

Evaluating the Relationship between Intellectual Capital and Knowledge Sharing among Librarians in Tehran University of Medical Sciences

Marjan Arabrahmatipour^{1*}, Laleh Foroutan Rad¹, Sanaz Beyramzadegan²,
Narges Mohammadalipour²

¹ *Young Researchers and Elite Club, Roudehen branch, Islamic Azad University, Roudehen, Iran*

² *Faculty of Information and Knowledge Sciences, Islamic Azad University, Roudehen branch, Tehran, Iran*

Abstract: *The present study examines the relationship between intellectual capital and knowledge sharing among librarians in Tehran University of Medical Sciences. This research is a practical, descriptive and correlative study. The study population included all university librarians of this university. Data were collected by means of Bontis intellectual capital questionnaire (2004) and knowledge sharing questionnaire of Bukowitz and Williams (1999). To assess the permanency of internal consistency between the items, Cronbach's alpha was used (above 70%). To analyze the statistical data, the Pearson correlation coefficient was used. The results of the analysis showed that there was a positive relationship, less than the average level, between intellectual capital and knowledge sharing among the librarians in Tehran University of Medical Sciences.*

Key words: *intellectual capital, knowledge sharing, librarians of Tehran University of Medical Sciences*

I. Introduction

Knowledge can be outlined as an important alternative capital to financial and physical capitals in the global economy, and the most successful organizations use this intangible asset better and faster. Also, the transfer of knowledge and experience between employees in organizations is an important factor which can increase knowledge sharing within the organization, resulting in the production of new knowledge in the organization.

Knowledge is a key resource in any organization. The more the people know, the better they can perform. The era in which only money, land, and the arm were known as the capital is ended. In today's world, knowledge is considered as the most important capital for organizations (Entezari, 2006). Present and future success in the competition between organizations is based to a smaller extent on the strategic allocation of physical and financial resources, and to a larger extent, is based on knowledge management strategy. The managers' challenge is preparation of a suitable environment for growth and development of the human mind in a knowledge-based organization (Bontis, 2004). Knowledge management mainly follows creating, sharing, and using knowledge to achieve organizational learning. The noteworthy feature of this strategic resource (knowledge) is that the value increases by sharing it (Renzle, 2012). Knowledge sharing means distributing skills and acquired experiences voluntarily to other individuals. In other words, knowledge sharing is defined as an act in which people publish relevant information among others (Lee, 2011).

The exchange of knowledge is an important issue in organizations with highly competitive conditions that intend not only survival, but also satisfy the internal needs of customers and strategic objectives of organization at a high-level, because no organization does intend to be in a manner that the knowledge and organizational information of people exit the organization without being transferred to others. Knowledge management scholars believe that the slogan "Knowledge is Power", is presently transformed to "Sharing Knowledge is Power" (Jashapara, 2004).

Increase in the value of knowledge in the knowledge-based economy, information technology, and opportunities for improving the activities of libraries have attracted the attention of library staffs to knowledge management (Golyzadeh, 2012). Of potential skills of librarians are their outstanding contributions in creating the adequate environment to share knowledge and help develop informational literacy in organization. The unique skill of this group of people in information management has not only been confirmed by experts in librarianship, but also, in some cases, by experts in other fields (Koina, 2003). Medical care, education, and research centers like other professional organizations need the latest information in their areas of expertise to provide better services so that they can be synchronized with the latest developments. A look at the history of medical libraries shows that whenever significant signs of growth and activity are seen, libraries and information carriers have been working step by step along with scientists in mobility, endeavor, and knowledge sharing.

The success of the libraries depends on their ability to take advantage of information and knowledge of their employees. Thus, knowledge and experience of the library staff are parts of a library asset that should be shared. University libraries, as part of a parent organization, must try to improve the ways to develop services and transformation to learning organizations to achieve the identifying and sharing implicit and objective knowledge.

The effect of intellectual capital on organizational performance is an issue of great interest to scholars and senior managers of organizations and institutions in the world. Universities, as organizations that produce this capital for the benefit of community, must use the intellectual capital of their employees as their research priorities. The attention and emphasis on intellectual capital in organizations, and recognizing the importance and impact of this factor in the overall performance of organizations, and its positive effects in the process of value creation in organizations can be recommended as an effective factor in improving the financial performance of organizations.

Roos and Fernström (2005) defined intellectual capital as all non-financial and non-physical resources that are wholly or partly controlled by the organization and result in value creation. Intellectual capital is offspring of science and knowledge. Bontis (2004) believes that intellectual capital is to search and pursue the use of knowledge compared with the information.

