

The Relationship Between Strategic Thinking and Hospital Managers' Productivity in Teaching Hospitals of Shiraz

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Abstract

Background: Using different methods of strategic thinking is essential for organizations such as hospitals; without them, many organizations will not survive. The aim of the present study is to evaluate the relationship between strategic thinking and management productivity in teaching hospitals of Shiraz.

Objectives: Because of the importance of strategic management in organizational productivity, the present study is conducted with the goal of assessing the relationship between strategic thinking and hospital managers' productivity.

Patients and Methods: This descriptive-correlational study was conducted in 2015. The statistical population included all managers in different levels in the teaching hospitals of Shiraz (170 persons). Among these, 119 participants were selected through Cochran's formula and a simple random sampling method. Data were collected by a questionnaire addressing strategic thinking based on Liedtka's model and Hersey and Blanchard's theory. Its validity was verified by a panel of experts and its reliability was measured in previous studies. Data analysis was performed in SPSS version 20 using descriptive and analytic statistics (analysis of variance (ANOVA), Pearson's correlation test and t-test).

Results: The average and Standard Deviation of strategic thinking managers was (2.2 ± 0.04), and productivity of management (2.32 ± 0.37) was estimated on the average level. There was a direct meaningful relationship between strategically thinking managers and productivity ($r = 0.387$, $P < 0.001$). The results also showed that there is a meaningful correlation between strategic thinking and sustainability, organizational support and understanding of the job.

Conclusions: Due to the correlation between strategic thinking and productivity, we recommend educating and training managers in the use of strategic thinking, and that they understand its importance to productivity. Managers should understand that increasing efficiency in a competitive environment today is a necessity for survival.

Keywords: Strategic, Efficiency, Administrators, Shiraz, Iran

1. Background

Management science has been paying close attention to evolution and change in the recent century (1). Organizations are obligated to adapt to these evolutions (2-5). An organization that is not in line with changes is at risk of failing (6). Managers must keep up with and stay coordinated with the evolving goals of the organization, and when an organization faces problems, old solutions are not functional anymore (7). The ability to use strategic thinking through different stages is required of managers (8). Strategic thinking is a process through which a manager learns how to define his business view by applying teamwork, critical thinking and continuous improvement. Strategic thinking is a tool that helps managers face the evolutions and accept new opportuni-

ties by adapting. This major issue is one of the two most important abilities a brilliant manager should have (5). By applying strategic thinking, managers can separate themselves from daily management crises and obtain different views towards the organization and its variable environment (9). Strategic thinking is the most important step for managers to prevent shortages and survive growth and changes (8), and it is also a necessary skill for managers' functional improvement (10). Nowadays, with the challenges existing in organizations' environments, conducting strategic management education in organizations such as hospitals seems necessary more than ever, and without paying attention to that, an organization's survival is threatened. Therefore, applying

various strategic thinking methods is a focal point, because organizations that cannot incorporate strategic thinking cannot improve (1). Hospitals that have strategic thinking variables are at an advantage over hospitals that do not. In one of the previous studies, enhanced productivity and strategic management are defined as two successful tools in a competitive environment (11). One of the most important management priorities is improving organizational functions by enhancing productivity (12) in the form of employing human, physical-financial and information resources to provide services, and hospitals are not exceptions to this policy (12-14). Due to hospitals gain 50 to 80% of the health expenses to themselves, their productivity is important (15, 16). Enhancing productivity can lead to better health care and treatment among the populations served (12).

In our country, there is little research conducted in this field, and this is considered a limiting factor. There is still a long way to go toward institutionalizing strategic thinking as a management necessity among organizations.

2. Objectives

Due to the low number of similar studies in Iran, especially in the health care sector, and because of the importance of strategic management in organizational productivity, especially hospitals, the present study is conducted with a goal of assessing the relationship between strategic thinking and hospital managers' productivity in teaching hospitals of Shiraz.

3. Patients and Methods

The present study was a descriptive-correlation study conducted in 2015. Data was collected from managers at all levels (bottom, middle and top) in different stages, including hospital head and manager, nursing manager, head of office affairs, head of financial affairs, head of health information affairs, technical principal, educational supervisor, clinical supervisor, infection control supervisor and head nurse in all teaching hospitals of Shiraz, Iran (ten hospitals). In total, 170 individuals were involved. Inclusion criteria were that they were managers and were willing to participate in the study. To gather data, a demographic questionnaire (age, education, work experience and university field) was used, as well as a questionnaire to evaluate strategic thinking based on Liedtka's model (17) in five fields of strategic thinking (1-6), strategic determination (7-14), leading based on scientific approach (15-17), intelligent opportunism (18-24) and thinking in time (25-28). Questionnaire scoring was based on the Likert scale with a continuum of score one (the least) and score five (the most). Content and appearance validity of the questionnaire were evaluated by an expert panel and its reliability was confirmed in previous studies ($\alpha = 87.3$). The productivity questionnaire was based on Hersey and Blanchard's model (19-21) and had 7 fields: ability (1-4, 10, 21-30), understand job (5-7, 28), or-

