Investigating the Relationship between Intellectual Capital and Organizational Intelligence among Nurses Working in Ayatollah Rouhani Hospital in Babol in 2017

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Abstract

Objective: To determine the relationship between intellectual capital and organizational intelligence among nurses working in Babol Ayatollah Rouhani Hospital in 2017 in order to gain an understanding of the status of these variables and their relationship with each other in the population under study.

Methodology: The research is objective in terms of its purpose and it is descriptive-analytical survey type. The population included 713 people in 2017 in all faculty members and staff members of the Babol University of Medical Sciences. The research was carried out based on the collected data from 254 members of the community and the method of sampling was simple random method and using Cochrane's formula, the number of sample groups was selected. Data were collected using standard questionnaires and analyzed by SPSS software. Kolmogorov-Smirnov test, one-sample t-test, Pearson correlation test and Friedman test were used to test the hypotheses.

Results: The results of one-sample t-test showed that according to mean values, standard deviation, t-value and probability value, the zero hypotheses were rejected for all variables of research, such as intellectual capital management, organizational intelligence and its components. Therefore, the status of these variables is desirable. Findings of the research showed that there is a significant positive relationship between the management of intellectual capital and organizational intelligence and its components from the viewpoint of faculty members and staff members of Babol University of Medical Sciences.

Conclusion: According to the results, in order to improve the status of organizational intelligence and its components through the management of intellectual capital, practical suggestions are presented.

Key words: Intellectual Capital Management, Intelligence, Organizational Intelligence.

Introduction

Intellectual capital is a concept that has been strongly emphasized in today's knowledge economy. Intellectual capital is one of the main factors in increasing productivity and long-term profitability in a knowledge-based economy, and many organizations and corporations consider their superiority to be more intangible assets than tangible assets [1]. Most research has acknowledged that intellectual capital plays a key role in creating competitive advantage as well as in creating value, and intellectual capital (in general, the sum of capabilities, values, knowledge, cultures, strategies, processes, intellectual resources and communication networks) are the basis of the competitive advantage of the organization and the catalyst for achieving organizational goals [2]. Today, organizations, and universities in particular, have many differences from past organizations due to the nature of the era they live in. The prominent feature of 21st Century organizations is accountability, self-regulation, risk tolerance and instability. Organizational intelligence is an important issue with developmental and organizational behavioral experts and is the key to empowering subordinate forces in vital activities and processes governing organizational life [3]. Today, with full confidence, it can be argued that identifying and using organizational intelligence can increase the competitiveness of an organization and distinguish it from other organizations [4]. The necessity of reviewing organizational intelligence is currently responding to current requirements and the need of managers. Organizations, using organizational intelligence, have increased the effectiveness of using existing information structures in line with their goals, and the information has been developed from operational and restricted to use in the organizational layers for use by managers [5]. Given that managers work in organizations that are affected by their internal and external environment, they need learning power to respond to their problems, such as people. Therefore, the issue of organizational intelligence can help managers in this matter and enable them to meet their needs and problems and timely response to environmental changes, according to their organizational memory. Therefore, managers need organizational intelligence to advance their organizational goals and achieve them so that they can improve their performance [6]. Regarding the components of organizational intelligence, one can briefly say: **Strategic perspective:** Each organization requires a theory, a concept, an organizing principle, or a definition of what is to be sought and satisfied [7]. **Common fate:** All people in an organization, including stakeholders, such as suppliers and partners, and sometimes family members of an organization, need to know what their mission is. **The desire to change:** change, expresses challenges, is a place for new experiences, exciting, and a chance to achieve something new [8]. **Courage:** Daring and courage involves consenting to do something beyond the established standards of work. **Alliances and agreements:** Any group of more than a dozen individuals will be in conflict with each other without a set of functional rules. **Application of Knowledge:** Today, many companies are pushing for success or failure due to the effective use of knowledge, information and data. **Performance pressure:** In an intelligent organization, everyone has to have a proposition for action, that is, they have a sense of what to achieve and to be aware of the purposefulness of the goals [9]. The universities of medical sciences have to choose, employ and maintain capable human resources in terms of assigned duties. The extensive tasks and the position of medical universities in the policies of health and medicine as well as the country's education, as well as having experienced staff and managers in their field of work, emphasize the importance of proper management of intellectual capital in the ministry for the best possible success in the implementation of goals, tasks and missions. So, for the operation of the above concept at the Babol University of Medical Sciences, is there a concern that members and staff can be smarter? In the next step, let us think. Do you hear and pay attention to the ideas of the staff and the faculty to gain more knowledge than we hire them for? Is the culture governing the university open and supportive, and has the university developed a reward system related to the performance of faculty members, and are all employees contributing to the organization's program and achievements? Are the University's approach to some of the affairs based on a strategic approach? Is there a connection between employee career stability and organizational bureaucracy, and is there a minimum in this bureaucracy organization? Therefore, the researcher's questions were asked to investigate the relationship between intellectual capital and organizational intelligence among nurses working in Ayatollah Rouhani Hospital in Babol or, in other words, to seek to answer the main question: Is there any relation between intellectual capital and organizational intelligence among nurses working at the Ayatollah Rouhani Hospital in Babol? Also, "intellectual capital management" as an independent variable and organizational intelligence and its seven dimensions based on the Albrecht model, are dependent variables of this research.