Intellectual capital experts agree that intellectual capital is composed of three elements: human capital, structural capital, and relational capital.

This study examines the relationship between intellectual capital and knowledge sharing among librarians of Tehran University of Medical Sciences. Considering the scientific status of this university and its libraries in Iran, which are considerably used by of the faculty members, residents, interns, and staff, the need for such a study seemed necessary at this university. The aim of this study was to answer this question: "Is there any relationship between intellectual capital and knowledge sharing among librarians of Tehran University of Medical Sciences?"

1.1. Theoretical framework

This research framework was established on the basis of intellectual capital definitions offered by Bonitos (1998) and Ramirez et al. (2007). They divided and defined academic intellectual capital into three aspects:

Aspect1. Human capital:

A set of explicit and implicit knowledge acquired by university staff during formal, informal, and genuine educational processes which are represented in their activities;

Aspect2. Structural capital:

The explicit knowledge which is interrelated with internal processes of scientific and technical knowledge spread, communication, and management in organizations (organizational and technological);

Aspect3. Customer/relational capital:

Collection of a vast set of economic, political, and institutional communications which are developed and maintained by universities.

Some conducted researches related to the research variables:

Young Chu et al. (2006) observed a significantly positive relationship between intellectual capital components and performance of corporations in examining the relationship between intellectual capital components and the performance of High-tech Specialized Industry of Industrial Technology Research Institute. Firer and Williams (2003) examined the correlation between intellectual capital performance and the clarity of corporations' performances, but their findings did not show a consistent relationship between them, although at higher levels of intellectual capital, it seemed there have been considerable reductions in clarity level of intellectual capital. Doayi et al. (2014) studied the effect of intellectual capital on the work life quality of employees via empowerment among nurses of Zahedan Social Service Hospital. Their findings highlighted the significant and positive impact of intellectual capital and its components upon work life of the employees through their empowerment.

Lu (2012), in a study entitled "intellectual capital and university performance", performed in forty state universities in Taiwan, showed that intellectual capital has an important role in education and research; intellectual capital is also an effective way of thinking to improve strategies and helps managers to effectively improve performance. Longo and Mura (2011) found that intellectual capital has a positive effect on job attitudes; however, there were differences between the three dimensions of intellectual capital. They argued that the dimensions of human capital and relational capital did not affect directly job satisfaction and retention of employees. Ahmadian and Ghorbani (2013) examined the relationship between intellectual capital and

organizational performance among employees of the Ministry of Economic Affairs and Finance. Their study showed that there was a significant relationship between the components of intellectual capital and organizational performance. Ghalavandi et al. (2012) performed a research to assess the relationship between the components of organizational learning based on intellectual capital aspects among faculty members of Uremia University. It was revealed that there was a significant positive relationship between intellectual capital aspects and organizational learning components.

Phusavat et al. (2011) in a study entitled "the relationship between intellectual capital and performance" evaluated the impact of intellectual capital on organizational performance, confirming the positive and significant effects of intellectual capital on organizational performance. Huang and Hsueh (2007) studied the relationship between intellectual capital and performance in engineering consulting companies in Taiwan, showing a positive correlation between the components of intellectual capital and business performance. The highest correlation was related to human capital and then customer capital (relational).

Song (2006) also showed that, organizations can improve efficiency, reduce training costs, and lessen the risk of uncertainty with right knowledge sharing. According to study of Sohrabi et al. (2011) in project-oriented governmental organizations a collection of individual, organizational and technical factors have a direct and comprehensive effect on knowledge sharing. Based on their analyses, three human, organizational, and technical factors need to be considered in a focused and collected way. Tatar (2011) examined the relationship between knowledge management aspects, such as knowledge and learning and creating and sharing knowledge, and intellectual capital with personal and professional development of staff under the current flow of social, economic, and cultural conditions, stating that these factors can play an important role in organizational performance and knowledge concept of employees. Alhammad et al. (2009) studied knowledge sharing in Jordan's universities, indicating that the educational section staff is less inclined to share knowledge than the office staff. The findings Zerenler et al (2008) in study entitled assessment of intellectual capital effected on innovation performance indicated that, there is positive and significant correlation between intellectual capital and innovation performance.

The research main question

Is there a significant relationship between intellectual capital and knowledge sharing of librarians in Tehran University of Medical Sciences?

The research hypotheses

Hypothesis 1: There is a significant relationship between human capital and knowledge sharing of librarians in Tehran University of Medical Sciences.

Hypothesis 2: There is a significant relationship between structural capital and knowledge sharing of librarians in Tehran University of Medical Sciences.