ganizational support (8-10, 20, 26, 27), motivation (11-13, 22, 23, 29) performance feedback (14, 15, 18, 25) and environmental adaptation (10, 17, 19, 30). For this, content and appearance validity were confirmed by an expert panel and its Cronbach's was reported by Torani and Milajerdi as equal with 0.91 (22). Eventually, data was entered into SPSS version 20 and analyzed using descriptive statistics (frequency, frequency percentage, mean and SD), the Kolmogorov-Smirnov test, independent t-test, one-way analysis of variance (ANOVA) and Pearson's correlation test.

4. Results

Of the total questionnaires distributed, 119 questionnaires were returned (response rate 70%). The demographic data of the participants is shown in Table 1.

Statistical analysis shows that among the participants, 11 persons (9.2%) were younger than 30 years, 38 persons (31.9%) were between 31 and 40 years old and 70 persons (58.8%) were older than 41 years. Concerning education among participants, 81 people (68.1%) had bachelor's degrees and 38 people (31.9%) had master's degrees. In the category of job experience, 88 persons (74%) had worked between 1 and 10 years, 23 persons (19.4%) between 11 and 20 years and 8 persons (6.7%) between 21 and 30 years. Additionally, 14 persons (11.8%) among the respondents were from the field of management, 55 persons (46.2%) were from nursing, 11 persons (9.2%) were from the field related to finance and 39 persons (32.8%) were from other fields of study.

Table 1. Demographic Characteristics^a

| Variable | Values |
|--------------------------|-----------|
| Age, y | |
| Lower than 30 | 11 (9.2) |
| 31 - 40 | 38 (31.9) |
| Higher than 41 | 70 (58.8) |
| Total | 119 (100) |
| Education level | |
| Bachelor's degree | 81 (68.1) |
| Master's degree | 38 (31.9) |
| Total | 119 (100) |
| Job experience, y | |
| 1 - 10 | 88 (74) |
| 11 - 20 | 23 (19.4) |
| 21 - 30 | 8 (6.7) |
| Total | 119 (100) |
| Field work | |
| Management | 14 (11.8) |
| Nursing | 55 (46.2) |
| Related to finance | 11 (9.2) |
| Other fields | 39 (32.8) |
| Total | 119 (100) |

^aData are presented as No. (%).

The average and standard deviations of the strategic thinking of managers was (2.20 ± 0.40), and average and standard deviations of managers' productivity was (2.32 ± 0.37).

Based on the independent t-test, the average score for strategic thinking in managers in terms of education in both systems thinking and progress based on the scientific approach showed a significant difference ($P < 0.05$), and the total average of strategic thinking in undergraduate education was more than in the rest of the education groups. Based on ANOVA, the average score of strategic thinking in all aspects in managers in terms of age, except systems thinking, showed a statistically significant difference ($P < 0.05$) (average of strategic thinking in the age group 31 to 40 years was more than in the rest of the age groups). The average score of strategic thinking in terms of work experience was statistically significant ($P < 0.05$) only in clever opportunism and thinking in time. The mean score of strategic thinking in managers in the field of study was significant in all dimensions ($P < 0.05$) except in the strategic determination that this difference was not significant (Table 2).

Based on the independent t-test, the average of efficiency in the managers in terms of education in any dimension was not a significant difference ($P > 0.05$). According to the ANOVA statistical test, the average score of productivity based on age in all aspects of efficiency, except performance feedback, was significant ($P > 0.05$), but with the average total showed no relationship. According to ANOVA, the average score of efficiency in the managers based on management work experience in all aspects except environmental compatibility was statistically significant ($P < 0.05$), so efficiency in people with more management work experience was higher. The average score of efficiency in managers based on education in all aspects except for organizational support and performance feedback was significant ($P < 0.05$), but did not show a statistically significant association with total average (Table 3).

Based on Pearson's correlation test, there was a direct significant relationship between strategic thinking and productivity ($P < 0.001$, $r = 0.387$). The results showed a significant relationship between strategic thinking and environmental compatibility, organizational support and understanding of the profession (Table 4).