Main Objective

- Determining the relationship between intellectual capital and organizational intelligence among nurses working in Ayatollah Rouhani Hospital in Babol.

Secondary objective

1. Determining the relationship between intellectual capital and strategic perspective among nurses working in Ayatollah Rouhani hospital in Babol.
2. Determining the relationship between intellectual capital and common fate among nurses working in Ayatollah Rouhani hospital in Babol.
3. Determining the relationship between intellectual capital and desire to change among nurses working in Ayatollah Rouhani hospital in Babol.
4. Determining the relationship between intellectual capital and courage among nurses working in Ayatollah Rouhani Hospital in Babol.
5. Determining the relationship between intellectual capital and alliances and agreement among nurses working in Ayatollah Rouhani hospital in Babol.

6. Determining the relationship between intellectual capital and application of knowledge among nurses working in Ayatollah Rouhani Hospital in Babol.
7. Determining the relationship between intellectual capital and performance pressure in faculty members and staff of Babol University of Medical Sciences.

Main hypothesis

✓ There is a relationship between intellectual capital and organizational intelligence among nurses working at Ayatollah Rouhani Hospital in Babol.

Secondary objective

1. There is a relationship between intellectual capital and strategic perspective among nurses working in Ayatollah Rouhani hospital in Babol.
2. There is a relationship between intellectual capital and common fate among nurses working in Ayatollah Rouhani hospital in Babol.
3. There is a relationship between intellectual capital and desire to change among nurses working in Ayatollah Rouhani hospital in Babol.
4. There is a relationship between intellectual capital and courage among nurses working in Ayatollah Rouhani Hospital in Babol.
5. There is a relationship between intellectual capital and alliances and agreement among nurses working in Ayatollah Rouhani hospital in Babol.
6. There is a relationship between intellectual capital and application of knowledge among nurses working in Ayatollah Rouhani Hospital in Babol.
7. There is a relationship between intellectual capital and performance pressure among nurses working in Ayatollah Rouhani Hospital in Babol.

Methodology

The research is objective in terms of its purpose and it is descriptive-analytical of survey type. The population included 713 people in all faculty members and staff members of the Babol University of Medical Sciences in 2017. The research was carried out based on the data collected from 254 members of the community and the method of sampling was simple random method and using the Cochrane formula, the number of sample groups was selected. Data were collected using standard questionnaires (Karl Albrecht, 2003) and Bontis Intellectual Capital Management (2010), and analyzed by SPSS software. Kolmogorov-Smirnov test, one-sample t-test, Pearson correlation test and Friedman test were used to test the hypotheses.

