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# **An investigation of the role of Leadership in the implementation of TQM in Medical Sciences Universities of Iran.**

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## **ABSTRACT**

*In the developing countries, management is one of the big challenges in the running of academic organisations. Total Quality Management (TQM) is a management approach that aims for long term success.*

*Since the mid 1980s “quality” has been a major issue in higher educational institutions. Universities are under a lot of pressure from a range of stakeholders. After successful implementation of TQM in higher educational institutes in developed countries it is now the right time for implementation of TQM in developing countries. This paper aims to discuss the role of top management (leadership) in the successful implementation of TQM in Iranian Medical Sciences Universities (MSUs). The Baldrige quality model was chosen as the framework for the research. Two MSUs were identified and a questionnaire was delivered to different groups within the Universities. The relationships between the leadership category and other categories were identified. The findings indicated that top management (leadership) is highly related to the other categories and hence by improving this category there will be a positive impact on other categories. The results also revealed that the employees' opinions on the senior leaders in terms of the commitment, participation, and adoption of the TQM were low and needs to be addressed.*

*Key words: TQM, Baldrige model, leadership, Higher education, Iranian universities*

## **INTRODUCTION**

Total Quality Management (TQM) is a management approach that aims for long term success by focussing on continuous feedback for making improvements and is based on the participation of all members of an organization in improving processes. TQM is considered one of the most important methods adopted by managers in recent decades to make their organizations more sustainable, competitive and profitable. TQM may be applied to any type

of organization including educational organizations (Mosadeghrad, 2005, Rungtusanatham et al., 2005). Since the mid 1980s “quality” has been a major issue in higher educational institutions throughout the world. Universities are under a lot of pressure from a range of stakeholders. These pressures have been significantly increased in recent years. Despite these pressures, it has been argued, that TQM is not embraced by universities as much as industries and governments, particularly in developing countries (Partington & Brown, 1997; Aly & Akapovi, 2001). Meanwhile, in the past decade many European and American universities have successfully been involved in TQM implementation. Within developing countries, management is one of the big challenges in the running of an academic organisation; universities, colleges, schools, etc. (Mosadeghrad, 2005). After successful implementation of TQM in higher educational institutes in developed countries, it is now the right time for implementation of TQM in developing countries. Iran, as a developing country, has one century of history in terms of having higher education universities and has experienced the separation of medical sciences courses from the non-medical ones and established the new, so called, Medical Sciences Universities (MSUs) under the supervision of ministry of Health and Medical Education in 1985. The purpose of this paper is to examine the current state of the leadership category and its role in the TQM implementation in MSUs under the Baldrige model.

## **LITERATURE REVIEW**

The Baldrige model has become a successful template for most quality awards in many countries (Mackerron et al., 2003). This model is widely adopted by organizations as a means of self-assessment to enhance organizational performance.

The Malcolm Baldrige National Quality model (Baldrige model) in education has received much attention from higher education organizations in the past decade (Goldstein and Schweikhart, 2002; Evans and Jack, 2003; Arif and Smiley, 2004; Badri et al., 2006). The Baldrige model represents a comprehensive framework of seven categories that are used to evaluate an educational organization's performance. The categories cover (NIST 2008)

1. leadership;
2. strategic planning;
3. Students focus;
4. information and analysis;

5. Faculty and staff focus;
6. Educational and support process management; and

Organizational performance results. The Baldrige model places a strong emphasis on leadership. In the Baldrige model the leadership category has an important role and drives the system (Ford and Evans, 2000; Meyer and Collier, 2001; Belohlav *et al.*, 2004; Mosaddegh, 2005). In Baldrige model in education, senior leaders inspire and motivate the entire workforce and encourage all faculty and staff to contribute, develop and learn, be innovative, and be creative. The senior leaders are responsible ultimately to all stakeholders for the mission, ethics, vision, actions, values and performance of the organization. Senior leaders serve as role models through their ethical behavior and personal involvement in planning, communication, coaching, development of future leaders, reviewing of organizational performance, and faculty and staff recognition (Vora, 2002).

The seven categories in the Baldrige model are hypothesized to have a particular relationship to each other. Although the Baldrige criteria and framework are widely accepted in practice, there is surprisingly little theoretical and empirical evidence of their validity (Ford and Evans, 2000).

The findings in these studies provided statistical support for the Baldrige theory of performance relationships depicted in the Baldrige causal model.