Table 2. Average and Standard Deviation in Different Dimensions of Strategic Thinking in Managers of Teaching Hospitals^a

| Variable | Thinking in Time | Clever Opportunism | Scientific Approach | Strategic Determination | Systems Thinking | Total |
|--------------------------------------|------------------|--------------------|---------------------|-------------------------|------------------|-----------------|
| Education | | | | | | |
| Bachelor's | 2.18 ± 0.50 | 2.16 ± 0.50 | 2.33 ± 1.02 | 2.03 ± 0.70 | 2.75 ± 1.35 | 2.28 ± 0.43 |
| Master's | 2.06 ± 0.41 | 2.18 ± 0.63 | 1.90 ± 0.40 | 1.88 ± 0.34 | 2.00 ± 0.20 | 2.01 ± 0.25 |
| P Value | 0.26 | 0.90 | 17.22 | 0.30 | 0.004 | 0.002 |
| F | 0.17 | 5.84 | 0.01 | 10.17 | 16.6 | 1.921 |
| Age | | | | | | |
| 20 - 30 | 2.13 ± 0.31 | 2.43 ± 0.064 | 1.51 ± 0.43 | 1.22 ± 0.71 | 3.33 ± 0.00 | 2.14 ± 0.24 |
| 31 - 40 | 2.24 ± 0.50 | 2.33 ± 0.58 | 2.41 ± 0.65 | 2.18 ± 0.43 | 2.60 ± 0.52 | 2.33 ± 0.37 |
| 41 - 50 | 2.10 ± 0.47 | 2.03 ± 0.51 | 2.18 ± 0.99 | 1.98 ± 0.61 | 2.38 ± 1.52 | 2.14 ± 0.43 |
| P Value | 0.029 | 0.004 | 0.013 | 0.001 | 0.052 | 0.076 |
| F | 1.25 | 5.72 | 4.50 | 11.20 | 3.038 | 2.4 |
| Work experience in management | | | | | | |
| 1 - 10 | 2.17 ± 0.42 | 2.17 ± 0.44 | 2.08 ± 0.65 | 1.92 ± 0.61 | 2.45 ± 0.66 | 2.14 ± 0.30 |
| 11 - 20 | 1.82 ± 0.50 | 1.73 ± 0.38 | 2.40 ± 1.44 | 2.02 ± 0.67 | 3.02 ± 2.46 | 2.22 ± 0.58 |
| 21 - 30 | 2.00 ± 0.07 | 2.03 ± 0.51 | 1.66 ± 0.00 | 1.75 ± 0.00 | 2.38 ± 1.52 | 2.14 ± 0.43 |
| P Value | < 0.007 | 0.001 < | 0.102 | 0.55 | 0.06 | 0.44 |
| F | 5.24 | 4.59 | 2.345 | 0.60 | 8 3.4 | 0.58 |
| Field of study | | | | | | |
| Management | 2.13 ± 0.45 | 2.40 ± 0.48 | 2.00 ± 0.52 | 2.00 ± 0.41 | 3.91 ± 0.47 | 2.51 ± 0.33 |
| Nursing | 1.95 ± 0.42 | 1.96 ± 0.58 | 2.15 ± 0.92 | 2.11 ± 0.63 | 1.93 ± 0.66 | 2.02 ± 0.3 |
| Financial | 2.40 ± 0.66 | 2.09 ± 0.20 | 3.03 ± 0.91 | 1.88 ± 0.44 | 2.52 ± 0.47 | 2.27 ± 0.40 |
| Other | 2.34 ± 0.38 | 2.36 ± 0.45 | 2.06 ± 0.83 | 1.82 ± 0.67 | 2.77 ± 0.53 | 2.26 ± 0.38 |
| P Value | < 0.001 | 0.001 | 0.008 | 0.14 | < 0.001 | < 0.01 |
| F | 7.20 | 5.65 | 4.10 | 1.84 | 14.25 | 6.70 |

^aData are presented as mean \pm SD.

Table 3. Average and Standard Deviation in Different Dimensions of Productivity in Managers of Teaching Hospitals^a

