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Employee Involvement is the Prime Organizational Culture Trait Influencing Balanced Scorecard Effectiveness in the Hospitals: Evidence from a Correlation Study

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Abstract

Background and Objectives: Balanced Scorecard is an increasingly popular tool for performance evaluation. Healthcare organizations have broadly adopted this method for implementing their strategic plans. There is, however, increasing concerns on barriers to balanced scorecard implementation. Built on the fundamental impacts of organizational culture on hospital performance, this study explored the relationship between balanced scorecard effectiveness and organizational culture.

Methods: A descriptive analytical study of cross-sectional design was conducted within the period of August 2009 to June 2010. One hundred and fifty employees of Hasheminejad Kidney Center were enrolled. The questionnaire comprised two items addressing balanced scorecard effectiveness and 60 items related to four dimensions of organizational culture, including Involvement, Consistency, Adaptability, and Mission. Validity of the questionnaire was examined by seeking expert opinion. A high reliability of the questionnaire was ensured by obtaining a Cronbach's alpha of 0.94. Survey results were summarized using descriptive statistics. The relationship between organizational culture and balanced scorecard effectiveness was measured using Pearson's correlation coefficient, and modeled via regression analysis.

Findings: Balanced scorecard effectiveness showed significant correlations with Involvement ($r = 0.44$, $P < 0.01$), Consistency ($r = 0.27$, $P < 0.01$), Adaptability ($r = 0.28$, $P < 0.01$), and Mission ($r = 0.35$, $P < 0.01$). Multiple regression analysis identified Involvement as the only predictor of balanced scorecard effectiveness ($\beta = 0.431$, $P < 0.01$).

Conclusions: While all factors of organizational culture can influence balanced scorecard effectiveness, employee involvement holds prime importance. Hence, hospital leadership needs to strongly encourage employee involvement in organizational processes, in order to achieve high effectiveness of balanced scorecard.

Keywords: Balanced Scorecard, Organizational Culture, Performance Evaluation, Hospital, Strategy Implementation

Background and Objectives

In addition to devising appropriate strategies to reach goals, organizations also need to adopt effective approaches for implementation of their strategies and evaluation of related action plans. In recent years, Balanced Scorecard (BSC) has emerged as a popular method in strategy implementation and performance evaluation. This method enables management to translate the organization's vision, mission, goals, and strategies into defined performance evaluation indices [1]. The usefulness of this method is demonstrated by its widespread use by many organizations across the world. The American Institute of Accountants described BSC as the leading strategy implementation and performance evaluation method that outperforms other alternative approaches such as Malcolm Baldridge, EFQM, and Six Sigma [2]. Hackett Group, a global strategic business advisory, reported in 2008 that over 700 American organizations were among mature users of the BSC method [3].

Among the sectors that increasingly welcome the BSC in strategy implementation is the Health Sector. The advantages of BSC in hospital performance evaluation and strategic management are extensively documented [4-8]. Nevertheless, there is also evidence of barriers to implementing and maintaining BSCs in healthcare settings [9]. Experiences of BSC implementation in other sectors have indicated that even in the simplest projects, there is a diverse range of factors affecting BSC success, and poten-

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Table 1 Mean and Standard Deviation of Organizational Culture and Balanced Scorecard Effectiveness

Variables	Mean	SD
Organizational Culture	219.37	28.71
Involvement	53.07	8.44
Consistency	51.64	7.92
Adaptability	57.02	7.02
Mission	57.63	8.45
Balanced Scorecard Effectiveness	3.97	28.71

Table 2 Correlations of Organizational Culture with Balanced Scorecard Effectiveness

Variables	Correlations
Organizational Culture	0.38***
Involvement	0.44***
Consistency	0.27***
Adaptability	0.28***
Mission	0.35***

*** P < 0.001

tially leading to failure [10, 11]. Despite that, research into the factors influencing BSC success in health settings is limited. One factor frequently reported to influence effectiveness of modern performance evaluation systems (such as BSC) is organizational context [12]. Studies identified several contextual factors affecting goal achievement, including support from leadership, employee involvement, harmony between leaders and employees, positive attitudes toward interventions, and organizational culture [13, 14]. The last factor is of particular importance. Organizational culture (OC) is a comprehensive concept involving beliefs, traditions, norms, knowledge, and technology of an organization, thereby fundamentally affecting the behavior of members, and the organizational performance [15]. Culture is described as the soul of an organization and the source of its members' social energy that moves the organization forward [16]. Several studies showed that successful changes in the organization strongly depend on organizational culture [17]. The developers of BSC, Kaplan and Norton, introduced OC as a determinant of BSC effectiveness [18]. Garengo *et al*. indicated that adoption and use of performance evaluation systems are significantly influenced by organizational culture [18]. The field study of Deem *et al*. confirmed the positive relationship between BSC effectiveness and OC [18]. Chavan concluded that effective implementation of the BSC requires introducing fundamental changes in OC [19].