Hypothesis 3: There is a significant relationship between relational capital and knowledge sharing of librarians in Tehran University of Medical Sciences.

II. Method

The current research is practical in purpose, and the data are collected through descriptive- correlative method. The study population consisted of all librarians in Tehran University of Medical Sciences, a total of 61 librarians. Because of the limitations of statistical population, in collecting data, census method was used. According to the theme and objectives of the study, standardized questionnaire was used, consisting of three parts:

1. Demographics questionnaire
2. Bontis intellectual capital questionnaire (2004);
3. Bukowitz and Williams' knowledge sharing questionnaire (1999)

Scoring was done based on Likert's five-item scale (1 = very low, 2 = low, 3 = average, 4 = high, 5 = very high; strongly disagree = 1, disagree = 2, neither agree nor disagree = 3 agree = 4, strongly agree = 5).

Using Lawshe's formula (1975), Content Validity Ratio (CVR) was equivalent to 0.71. To assess the internal consistency of items, Cronbach's alpha was used (above 70%). According to variables measurement level, the research questions, and the research hypotheses, Pearson correlation coefficient was used.

III. Results

The results showed that most librarians of Tehran University of Medical Sciences are women (85.25%). The majority of them were between 31-40 years old (55.74%). Most librarians had a master degree (65.57%), 41 librarians had a degree of librarianship field, and 20 had degrees in other fields (Table 1).

Table 1: Demographic characteristics of librarians in Tehran University of Medical Sciences

	Variables	Number	Percent
Gender	Female	52	85.25
	Male	9	14.75
Age group	20-30	10	16.39
	31-40	34	55.74
	41-50	15	24.59
	51 years old and more	2	3.28
Academic degree	Associate degree	4	6.56
	BS	16	26.23
	MA	40	65.57
	Ph.D.	1	1.64
Field of Study	Librarianship	41	67.21
	Non- librarianship	20	32.79

Population size: 61

The first hypothesis results showed that there is a significant correlation between human capital and knowledge sharing of the librarians in Tehran University of Medical Sciences; the correlation coefficient was 0.147 at Sig=0.045 (Table 2).

The second hypothesis results showed that there is a significant correlation between structural capital and knowledge sharing of the librarians in Tehran University of Medical Sciences; the correlation coefficient was 0.219 at Sig=0.034 (Table 2).

The third hypothesis results showed that there is a significant correlation between relational capital and knowledge sharing of the librarians in Tehran University of Medical Sciences; the correlation coefficient was 0.203 at Sig=0.026 (Table 2).

Table 2: Pearson correlation test results regarding the research hypotheses

Hypotheses	Pearson correlation coefficient	Correlation direction	Significance level
The relationship between human capital and knowledge sharing of the librarians in Tehran University of Medical Sciences	0.147*	Positive	0.045
The relationship between structural capital and knowledge sharing of the librarians in Tehran University of Medical Sciences	0.219*	Positive	0.034
The relationship between relational capital and knowledge sharing of the librarians in Tehran University of Medical Sciences	0.203*	Positive	0.026

* Significant level at 5%

The main question's result revealed that there is a significant relationship between intellectual capital and knowledge sharing of the librarians in Tehran University of Medical Sciences; the correlation coefficient between two factors was 0.329 at Sig=0.004 (Table 3).

Table 3: Pearson correlation test result between intellectual capital and knowledge sharing of librarians in

Tehran University of Medical Sciences	
Pearson correlation coefficient (r)	0.329**
Significance level	0.004

Significant level at 1%

IV. Discussion

Considerable presence of women among librarians of Tehran University of Medical Sciences and their enthusiasm in knowledge sharing is the reason for valuation of human capital. The average age of librarians also indicated the presence of young potential in the field of knowledge sharing among young librarians, the most appropriate age range to participate in knowledge-sharing activities in the librarians' community. In addition, the high academic qualifications of the librarians in this University indicates their high level of knowledge, that could lead them to a better understanding of modern science and better perception of knowledge sharing. Most librarians in Tehran University of Medical Sciences have a degree in their own field of education, and having the necessary knowledge in their career, can easily and professionally share knowledge in an organization with academic structure and via an appropriate interaction with other librarians.

In the first hypothesis it was demonstrated that there was significant correlation between human capital and knowledge sharing of librarians in Tehran University of Medical Sciences at 5%; the intensity of this relationship was weak, and its direction was positive and direct. Thus the Pearson correlation analysis showed

that the first hypothesis is confirmed. And it seems that the intellectual capital and knowledge sharing of librarians in Tehran University of Medical Sciences nearly interact to enhance and promote each other.