Table 1: Cronbach Alpha Criteria for Research

Row	Variable	Cronbach's Alpha	Description
1	Strategic Perspective	0.844	Likert Five Option Spectrum Scale
2	Common Fate	0.856	Likert Five Option Spectrum Scale
3	Desire to Change	0.843	Likert Five Option Spectrum Scale
4	Courage	0.876	Likert Five Option Spectrum Scale
5	Alliances and Agreement	0.87	Likert Five Option Spectrum Scale
6	Application of Knowledge	0.869	Likert Five Option Spectrum Scale
7	Performance Pressure	0.861	Likert Five Option Spectrum Scale
8	Organizational Intelligence	0.871	Likert Five Option Spectrum Scale
9	Intellectual Capital Management	0.874	Likert Five Option Spectrum Scale

Findings

Table 2: Frequency distribution of research sample in terms of demographic information

Demographic factors	Groups	Frequency	Percent
Gender	Male	150	59.1
	Female	104	40.9
Marital status	Married	218	85.8
	Single	36	14.2
Level of education	Bachelor	123	48.4
	Master's degree	82	32.3
Work experience (years)	Under 10 years old	96	37.8
	10 to 15	68	26.8
	From 16 to more than 20 years	90	35.4
Age	Less than 30 years	41	16.1
	31 to 40 years	76	29.9
	41 to 50 years	76	29.9
	More than 50 years	61	24.0

Table 3: Normal test for research variables

Variable	Kolmogorov-Smirnov statistics	Sig.	Test result
Strategic Perspective	0.59	0.87	Normal
Common Fate	0.87	0.43	Normal
Desire to Change	0.83	0.49	Normal
Courage	0.78	0.56	Normal
Alliances and Agreement	0.88	0.41	Normal
Application of Knowledge	0.46	0.98	Normal
Performance Pressure	0.82	0.51	Normal
Organizational Intelligence	0.62	0.83	Normal
Intellectual Capital Management	1.18	0.12	Normal

As can be seen from Table 3, all the research variables are normal, so we use a parametric test to test these variables.

As you can see from Table 4, the status of all variables is less than 0.05 according to the test probability value, which has led to the rejection of the zero hypothesis. As a result, from the perspective of the nurses working in the Ayatollah Rouhani hospital in Babol, the status of all variables above is more than average and desirable.

Table 4: Investigating the status quo of research variables based on single sample t test

Variable	Kolmogorov-Smirnov statistics					Test result	Status
	Average	Standard deviation	T Statistics	Degrees of freedom	Probability value		
Strategic Perspective	3.84	0.52	25.96	253	0.0009	Reject the hypothesis	More than average
Common Fate	3.71	0.55	20.50	253	0.0009	Reject the hypothesis	More than average
Desire to Change	3.85	0.52	25.93	253	0.0009	Reject the hypothesis	More than average
Courage	4.02	0.55	29.31	253	0.0009	Reject the hypothesis	More than average
Alliances and Agreement	3.85	0.62	21.75	253	0.0009	Reject the hypothesis	More than average
Application of Knowledge	3.89	0.60	23.41	253	0.0009	Reject the hypothesis	More than average
Performance Pressure	3.67	0.49	21.80	253	0.0009	Reject the hypothesis	More than average
Organizational Intelligence	3.83	0.46	28.99	253	0.0009	Reject the hypothesis	More than average
Intellectual Capital Management	3.82	0.42	30.79	253	0.0009	Reject the hypothesis	More than average

Table 5: Pearson Correlation Coefficients for Main and Secondary Hypotheses

Intellectual Capital Management	Organizational Intelligence		Test result
	Pearson Correlation Coefficients	Probability value	
Main hypothesis	0.708**	0.0009	Significant
Secondary hypothesis 1	Strategic Perspective		Significant
	0.562**	0.0009	
Secondary hypothesis 2	Common Fate		Significant
	0.537**	0.0009	
Secondary hypothesis 3	Desire to Change		Significant
	0.630**	0.0009	
Secondary hypothesis 4	Courage		Significant
	0.565**	0.0009	
Secondary hypothesis 5	Alliances and Agreement		Significant
	0.527**	0.0009	
Secondary hypothesis6	Application of Knowledge		Significant
	0.672**	0.0009	
Secondary hypothesis 7	Performance Pressure		Significant
	0.620**	0.0009	