## **RESEARCH METHODOLOGY**

### ***Research model***

Leadership is the key driver in Baldrige model. Without the involvement and commitment of senior leaders, the quality management journey becomes difficult and at times impossible (Vora, 2002). Category 1 of the Baldrige model evaluates top management leadership ability to instil quality values and to continuously improve their leadership styles. In higher education, senior leaders should inspire and motivate the entire workforce and should encourage all faculty and staff to contribute, develop and learn, be innovative, and be creative.

The Baldrige model, in general, places a strong emphasis on leadership. In developing countries such as Iran, it is a reality that senior leaders of educational organizations are the main decision makers.

### ***Questionnaire development and pilot test***

The seven Baldrige categories were operationalised through 48 questions on the questionnaire that captured the key elements in Baldrige model for higher education. Several steps were taken to ensure that the questionnaire used in this study provided a valid measurement of the Baldrige model for higher education. Additionally, the number of items for each category was determined so that the content of the each item was measured using a four-point Likert scale. Several university faculty and staff assisted with pre-testing the questionnaire and provided valuable feedback in terms of wording and the usefulness of the performance measures to be included in the questionnaire. This helped to establish content validity and give focus to the questionnaire on the Baldrige education criteria. A further fifteen individuals (including faculty, staff, and students) participated in a pilot test that was conducted to determine the reliability of the measurement scales. Some items were improved and the final questionnaire was constructed successfully.

### ***Study sample and response rate***

The prepared final questionnaires were distributed (emailed and handed out) to the respondents of two MSUs in Iran. These two universities have more than 1100 academic staff, 1000 non academic staff and 10000 students. A total number of 160 questionnaires were distributed to four groups of respondents including faculty, staff (non-academic), students, and senior managers. 149 usable questionnaires were returned (93%). The response rate was high indicating a good commitment of the respondents at this study. Overall the ratio of female and male answered and returned the questionnaire is 46:54.

The proportion of the respondents who received and returned the questionnaires is summarised in the Table 1.

Table 1: Proportion of the responds received questionnaires

	Faculty	Staff	Students	Managers	Total
Quantity	45	42	47	15	149
Percent	30	28	32	10	100

### ***Research hypotheses***

The research hypotheses provided a comprehensive evaluation of the theory and performance relationships proposed in the Baldrige (NIST, 2008). These hypotheses addressed specific causal relationships among the seven Baldrige categories. The independent factor in the model was leadership. The dependent factors were strategic planning; Students focus; information and analysis; Faculty and staff focus; Educational and support process management; and Organizational performance results.

Two research hypotheses were formulated to test directional relationships between leadership and the six categories and difference between male and female responses. The first hypothesis was H1: Leadership has a positive influence on strategic planning, students focus, information and analysis, faculty and staff focus, educational and support process management, and organizational performance results. The second one was H2: Male respondents' views are different from female respondents.

### ***Analysis methods***

To test hypotheses *H1* and *H2* two different procedures were used. The spearman correlation coefficient was used to examine the relationship between the leadership and the other Baldrige categories. A t-test was conducted to investigate the hypothesized difference in views of male and female respondents on the seven categories of Baldrige TQM model.

## **FINDINGS**

### *Scale reliabilities*

The reliability of each of the 48 item (seven categories) used in this study was re-evaluated based on the main study data set. Cronbach's alpha values for the 48 items ranged from 0.69 to 0.85, exceeding guidelines for adequate reliability (Nunnally, 1967; Hair et al.1998; Meyer and Collier, 2001), as shown in Table 2. The values were well above the minimum recommended value of 0.60.

Table 2: Seven categories variables (48 questions) Cronbach's alpha results

No of category	Category description	Questions	Reliability
1	Leadership	1+2+3+4+5+6+7	0.69
2	Strategic Planning	8+9+10+11+12+13	0.80
3	Students	14+15+16+17+18	0.78
4	Information and Analysis	19+20+21+22+23+24+25	0.75
5	Faculty and Staff	26+27+28+29+30+31+32+33	0.84
6	Educational and Support process Management	34+35+36+37+38+	0.73
7	Organizational performance results	39+40+41+42+43+44+45+46+47+48	0.83

### *The relationship between leadership on other categories*

The hypothesis H1 (Leadership has a positive influence on strategic planning, students focus, information and analysis, faculty and staff focus, educational and support process management, and organizational performance results) was formulated to test the directional relationships between leadership and the six categories and difference between male and female responses.