Exploring the impact of contextual factors in performance evaluation has received increasing attention in literature [20]. However, research on contextual factors influencing implementation of BSC in hospitals is limited. To help filling this gap, this study explored the relationship between organizational culture and BSC effectiveness in a sample health setting. Using the organizational culture framework proposed by Denison [21], our study sought evidence in support of the following five hypotheses:

Hypothesis 1- Organizational culture is positively associated with BSC effectiveness (H1).

Hypothesis 2- "Involvement" is positively associated with BSC effectiveness (H2).

Hypothesis 3- "Consistency" is positively associated with BSC effectiveness (H3).

Hypothesis 4- "Adaptability" is positively associated with BSC effectiveness (H4).

Hypothesis 5- "Mission" is positively associated with BSC effectiveness (H5).

Methods

Study Design and Settings

A descriptive analytical study of cross-sectional design was conducted within the period of August 2009 to June 2010. Hasheminejad Kidney Center was selected as the study setting because of using BSC for several years in the strategy implementation process. During the study period, there were 380 employees in the hospital. Using Morgan's table and cluster sampling, 150 personnel from different organizational levels were selected as the study group.

Data Collection Tool

The measurement tool included 62 items. The first two items asked about the effectiveness of BSC. The next 60 questions were the same questions as in the Denison's Organizational Culture Survey Instrument (OSCI) [21]. These items were related to four dimensions of organizational culture, including Involvement, Consistency, Adaptability, and Mission. The questionnaire quantified the answers using a five-point Likert scale ranging from 1 = "Complete Disagreement" to 5 = "Complete Agreement". The questionnaire validity was examined by seeking expert opinion. A high reliability of the scale was ensured by obtaining a Cronbach's alpha of 0.94.

Table 3 Multiple Regression of Organizational Culture Factors and Balanced Scorecard Effectiveness

Variables	Beta	t
Involvement	0.431	3.765***
Consistency	-0.108	-0.815
Adaptability	-0.075	-0.513
Mission	0.186	1.204
Constant		5.019***

*** P < 0.001

Statistical Analysis

The survey results were summarized using descriptive statistics. The relationship between BSC and OC was measured using Pearson's correlation coefficient and modeled using regression analysis.

Results

Survey Findings

Table 1 shows the mean scores of OC and its subscales and the average score of BSC. As seen, the highest OC score is received by Mission and the lowest score is obtained by Consistency.

Table 2 presents the correlations of OC dimensions with BSC. All correlations are significant at 0.01 level. The highest correlation is observed between Mission and BSC, and the lowest correlation with BSC is observed for Consistency.

Table 3 shows the results of multiple regression analysis between BSC as the dependent variable and dimensions of OC as independent variables. According to the results, H2 is supported as OC is positively associated with BSC (β = 0.431, P < 0.01). Regression analysis, however, does not provide evidence in support of the other hypotheses.

Discussion

The purpose of this study was to examine the influence of organizational culture on BSC effectiveness in the hospital. Significant correlations between OC traits and BSC effectiveness, in general indicated that the two constructs are interrelated. However, according to our results, when BSC effectiveness is considered as a function of multiple OC factors, Involvement is the only factor with significant influence. There is some evidence in the literature to support this observation. Kaplan and Norton, reported that in organizations that benefit from BSC-based performance evaluation systems, employees have strong attitudes toward organizational goals, and internalize missions, visions, and key values required for effective strategy implementation [22]. Chavan subjects BSC maturity to understanding, commitment, and support of the organization's members, and introduces them as the key players in BSC effectiveness. Therefore, hospital administrators should encourage employee involvement in order to achieve high BSC effectiveness [19].

Deem *et al*. (2009) [18] extensively explored the relationship between OC and BSC effectiveness, using Denison's OC model [21]. Their results showed that BSC effectiveness is positively influenced by all OC dimensions. Our finding provides evidence for the notion that at least in hospital settings, these factors are not equally important, with the highest impact related to employee involvement. While this finding is consistent with emphasis in literature [19, 22], larger-scale studies are required to reach a firm conclusion.

Conclusions

This study identified a positive correlation between all dimensions of organizational culture, including Involvement, Consistency, Adaptability, and Mission with the effectiveness of BSC. However, when BSC effectiveness is assumed as a function of multiple organizational culture factors, Involvement remains as the influencing factor. This suggests that employee involvement is of prime importance to realize the advantages of BSC-based strategy implementation in hospitals. Hence, hospital leadership can improve the effectiveness of BSC approach to strategic goal achievement by supporting employee involvement in organizational processes.

Abbreviations

(BSC): Balance Scorecard; (OC): Organizational Culture

Competing Interests

The authors declare no competing interests.

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