As can be seen from Table 5, the correlation coefficient between intellectual capital management and organizational intelligence and probability less than 0.05 indicates a significant and positive relationship between all variables. The result shows that from the perspective of the nurses working in Ayatollah Rouhani hospital in Babol between the variables of intellectual capital management, organizational intelligence, strategic perspective, common fate, desire to change, courage, alliances and agreement, application of knowledge and performance pressure has a meaningful positive relationship and by improving intellectual capital management in the organization, the organizational intelligence of the staff is also enhanced. Simply put, all the research hypotheses are verified.

As outlined in Table 6 (next page), the viewpoint among nurses working at Ayatollah Rouhani Hospital in Babol that has the highest priority relates to the courage with a an average rating of 5.07. The second priority relates to the application dimension of knowledge with an average rating of 4.31. The third priority relates to the alliance and agrees with the variable with an average rating of 4.29. The fourth priority is related to the dimension of fate with an average rating of 4.25. The fifth priority relates to the strategic perspective dimension with an average rating of 4.10. The sixth priority relates to the dimension of the desire to change with an average rating of 4.01, and finally, the performance pressure was at the last place with a mean score of 2.97.

Table 6: Ranking Seven Dimensions of Organizational Intelligence

Variable	Average rating	Priority
Strategic Perspective	4.10	Fifth
Common Fate	4.25	Fourth
Desire to Change	4.01	Sixth
Courage	5.07	First
Alliances and Agreement	4.29	Third
Application of Knowledge	4.31	Second
Performance Pressure	2.97	Seventh

Discussion and Conclusion

The findings of the research showed that between intellectual capital management and organizational intelligence, intellectual capital management and strategic perspective, intellectual capital management and common fate, intellectual capital management and desire to change, intellectual capital management and courage, intellectual capital management and alliance and agreement, intellectual capital management and knowledge application, and finally, intellectual capital management and performance pressure, there is a significant positive relationship, and with the improvement of the status of the predictor variable in the organization, the criterion variable also improves. In Mirzadeh and Safar's research in 2014, researchers said that developing the dimensions of organizational intelligence in the organization would increase the organizational learning power. This research shows the importance of focusing on organizational intelligence in today's agencies and organizations . Velashani and others in their 2013 study examined the effects of intellectual capital management and its dimensions, such as human capital and structural capital, on performance, the results of which have shown the positive effects of intellectual capital management . This research demonstrates the positive effects of the proper management of intellectual capital in the organization. In 2007, Gorji Korsami and Asadi Rad, in the same way as previous research, investigated the effects of intellectual capital management and its dimensions on the performance of the organization. The results indicate a positive impact of intellectual capital management [12]. Shirsavar and Marzban Moghaddam in their 2013 research evaluated the relationship between organizational intelligence and its dimensions with organizational entrepreneurship components [13]. Hosseini and Chili Saril in 2013 examined the relationship between organizational intelligence and organizational learning and assessed this relationship as meaningful and positive [4]. The results of Rahmani and Asgharzadeh's research in 2013 indicate that there is a positive and significant relationship between organizational intelligence and strategic thinking power in managers, also, between the components of organizational intelligence based on the seven dimensions of categorization of the Albrecht model, which include: strategic perspective, common fate, desire to change, courage, alliance and agreement, performance pressure and knowledge development, and the power of strategic thinking of managers has a positive and significant relationship [8]. In 2010, Sattari Qahfarokhi reviewed the relationship between intellectual capital management and organizational intelligence. This research is one of the few studies that is quite similar to the subject of this research. The researcher has found a significant and positive relationship between intellectual capital management and organizational intelligence, which fully confirms the result of the main hypothesis of the present study, so, the results of the research are consistent with what was found in the current research from the main hypothesis of the research [16]. In 2010, Nazari Pour and Parvizi examined the relationship between intellectual capital management and organizational intelligence. This research, along with previous research (Sattari Qahfarokhi), was the only similar research done in the country. The researcher has tried to establish a constructive relationship between elements of intellectual capital and organizational intelligence for gaining competitive advantage. This approach is the same as the result obtained in the present research in the main hypothesis and special hypotheses [17]. Simply put, the results of two similar studies in the present study are consistent with what was achieved in this study and are in the same direction. This research, like previous research, indicates the need to pay attention to the organizational intelligence of the organization's employees (especially managers) and the effects that can have on different aspects of the organization. In 2012, Lou reviewed the relationship between intellectual capital management and performance in the academic environment and evaluated the results positively. Considering the fact that the statistical society in the study of Lou was similar to the present study, it was a significant academic environment. In 2011, Kesti et al. reviewed the relationship between human capital, one of the components of intellectual capital management and organizational intelligence, and assessed the relationship between them [19]. Because human capital is considered as a component of intellectual capital management, the results of the research can be compared with the results of this research. Tan, Plowman and Hancock, in their 2006 study, ranked the relationship between intellectual capital management and organizational performance positively [20].