| Variable | Environmental Compatibility | Credibility | Performance Feedback | Motivation | Organizational Support | Understand Job | Ability | Total |
|--------------------------------------|-----------------------------|-------------|----------------------|-------------|------------------------|----------------|-------------|-------------|
| Education | | | | | | | | |
| Bachelor | 2.41 ± 0.73 | 2.71 ± 1.47 | 2.11 ± 0.67 | 2.44 ± 0.67 | 2.45 ± 0.74 | 2.25 ± 0.52 | 2.21 ± 0.51 | 2.36 ± 0.39 |
| Master | 2.07 ± 0.73 | 2.05 ± 0.77 | 2.07 ± 0.64 | 2.63 ± 0.35 | 2.08 ± 0.35 | 2.08 ± 0.48 | 2.14 ± 0.52 | 2.21 ± 0.27 |
| P Value | 0.04 | 0.07 | 0.11 | < 0.001 | < 0.001 | 0.56 | 0.21 | 0.06 |
| F | 4.331 | 3.190 | 2.567 | 17.655 | 17.640 | 0.366 | 1.538 | 3.609 |
| Age | | | | | | | | |
| 20 -30 | 2.84 ± 0.35 | 5.68 ± 1.82 | 2.50 ± 0.33 | 2.25 ± 0.25 | 1.88 ± 0.15 | 1.84 ± 0.23 | 1.51 ± 0.43 | 2.35 ± 0.39 |
| 31 -40 | 2.45 ± 0.81 | 2.41 ± 0.50 | 1.97 ± 0.59 | 2.68 ± 0.40 | 2.61 ± 0.68 | 2.20 ± 0.56 | 2.32 ± 0.34 | 2.44 ± 0.29 |
| 41 -50 | 2.14 ± 0.71 | 2.05 ± 0.75 | 2.10 ± 0.71 | 2.45 ± 0.68 | 2.23 ± 0.64 | 2.26 ± 0.51 | 2.23 ± 0.52 | 2.24 ± 0.42 |
| P Value | 0.005 | < 0.001 | 0.07 | 0.05 | 0.001 | 0.04 | < 0.001 | 0.05 |
| F | 5.570 | 88.24 | 2.705 | 3.72 | 7.00 | 3.311 | 13.54 | 2.95 |
| Work experience in management | | | | | | | | |
| 1 -10 | 2.36 ± 0.80 | 2.76 ± 1.42 | 2.19 ± 0.60 | 2.61 ± 0.42 | 2.37 ± 0.55 | 2.29 ± 0.53 | 2.26 ± 0.55 | 2.41 ± 0.30 |
| 11 -20 | 2.05 ± 0.71 | 1.90 ± 0.85 | 1.92 ± 0.72 | 1.80 ± 0.81 | 1.90 ± 0.86 | 1.91 ± 0.50 | 2.01 ± 0.38 | 1.95 ± 0.46 |
| 21 -30 | 2.00 ± 0.00 | 1.00 ± 0.00 | 1.25 ± 0.00 | 2.66 ± 0.00 | 2.16 ± 0.00 | 2.5 ± 0.00 | 1.83 ± 0.00 | 2.03 ± 0.00 |
| P Value | 0.14 | < 0.001 | < 0.001 | < 0.001 | 0.01 | 0.005 | 0.02 | < 0.001 |
| F | 1.96 | 9.37 | 9.43 | 19.52 | 4.53 | 5.63 | 4.02 | 14.96 |
| Field of study | | | | | | | | |
| Management | 2.17 ± 1.13 | 2.82 ± 0.46 | 2.07 ± 0.73 | 1.92 ± 0.61 | 2.56 ± 0.50 | 2.35 ± 0.28 | 2.22 ± 0.46 | 2.31 ± 0.31 |
| Nursing | 2.08 ± 0.72 | 1.95 ± 0.76 | 2.07 ± 0.75 | 2.53 ± 0.62 | 2.35 ± 0.75 | 2.07 ± 0.49 | 2.21 ± 0.48 | 2.22 ± 0.46 |
| Financial | 1.97 ± 0.39 | 2.18 ± 0.46 | 2.22 ± 0.39 | 2.90 ± 0.49 | 2.36 ± 0.37 | 2.75 ± 0.62 | 2.24 ± 0.45 | 2.41 ± 0.30 |
| Other | 2.75 ± 0.45 | 3.25 ± 1.84 | 2.10 ± 0.56 | 2.57 ± 0.39 | 2.22 ± 0.63 | 2.18 ± 0.48 | 2.13 ± 0.63 | 2.43 ± 0.18 |
| P Value | < 0.001 | < 0.001 | 0.92 | < 0.001 | 0.52 | 0.001 | 0.886 | 0.82 |
| F | 8.39 | 9.38 | 0.16 | 7.55 | 0.76 | 6.38 | 0.214 | 2.30 |

^aData are presented as mean ± SD.**Table 4.** Correlation Between Strategic Thinking and Dimensions of Productivity

| Variable | Understand Job | Organizational Support | Motivation | Performance Feedback | Credibility | Environmental Compatibility | Ability |
|---------------------------|----------------|------------------------|------------|----------------------|-------------|-----------------------------|---------|
| Strategic thinking | | | | | | | |
| P Value | < 0.001 | < 0.001 | 0.06 | 0.61 | 0.75 | 0.025 | 0.36 |
| R | 0.590 | 0.530 | 0.184 | 0.051 | 0.031 | 0.221 | 0.093 |

5. Discussion

As mentioned, the challenges existing in organizational environments nowadays require strategic management, and this is necessary for hospitals now more than ever before. Without applying strategic approaches, some organizations cannot even continue their tasks (10). In our country, little research has been conducted in the field of assessing the relationship between strategic thinking and organizational productivity in hospitals. Therefore,

there is still much effort needed toward institutionalizing strategic thinking as a necessity in management.