The Baldrige model for education framework assumes that a direct relationship exists between leadership and the six categories of measurement. The results of Spearman's correlation of Leadership with Strategic planning (SP), Students focus (S), Information and Analysis (IA), Faculty and Staff focus (F&S), Educational and support process management (EM), and Organizational performance results (OR) categories are 0.613, 0.572, 0.630, 0.678, 0.642, and 0.645 respectively. The correlation coefficient over 0.60 is considered to be significant. In this analysis, the leadership category has the highest correlation with the F&S which implies that with improving the leadership, the Faculty & Staff category will improve. Overall the leadership was highly correlated with other categories and hence by improving this category there will be a positive impact on other categories (Table 3).

Table 3: Spearman's correlation results for leadership category

	L	SP	Student	IA	F&S	EM	OR	
Spearman's rho	Correlation Coefficient	1.000	.613(**)	.572(**)	.630(**)	.678(**)	.642(**)	.645(**)
	Sig. (1-tailed)	.	.000	.000	.000	.000	.000	.000
	N	74	74	74	74	74	74	74

\*\* Correlation is significant at the 0.01 level (1-tailed).

*Differences between genders of respondents*

A t-test was conducted to investigate the hypothesized difference in views of male and female respondents on the leadership category of Baldrige TQM model. The hypothesis that “Male respondents’ views are different from female respondents” was not substantiated (Table 4).

To show this, Mean scores of Male respondents in all seven categories was compared with the mean scores of female at the same categories. The difference was not significant in all categories because of higher p values (all p values were more greater than 0.05).

Table 4: t-Test analysis between Male and female respondents

Category	gender	Mean	Std. Deviation	P Value
leadership	Male	45.6301	11.31105	0.834
	Female	43.9394	11.99405	
Strategic planning	Male	45.6301	13.43552	0.577
	Female	43.9394	12.24084	
Students	Male	43.2927	10.40491	0.371
	Female	43.2927	13.81356	
Information and Analysis	Male	44.6864	11.24070	0.768
	Female	45.4545	10.87208	
Faculty & Staff	Male	49.0854	14.69488	0.806
	Female	48.2955	12.33017	

Educational Management	Male	49.0244	13.56556	0.412
	Female	46.5152	12.27834	
Organizational Results	Male	43.4756	11.96189	0.644
	Female	42.2727	9.88930	

Therefore, it showed that there is no difference in their levels of views on Baldrige TQM model by male and female respondents.

### ***Leadership Mean score***

Using a four point Likert scale and converting the scores as fractions of 100, the Mean scores of seven questions (items) for leadership category are summarised in Table 5.

Table 5 The Mean score of leadership category's statements

NO	Item	Mean %	Std. Dev.
1	The senior leaders improve the managerial system at the university.	52.51	8.9
2	The senior leaders create a safe atmosphere for all stakeholders to learn, participate and improve.	52.29	11.3
3	The senior leaders abide by the values defined in the Strategic Planning which gives commitment to improvement of faculty, staff, students and other stakeholders.	49.96	9.4
4	The senior leaders have been elected among the most active staff to run	52.56	8.9

	quality initiatives.		
5	The university has the financial (allocated budget) and human (staff, etc) resources for quality programmes.	52.22	10.3
6	The university has measuring tools to evaluate faculty, staff, students and other stakeholders' performances.	54.18	12.1
7	The senior leaders consider the faculty, staff, students and other stakeholders' views in the evaluation.	47.46	9.8
	Total	49.61	11.5

Table 5 shows that the extent and degree of Leadership in MSUs. Statement 6 achieved the highest mean of 54.18 which indicates the measuring tools are available to evaluate the faculty, staff, and students. Meanwhile, statement 7, with the lowest mean of 47.46, revealed that the views of the university's main stakeholders (faculty, staff, and students) are not highly welcomed by the senior leaders in the evaluation. The overall mean of 49.61 indicated that the respondents did not highly agree to the statement in relation with the leadership towards the TQM program.