Research Constraints

This research, like other studies, has been confronted with limitations. Among these limitations are the following:

- The limitations in the members of the statistical society, as the respondents to the research questionnaires, were limited to among the nurses working in Ayatollah Rouhani

Hospital in Babol.
- Having a cross-sectional nature, either temporally or locally, has been one of the fundamental constraints of this research.

Suggestions
Based on the results of the research hypothesis, the suggestions derived from the researcher's experiences are presented as follows:
- Managing the time and the high value of time and doing useful work in the office is one of the features that will improve the structural capital (from the dimensions of intellectual capital management) of any organization, so it is necessary to pay attention to it.
- The organization's senior managers' support for new ideas, talented and empowered forces, and considering the specific conditions for supporting innovative projects are among the ways to improve structural capital.

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References

1) Abzari, Mahdi, Etebarian, Akbar and Sattari Qahfarokhi, Mehdi, (2006), Organizational intelligence, and the prevention of mental subjective organization. Organizational Knowledge Management Monthly No.99 October.
2) Ardalan Mohammad Reza, Eskandari Asghar, Gilani. Maryam Ataee. Nafiseh (2014), The Relationship between Personality Characteristics and Organizational Intelligence of Employees with Intellectual Capital Management, Quarterly Journal of Research and Planning in Higher Education, No. 71.
3) Jamshidi, Mina (2010). Investigating the Position of Organizational Intelligence on Organizational Effectiveness, Islamic Azad University Press. Dec 2010
4) Hosseini Seyyed Yaqoob, Chili Saril Nina (2013). The Effect of Organizational Intelligence on Learning in Organizations, Journal of Management Studies, Vol. 23, No. 71, Pages 131-159.
5) Khalili, Mojtaba, Chopani, Heydar, Hayat, Ali Asghar (2010). Organizational intelligence, Necessity, Infrastructures and Consequences, First Conference on Organizational Intelligence and Business Intelligence, Tehran, Islamic Azad University, Tehran Branch, //www.civilica.com/Paper-OIBI01-OIBI01_065.html
6) Kheyrkhah, Hoshyar. (2011). Investigating the Relationship between Social Capital and Intellectual Capital (Case Study of Educational Offices in Kurdistan Province). Master's thesis, Islamic Azad University, Sanandaj Branch.
7) Zabihi, Mohammad Reza; Saeedeh Jami; Tektam al-Ghouri Moghadam and Samira Saghaei Shahri, (2014),. Organizational Intelligence Factors, International Management Conference in the 21st Century, Tehran, Institute of Managers of Idea Capital, Vieira, http://www.civilica.com /Paper-ICMNG01-ICMNG01_597.html
8) Rahmani, Zain al-Abedin and Mohsen Asgharzadeh (2013). The Relationship between Organizational Intelligence and Strategic Thinking for Managers in the Business Environment Case Study: Sarkhon and Qeshm Refinery, The First National Conference on Business Management, Hamedan, Science and Technology Tolo Farzin Industry, Bu-Ali Sina University, http://www.civilica.com/Paper-NCBM01-NCBM01_273.html