In order to share knowledge, one must first identify the factors that influence it. Understanding the factors affecting knowledge sharing is the first step to perceive how to manage this process (Jacobson, 2008). Human factor is the most important factor in knowledge sharing because it deals with the man himself who is the cause of knowledge-sharing. People who are successful at their work and tasks can be a reliable source for knowledge sharing (Esmati and Zarei, 2013). Human capital has made organizations to greatly depend on the knowledge and skills of their employees to improve efficiency and productivity.

Higher the quality human resource as the most important capital of an organization, the likelihood of success, survival, and development of the organization increases. Therefore, we should take necessary measures to improve the quality of human resources. This not only includes professional trainings, but also the improvement of people's attitudes and balancing their values (Seyed Javadin, 2002). The results of this hypothesis are somewhat consistent with results from research of Moghadam, et al. (2013). In their research entitled "intellectual capital and organizational learning capacity" among employees of a government organization in Khorasan Razavi Province, they showed that human capital is an important factor in this government organization.

The second hypothesis test results (Pearson correlation coefficient) showed that structural capital is correlated with knowledge sharing of librarian in Tehran University of Medical Sciences, and the intensity of this relationship is weak, and its direction is positive and direct, confirming the second hypothesis.

Structural capital contains certain institutional knowledge that is used within the organization structures and processes. Structural capital is a function of human capital. Hence, structural capital and human capital interact with each other to help organizations. Inappropriate organizational structure may be a barrier to knowledge sharing. Bontis (1998) assumes the relationship between intellectual capital components as very important. He believes that with adequate human capital in an organization but without proper structural capital we cannot take advantage of people's knowledge and therefore cannot respond appropriately to our client capital.

Structural capital can be divided in forms of culture, organizational structure, organizational learning, operational processes, and the information systems. Each component of structural capital can affect three other capitals, particularly human capital, and in turn become influenced by them (Chen et al., 2004). The results of this hypothesis are consistent with Longo and Mura (2011).

The third hypothesis test results showed that there is a significant relationship between relational capital and knowledge sharing of the librarians in Tehran University of Medical Sciences at 5%, and the intensity of this relationship is weak, and its direction is positive and direct, confirming the third hypothesis (Pearson correlation analysis results).

Relational capital represents the potential ability of an organization due to external intangible factors, consisting of knowledge in all relationships that an organization establishes with customers, competitors, suppliers, trade associations, or government (Bontis and Keow 2000). The results of this hypothesis do not match the findings by Longo and Mora (2011), however consistent with the results of Dewi Fariha and Sofian (2012). In their study, entitled "the relationship between intellectual capital and organizational performance" in a number of Malaysian companies, they showed that among dimensions of intellectual capital, relational capital is correlated with organizational performance.

The results regarding the main question of the study showed that intellectual capital and knowledge sharing of librarians in Tehran University of Medical Sciences are correlated. It can be said that there is a significant relationship between these two factors at 1%, and the intensity of this relationship is less than the average level, and it has a direct and positive direction.

Knowledge sharing is gained so importance that many have accepted that the success of knowledge management depends on knowledge sharing; in other words, knowledge sharing is the most important part of knowledge management (Renzle, 2012). The most fundamental challenge of knowledge management is knowledge sharing not the production of knowledge. The undistributed knowledge has a very limited value for the organization (Bagheri, 2005). In fact, knowledge sharing can simultaneously affect individual capabilities and organizational competences and lead to the strengthening of intellectual capital capabilities of organization in the field of human and organizational capitals (Magnin and Senoo, 2008). Nowadays, the researchers have concluded that the development of any society depends on enhancing the level of intellectual capital of organizations and active institutions in it (Zhang and Fung, 2006).

In today's knowledge-based environment, intellectual capital is the most important part of capital of an organization, hence, managers, in addition to increasing their knowledge in the field of intellectual capital, must develop this field in their organizations by strengthening its components (human capital, structural capital, and relational capital).

The effectiveness and daily growth of efficiency in an organization is due to paying attention to knowledge, sharing it, and intellectual capital and Via understanding this important subject nature and methods

of its valuation, planning, optimization, control, and monitoring it in the organization becomes feasible (Ahmadian and Ghorbani, 2013).

The philosophy of knowledge in libraries is realized when knowledge is shared. Therefore, the sharing of knowledge by librarians in libraries can be an important factor in the success of these centers. It seems that knowledge sharing is, to some extent, attended by the librarians in Tehran University of Medical Sciences. The staff in these libraries engages in knowledge-sharing activities, but such activities are not among the top priorities of their organization and management.

