational culture can pave the way for fundamental changes in organizations. As new reform plans mostly point up organizational reforms, these plans are developed to effect cultural changes within organizations (Taghizadeh, 2016).

Organizational culture refers to those creeds, beliefs and behaviors which not only determine how employees and directors interact, but also manage external transactions and activities of organizations. It is not long since employees have paid particular attention to appropriate organizational culture as an advantage. In fact, organizational culture of a certain firm would not necessarily yield the same results as that of other firms. Nevertheless, firms with appropriate organizational culture can set a good example for firms seeking to establish their own culture. Management accounting relies heavily on diversified systems and modes of knowledge, according to which it is defined as a form of knowledge which assists management in implementing corporate plans and making logical decisions to achieve the organizational goals (Etemadi, 2012).

Management accounting information needs to be potent enough to alter, modify or confirm managerial decisions. Management accounting is a system of collecting financial and operational information which guides managerial activities and motivational actions, and creates and advocates cultural values to achieve strategic goals of organizations.

Talebi (2010) conducted a study on how directors of the firms on the Tehran Stock Exchange make use of management accounting tools. As a survey, this research employed a questionnaire to evaluate the efficiency of management accounting tools and uncover the impediments to their application. The results of testing the research hypothesis reveal that the directors of the manufacturing firms listed on the Tehran Stock Exchange utilize funding, deviation analysis and breakeven analysis tools. Also, they rarely deploy balanced scorecard, reengineering process, responsibility accounting, target costing, and activity-based costing. The major obstacles to use the studied management accounting tools include the cost and benefit of applying the tools, shortage of scientifically skilled and experienced human resource and making short-term and temporal policies by government, respectively.

Namazi (2006) also scrutinized the application of management accounting tools in the firms listed on the Tehran Stock Exchange. This survey employed a questionnaire to investigate the efficiency of management accounting tools. The results of testing the research hypothesis reveal that the directors of the manufacturing firms listed on the Tehran Stock Exchange utilize funding, deviation analysis and breakeven analysis tools. Also, they rarely use balanced scorecard, reengineering process, responsibility accounting, target-based costing, and activity-based costing. The major impediments to use the studied management accounting tools include the cost of applying the tools, shortage of scientifically skilled and experienced human resource and making short-term and temporal policies by government, respectively.

Hajiha (2014) undertook a project on the association between organizational culture and management accounting innovations in the firms listed on the Tehran Stock Exchange. In doing so, various innovations including activity-based costing, activitybased management, balanced scorecard, target-based costing, standard costing, quality costing, and Kaizen costing were considered, and different dimensions of organizational culture like supportive orientation, innovation, goal orientation and legal positivism were adopted. The findings of the study demonstrated a

significant difference between the organizational culture of the firms that use management accounting innovations and that of those firms lacking these innovations. Moreover, directors can bring about cultural changes in the hope of improving management accounting systems.

Chenhall (2005) studied the impact of organizational culture, organizational characteristics and organization's external environment on management accounting methods in the Turkish industrial firms. The results indicated that organizational culture is correlated with management accounting methods, which, in turn, is related to the number of employees and their age range. On the contrary, no correlation was reported between competitive levels and uncertain environments, and management accounting methods.

Etemadi and Dianati (2012) examined the impact of three parameters of culturalization, contribution to budgeting and management accounting systems on management performance, and eventually explained their mutual effects. Their findings confirmed the presence of a significant linkage between contribution to budgeting and management accounting systems, and management performance as well as the effect of organizational culture on this relation. One thus can come up with this conclusion that individuals' contribution to budgeting, even with appropriate level of management accounting information, fails to promote managerial performance in firms or organizations with high power distance and collectivist culture.

Johnson and Kaplan (1987) ran a study on the integration of activity-based costing and economic value added as a uniform system of performance appraisal, and concluded that integration can eliminate the limitations of either systems.