9) Sadat Mostafavi, Mahshid and Mojtaba Hadizadeh (2014). Organizational Intelligence, Its Origin, The First International Conference on Economics, Management, Accounting and Social Sciences, Rasht, Azad University Anzali Academic Entrepreneurs Association, http://www.civilica.ac.ir. com / Paper-EMASS01-EMASS01_011.html
10) Sattari Qahfarokhi Mehdi (2010). Prediction of Organizational Intelligence Based on Intellectual Capital Components at Payame Noor University of Mazandaran, Second International Conference on Intellectual Capital Management, Zanjan, Zanjan University of Applied Sciences, http://www.civilica.com/ Paper-IICM02-IICM02_017.html
11) Seyyed Naghavi, Mir Ali; Sepandarand, Sadegh; Ramin Mehr, Hamid (2012). Investigating the Effects of Intellectual Capital on Organizational Performance, Emphasizing the Mediating Capacity of Learning in Branches of Bank Saderat, Tehran Province. Faculty of Management, University of Tehran. Volume 4, Issue 12. P. 53- 70.
12) Shekarchizadeh, Ahmad Reza; Mohammad Javanmardi and Alizadeh Pardis (2012). The Study of Intellectual Capital Situation and its Relationship with Organizational Performance in the Insurance Industry of Iran. Case Study: Isfahan Insurance Companies, First National Conference on Industrial Engineering and Systems, Najaf Abad, Azad University Islamic branch of Najaf Abad, Department of Industrial Engineering, http://www.civilica.com/Paper-NIESC01-NIESC01_257.html
13) Shirsavar Hamidreza, Marziban Moghadam Efat (2013). The Relationship between Organizational Intelligence and Entrepreneurship in Productive Companies of Guilan Province, Quarterly Journal of Technology Growth, Quarterly Journal of Parks and Growth Centers, Vol. 9, No. 36.
14) Alem Tabrizi, Akbar; Haji Babaei, Ali and Rajabi Fard, Iman. (2009). Intellectual capital. Tehran: Iran Industrial Research and Training Center.
15) Aliwlou, Roghaieh, Ghorbani, Saber (2010). Organizational intelligence and creativity and innovation, Tehran, Institute of Creative Science, Innovation and TRIZ, http://www.civilica.com/Paper-ICIC03-ICIC03_101.html
16) Ghafari, Rahman and Amirnezam Zomorodi (2014). Introducing a model for identifying the components of organizational intelligence as a powerful tool in improving the knowledge transfer cycle in organizations. National Conference on Computer Engineering and Information Technology Management, Tehran, Tolo Farzin Co., http://www.civilica.com/Paper-CSITM01-CSITM01_206.html
17) Loghman Keshavarz, Farahani Abolfazl, Asghari Zahra (2014). Developing a Communication Model for Job Self-Efficacy and Organizational Intelligence at the Ministry of Sports and Youth of Iran. Applied Research in Sport Management, Volume 2, Issue 4, Success Story 8, pp. 67-87.
18) Lou, Wen-M., (2012). Intellectual capital and university performance in Taiwan. Economic Modeling Volume 29, Issue 4, July 2012, 1081-9. Available online at www.sciencedirect.com.
19) Kesti, M., Syvajarvi. A., Stenvall. J., Rivera. M., (2011). Human capital scenario analysis as an organizational intelligence tool for performance.
20) Tan, H.P., Plowman, D., and Hancock, P., (2012). Intellectual Capital and Financial Returns of Companies. Journal of Intellectual Capital, 8 (I), 76-95.