The results of this study demonstrated that the mean score of strategic thinking and productivity among managers in different stages was in the middle range. Greater participation of middle managers in the planning process of strategic management on the one hand leads to increased creativity and enriched options for the organi-

zation, and on the other hand enhances their capacity to understand and analyze environmental data collected. Because of the possibility of taking advantage of a richer set of data, these skills should be fostered (23). Parvzian in his own research stated that productivity enhancement and strategic management are two successful tools in the competitive environment of organizations (24). Our findings also confirm these results.

In different age groups, all strategic thinking variables were significantly meaningful except the systemic thinking variable, which was not. In the work experience field, just strategic determination was not significantly meaningful. Kargin et al. concluded in their study that there is not a meaningful correlation between strategic thinking and age, work experience and education (25). In the present study, by increasing age, the mean score for strategic thinking of managers was also enhanced. Therefore, by obtaining experience and more awareness or changing individuals' attitudes towards an organization, strategic thinking could be reinforced among staff.

As the results indicate, individuals who studied management had a better competency in strategic thinking compared to others, which can be related to education in management at a university. In demographic information and its relationship to productivity, the present study demonstrated that by increasing work experience, managers' productivity would be enhanced too. In the study addressing the correlation between demographic information and productivity or job burnout that Kohnavard et al. have conducted, there was a meaningful relationship between depersonalization and productivity based on participants' education. Individuals with master's or higher degrees had more productivity, which is not in line with our study results (26).

Nasripour et al. evaluated the correlation between organizational culture and staff productivity; that study demonstrated that there is a meaningful relationship between these two factors, and the highest mean score of staff productivity was related to participants' ability. In the present study, motivation had the highest mean score and feedback ability the lowest (27).

In the study conducted by Lich et al. among staff managers, strategic thinking evaluated in a good range, which is different from our results. Their results also demonstrated that systemic thinking and intelligent opportunism had the least function in organizations (16). In the present study, systemic thinking had the highest mean score, this seems to be due to the systematic nature of systems thinking in organizations which has been enhanced. A case-control study by Juan et al. determined that a group that received instruction in strategic thinking was more capable of systemic decision making. It also concluded that strategic thinking is a key factor in an organization's success in a competitive environment (28). Tahara et al. showed that strategic thinking improves patient satisfaction and clinical outcomes and reduces underuse and overuse of medical services (29). Shirey and Hites' study concerning

busywork offers strategies for shifting to focused, strategic work. A useful energy preservation framework is introduced to promote vitality that drives engagement, productivity and innovation (30). Clark et al. suggest the need to move beyond generic strategies alone and acknowledge the importance of underlying managerial capabilities. Specifically, Theyfindings that effective strategy is a function of both the internal resources (e.g., managers' systems-thinking capability) and structural positions (e.g., partnerships) of organizations (10).

According to the results of the present study, it was determined that there is a meaningful relationship between strategic thinking and productivity, strategic thinking and environmental adaptation factors, and organizational support and career cognition. This means that if an organization gets acquainted with the strategic principles of management, has the skill to adapt to its environment, gets acquainted with career cognition and has the spirit of organizational support, it can enhance its productivity. It is recommended that organizational managers get acquainted with strategic thinking tools in order to enhance their productivity in a competitive environment.

This study can be useful to health managers and health policy makers for making decisions in their own organizations and promoting the relationship between strategic thinking and efficiency among hospital managers. One of the weaknesses of this study was the lack of time for managers to answer the questionnaire and constraints on time to do research. Therefore, it is recommended that organizations teach different levels of managers in the field to stress the importance of strategic thinking, in efforts to move toward productivity.

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Footnotes

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Authors' Contribution:Mohammad Zakaria Kiaei and Nahid Hatam developed the conceptualization and design of the study. Shirin Ghanavati collected the data. Reza Moradi analyzed and interpreted the data. Both Mahdieh Sadat Ahmadzadeh and Mina Moraveji cooperated in writing and editing of the patients and methods, results and discussion sections of the manuscript.

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