Adams (2011) also investigated the application of management accounting tools by the managers of higher education institutes. The research employed program budgeting, flexible budgeting, temporal budgeting, cash budgeting, and activity-based costing methods. The findings suggest that private higher education institutes put more emphasis on the use of management accounting methods in comparison with their public counterparts. These institutes have imitated the way prosperous economic entities have utilized budgeting, pricing, performance appraisal and external financing methods. Unique financial conditions of these institutes exert trivial effect on the way the management accounting methods are applied. Accordingly, lack of appropriate understanding of the organizational goals and proper use of these tools are amongst the major impediments to managers to adopt these methods.

However, previous literature has examined the relation between concepts of culture and accounting, whereas their effect on management accounting and its innovation which is a basis for managerial decisions and planning has received little attention. The current article therefore aims to use organizational culture to discuss the role of management accounting and its innovations in enhancing culture. The findings of the study suggest that organizational culture of contemporary organizations develops via management accounting innovations. Reviewing lots of studies in accounting literature indicates that Iranian accounting literature has devoted less attention to management accounting than financial accounting and auditing, thereby downplaying its role and importance in the organizations.

3. Methodology

Research hypotheses

Primary hypothesis

- There is a significant difference between the organizational culture of those firms using management accounting innovations and those lacking them.

Secondary hypotheses

- There is a significant distinction between external adaptation of the firms using management accounting innovations and those lacking them.
- There is a significant difference between internal cohesion of the firms using management accounting innovations and those lacking them.

Research methodologies

As a field-descriptive study, the present research employs library method together with journals, textbooks and websites to devise its theoretical framework. To collect the data concerning management accounting innovations and organizational culture, two questionnaires were sent to the statistical population, i.e. all financial executive officers and experts of the firms listed on the Tehran Stock Exchange. Adopting a random sampling method, the article, as cited above, uses two researchmade and standard questionnaires. The former was aimed to collect the data concerning management accounting innovations, and hence its validity was verified by university professors and its reliability was confirmed based on $\alpha=0.84$. The latter is the standard organizational culture questionnaire developed by

Edgar Schein, based on five-point Likert scale and reliable with Cronbach's α of 0.94. Among 180 questionnaires sent to the accountants and financial managers, 120 ones were answered back. To examine whether the organizational culture of the firms using management accounting innovations is significantly different from that of the firms lacking these innovations, various methods including Mann-Whitney, comparison of means test, mean ranks of two independent populations, T-test, Kruskal-Wallis test and Wilcoxon test were adopted.

Research variables

To evaluate the organizational culture, the present research employed Edgar Schein's model, which propounds two different mainstreams for competitive values within an organization. One mainstream concerns external (superficial) adaptation which includes strategy, goals, and control systems and tools. The other one is internal cohesion which comprises shared language, definition of group boundary, rewards and punishments, and power relations and position. Furthermore, management accounting innovations include the following items which are identified via a questionnaire.

Activity-based costing

Activity-based costing has been developed by firms which have been beset by the problem of underestimating the cost of product within the traditional costing system. Traditional ways of sharing indirect costs allocate higher costs to high-volume production, yet lower costs to low-volume production. This leads to a rise in customers' demands for goods with lower cost, price and production volume, yet a decrease in their demands for goods with high cost, price and production volume. Activity-based costing also contributes to other activities like non-value added costing, long-term pricing and capacity management (Heeks, 2008).

Activity-based management

Activity-based management, as a technique of activity-based cost management, not only consider such strategic issues as profitability, customers and services, but also seeks to analyze them to determine non-value added activities, cost drivers, operations and opportunities through redesigning business processes. This suggests that activity-based management is concerned with providing chief executives with necessary information on which product or customer is

more profitable and which non-value added activity has to be eliminated (Rahnamayroodposhti, 2009).

Target costing

Target costing is a potent strategic tool which enables organizations to not only find out quality, cost and time, but also control costs in advance (Namazi, 2014).