## DISCUSSION AND IMPLICATION

The major finding of this research related to the role of leadership in the Baldrige Education Criteria. Leadership has a direct causal influence on each of the components of the Baldrige System: strategic planning, students focus, information and analysis, faculty and staff focus, educational and support process management, and organizational performance results. Leadership causes direct positive changes in each of the Baldrige System categories. This result confirmed Baldrige theory that leadership drives the system which corresponds with previous research (see Meyer and Collier, 2001; Belohlav *et al.*, 2004; Ford and Evans, 2000; Goldstein and Schweikhart, 2002). Moreover, this study shows that leadership was the most important enabler for achieving educational performance in the MSUs. Effective leadership is therefore a key driver in the move to performance excellence in universities and colleges. Senior leaders have a significant influence on and the ability to make changes to the

educational system. This research also showed evidence of an important causal relationship between leadership and faculty and staff focus. The influence of leadership on this category is (0.678), which was relatively stronger than leadership's influence on the other categories.

There is a traditional view in Iranian society regarding the role of women. This states that women would be better carrying out the child-caring and housekeeping responsibilities and have less contact with men. Moreover, the Iranian culture sees the male in the social structure as financial suppliers to the household. Hence, it is postulated that in some areas the views of male and female are different from each other. But this study showed that there is no difference in their levels of views on Baldrige TQM model by male and female respondents.

## **CONCLUSION**

The research empirically tested the Baldrige education framework – that there is a significant relationship between the leadership and the six other categories of Baldrige model.

The research design is seen as a reliable and valid self-assessment tool for MSUs based mainly on the Baldrige Education Criteria for Performance Excellence.

The results provide insights for higher education leaders into the dominant role leadership plays in effective implementation of quality management systems.

This research also showed that there is no difference in their levels of views on Baldrige TQM model by male and female respondents.

## **REFERENCES**

Aly, N. and Akapovi, J. 2001, "Total quality management in California public higher education", *Quality Assurance in Education*, Vol 9No 3, pp.127-131.

Arif, M., Smiley, F. 2004, "Baldrige theory in practice: a working model", *International Journal of Educational Management*, Vol. 18 No.5, pp. 324-8.

Badri M.A, Selim H., Alshare K., Grandon E.E., Younis H., Abdulla M. 2006, "The Baldrige Education Criteria for Performance Excellence Framework; Empirical test and validation", *International Journal of Quality & Reliability Management*; Vol. 23, No. 9, pp.1118-1157.

Belohlav, J., Cook, L., Heiser, D. 2004, "Using the Malcolm Baldrige National Quality Award in teaching: one criterion, several perspectives", *Decision Sciences Journal of Innovation Education*, Vol. 2 No.2, pp. 153-76.

Evans, J.R., Jack, E.P. 2003, "Validating key results linkages in the Baldrige performance excellence model", *Quality Management Journal*, Vol. 10 No.2, pp. 7-24.

Ford, M., Evans, J. 2000, "Conceptual foundations of strategic planning in the Malcolm Baldrige criteria for performance excellence", *Quality Management Journal*, Vol. 7 No.1, pp. 8-26.

Goldstein, S., Schweikhart, S. 2002, "Empirical support for the Baldrige Award Framework in US hospitals", *Health Care Management Review*, Vol. 27 No.1, pp. 62-75.

Hair, F.J., Anderson, R. E., Tatham, R. L., and Black, W. C. 1998 *Multivariate Data Analysis*. (5<sup>th</sup> edn.) USA: Prentice-Hall International.

Mackerron, G., Masson, R., McGlynn, M. 2003, "Self assessment: use at operational level to promote continuous improvement", *Production Planning & Control*, Vol. 14 No.1, pp. 82-9.

Meyer, S., Collier, D. 2001, "An empirical test of the causal relationships in the Baldrige Health Care Pilot Criteria", *Journal of Operations Management*, Vol. 19 No.4, pp. 403-25.

Mosadeghrad, A.M. 2005, "A survey of total quality management in Iran", *Leadership in health service*, Vol. 18, No. 3, pp. 12-34.

NIST 2008, *Malcolm Baldrige National Quality Award Criteria*. U. S. Department of Commerce. National Institute of Standards and Technology,

Nunnally, J.C. 1967, *Psychometric Theory*, McGraw-Hill, New York, NY,

Partington, P. and Brown, G. 1997, "Quality assessment, staff development and cultural change", *Quality Assurance in Education*, Vol 5 No 4, pp. 208-217.

Rungtusanatham, M., For a, C., Koka, B.R., Salvador, F. and Nie, W. (2005), "TQM across multiple countries: Convergence hypothesis versus national specificity arguments", *Journal of Operations Management*, Vol 23 No 1, pp. 43-63.

Vora, M. 2002, "Business excellence through quality management", *Total Quality Management*, Vol. 13 No.8, pp. 1151-9.