Balanced scorecard

Balanced scorecard is a conceptual framework which aims to translate the strategic goals of organizations into a set of practical indices. In balanced scorecard literature, financial indicators are recognized as lagging indicators, which are complemented by leading indicators. Lagging indicators come of organizations' prior performance, whereas leading indicators are known as future economic performance drivers (Kaplan and Norton, 1992).

Benchmarking

Benchmarking refers to the continuous process of evaluating products, services and activities against competitors or firms known as industry pioneers. That is to say that benchmarking is the process of considering activities, responsibilities or performance used for continuous improvement (Van Dyk et al, 2017).

Benchmarking is a way whereby particular activities are identified, understood and adapted to be able to improve the general organizational performance. It is characterized as a systematic and continuous process of evaluating firms which are known as pioneers in business processes. In this research, firms which have used management accounting innovations are valued 1, 0 otherwise.

4. Results

This research is concerned with investigating the connection between management accounting innovations (activity-based costing and activity-based management) and organizational culture. Therefore, Ttest, Wilcoxon test and Kruskal-Wallis test were adopted to test the research hypothesis. The results point to the normality of the distribution of organizational culture data.

As sample firms are divided into two groups, namely those with management accounting innovations and those lacking them, variables with significant level of smaller than 0.05 enjoy non-normal distribution, whereas those with significant level of greater than 0.05 show normal distribution. Therefore, table (1)

demonstrates the normal distribution of each set of firms as well as that of the whole sample.

Testing the research hypotheses

Primary hypothesis: there is a significant difference between the organizational culture of the firms using management accounting innovations and that of the firms lacking them.

Null hypothesis and alternative hypothesis are tested as follows:

H0: there is no significant relationship between organizational culture and management accounting innovations.

H1: there is a significant relationship between organizational culture and management accounting innovations.

Table 1- The results of testing the normality of organizational culture variables

Management accounting innovations						Statistical population			variables
Lack of management accounting innovations			Using management accounting innovations						
Error level	statistics	number	Error level	statistics	number	Error level	statistics	number	
0.522	0.622	57	0.094	0.712	68	0.125	0.817	125	External adaptation
0.633	0.824	57	0.463	0.014	68	0.223	1.102	125	Internal cohesion
0.375	0.595	57	0.321	0/965	68	0.325	0.815	125	Organizational culture

Table 3- The results of comparison of means test and mean ranks for the variable of organizational culture between two groups of the firms

Comparison of means test				Comparison of variances		Empirical mean		Number		Main variable
Mean differences	Error level	Degree of freedom	tstatistics	Error level	fstatistics	Lacking innovation	Using innovation	Lacking innovation	Using innovation	
0.23541	0.000	14	3.6721	0.215	1.223	2.9722	3.2257	57	68	Organizational culture
Comparison of mean test						Mean ranks		Number		Main variable
Error level		z-statistics		u-statistics		Lacking innovation	Using innovation	Lacking innovation	Using innovation	
0.000		-2.893		237.000		27.11	47.02	57	68	Organizational culture

Since the result of t-test equals 3.6721, which is greater than the values of absolute critical statistics (1.96 & 2.58) at an error level of lower than 0.05, the null hypothesis is rejected at 95%, suggesting a significant difference between the organizational culture of the firms using management accounting innovations and that of the firms lacking these innovations. The mean of the answers of every respondent was calculated, and then the mean of all means was computed as the empirical mean. The result of mean ranks test is in compliance with that of comparison of means test.

First secondary hypothesis: there is a significant difference between the external (superficial) adaptation of the firms using management accounting innovations and that of the firms lacking these innovations.

The null and alternative hypotheses are tested as follows:

H0: there is no significant relationship between external adaptation and management accounting innovations.

H1: there is a significant relationship between external adaptation and management accounting innovations.

As t-statistic is valued 4.273, which is greater than the absolute critical statistics values (1.96 & 2.58) at an error level of less than 0.05, the null hypothesis is rejected at 95%, implying that a significant difference exists between the external adaptation of the firms using management accounting innovations and that of the firms lacking these innovations. The results obtained from mean ranks test is in accordance with those of observed comparison of means test.

Second secondary hypothesis: there is a significant difference between the internal cohesion of the firms using management accounting innovations and that of the firms lacking these innovations.

The null and alternative hypotheses are tested as follows:

H0: there is no significant relationship between internal cohesion and management accounting innovations.

H1: there is a significant relationship between internal cohesion and management accounting innovations.

Table 4- The results of comparison of means test and mean ranks test for the variable of external adaptation between two groups of the firms

Comparison of means test				Comparison of variances		Empirical mean		Number		Main variable
Mean differences	Error level	Degree of freedom	t statistics	Error level	f statistics	Lacking innovation	Using innovation	Lacking innovation	Using innovation	
0.23541	0.000	14	3.6721	0.215	1.223	2.9722	3.2257	57	68	External adaptation
Comparison of means test				Mean ranks		Number		Main variable		
Error level	z-statistics		u-statistics		Lacking innovation	Using innovation	Lacking innovation		Using innovation	
0.000	-2.893		237.000		27.11	47.02	57	68	External adaptation	

Table 5- The results of comparison of means test and mean ranks test for the variable of internal cohesion between two groups of the firms

Comparison of means test				Comparison of variances		Empirical mean		Number		Main variable
Mean differences	Error level	Degree of freedom	t statistics	Error level	f statistics	Lacking innovation	Using innovation	Lacking innovation	Using innovation	
0.23541	0.000	14	3.6721	0.215	1.223	2.9722	3.2257	57	68	Internal cohesion
Comparison of means test				Mean ranks		Number		Main variable		
Error level	z-statistics		u-statistics		Lacking innovation	Using innovation	Lacking innovation		Using innovation	
0.000	-2.893		237.000		27.11	47.02	57	68	Internal cohesion	

Since the value of t-statistic is obtained 4.723, which is greater than the absolute critical statistics values of 1.96 and 2.58, at an error level of smaller than 0.05, the null hypothesis is rejected at 95%, implying that a significant difference is observed between the internal cohesion of the firms using management accounting innovations and that of the firms lacking these innovations. The results obtained from mean ranks test is in compliance with those of observed comparison of means test.

As the z-value (2.17) is greater than the absolute critical statistic with the value of 1.96 at an error level of lower than 0.05, the null hypothesis is rejected at 95% level of significance, indicating that using management accounting innovations is significantly and directly correlated with organizational culture.

Table 6- The results of t-test between

Type of relation	test	zstatistic	p value	Error level	Number	Main variable
Direct	ttest	2.17	0.0351	0.05	125	Organizational culture

5. Discussion and Conclusions

This research is concerned with examining the relationship between organizational culture of the firms using management accounting innovations and that of those firms lacking them based on Edgar Schein's model. The primary hypothesis of the research was examined in 125 firms in terms of two secondary hypotheses based on the dimensions of organizational culture proposed by Edgar Schein. To analyze the collected data, two methods of comparison of means test and mean ranks of two independent societies were employed. The results reveal that the organizational culture of the firms using management accounting innovations is significantly different from that of the firms devoid of these innovations. One can therefore conclude that firms using management accounting innovations are significantly different from firms without these innovations in terms of strategy, targets, control systems and tools (external adaptation), shared language, definition of group boundary, rewards and punishment, power relations and status (internal cohesion). Thus, effecting right changes and providing appropriate cultural setting within firms and organizations can improve and revamp management accounting system and eliminate the relevant obstacles.

As managers make informed decisions based on accurate information, management accounting is liable for supplying this information. Therefore, various management accounting techniques and methods including activity-based costing, activity-based management, target-based costing, balanced scorecard and benchmarking help directors make informed decisions. In today's competitive world, on the other hand, a creative and innovative environment can guarantee the survival of firms. An appropriate environment paves the ground for germinating novel and innovative thoughts. Those firms with appropriate culture of innovation will benefit from its competitive advantage.

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