Tehran University of Medical Sciences librarians are important human factors in this organization; they consider knowledge sharing as a reasonable fact and by sharing knowledge, they gain more confidence, giving them a pleasant feeling and decision-making power. Their attitude in communication and social relationships is also positive, so it can be a good reason to share knowledge. Among them, structural factors are almost in a proper condition, but still counted as affective factors and obstacles on knowledge sharing, which can be supported among librarians of this university through cultural development, creating incentive systems, and encouragement to share knowledge.

The results of this study are in line with those by Ahmadian and Ghorbani (2015), Ghalavandi et al. (2012), Phusavat et al. (2011), Zerenler et al. (2008), Young Chu et al. (2006), Doayi et al. (2014), and Lu (2012), in examining intellectual capital dimensions and other variables.

V. Conclusion

In general, it can be concluded that the attention to the intellectual capital and knowledge sharing among librarians in Tehran University of Medical Sciences is in a relatively good condition; however, there is not necessary skills, and sharing of knowledge is normally done during work. Therefore, strategies should be taken for improvement of and taking more attention to the dimensions of intellectual capital. Due to rapid development of knowledge in various fields of science, the proper use of information sources and knowledge sharing among librarians plays an important role.

References

- [1]. Ahmadian, M., and Ghorbani, R. (2013). The relationship between intellectual capital and organizational performance of the Ministry of Economic Affairs and Finance. *Economic Journal*; 11 & 12: 111-130.
- [2]. Alhammad, F; Al Faori, S; Abu Husan, LS (2009). Knowledge Sharing In the Jordanian Universities. *Journal of Knowledge Management Practice*; 10(3):50-65.
- [3]. Baghery, F. (2005). Libraries and survival: Is knowledge management the correct answer? *Informology*; 3 (1 & 2): 61-78.
- [4]. Bontis N(2004). National intellectual capital index, a United Nations initiative for the Arab Region. *Journal of Intellectual Capital*, 5(1): 13-39.
- [5]. Bontis N, Keow W. A., Intellectual capital and business performance in Malaysian industries, *Journal of Intellectual capital*, 1 (1) 85-100,2000. <http://dx.doi.org/10.1108/14691930010324188>
- [6]. Bontis, N. (1998), "Intellectual Capital: an Exploratory Study that Develops Measures and Models", *Management Decision*, 36(2): 63-76.
- [7]. Bukowitz W and Williams R (1999). Knowledge Management Diagnosis Questionnaire.
- [8]. Chen, J et al. (2004), Measuring intellectual capital: a new model and empirical study. *Journal of Intellectual capital*, 5 (1): 85-100.
- [9]. Dewi Fariha A. & Sofian S. (2012). the Relationship between intellectual capital and corporate performance. *Procedia- Social and Behavioral Sciences*, 40: 537-541.
- [10]. Doayi, H. & Yaghubi, N. & Firuzbakhsh, Z & Sheikhpur, Z (2014). The empowerment of the staff as a link between intellectual capital & work-life quality. *Quantitative Study in Management*, 5(2): 92-106.
- [11]. Entezary, A. (2006). Comparison of knowledge culture between the Higher Education and Research Institute of Management and Planning, Faculty of Broadcasting, and Faculty of Civil Aviation Industry. MS Thesis of Research and Education Institute of Management and Planning Organization, Tehran.
- [12]. Esmati, M. D., and Zarei, H. (2013). Study of the status of knowledge sharing and management of websites of university libraries in Tehran. *Journal of Information Processing and Management*; 28(4): 945-969.
- [13]. Firer, S., Williams, S. M. (2003). Intellectual Capital and Traditional Measures of Corporate Performance. *Journal of Intellectual Capital*. 3:348-360.
- [14]. Golizadeh, H. (2012). Evaluating the relationship between organizational culture and knowledge management in libraries of three power branches in Tehran. Master's thesis, University of Allameh Tabatabai.
- [15]. Ghalavandi, H., Hasani, M., and Soltanzadeh, V. (2013). Exploring the relationship between intellectual capital and organizational learning (the case of faculty members of Uremia University). *Higher Education Journal*; 5 (20): 99-116.
- [16]. Huang, C. F. & Hsueh, S. L. (2007). A Study on the Relationship between Intellectual Capital and Business Performance in the Engineering Consulting Industry: A Path Analysis. *Journal of Civil Engineering and Management*, 4: 265-271.
- [17]. Jacobson, C. M. 2008. Knowledge sharing between individuals. In Jennex, M. E. (Ed), *Knowledge management: Concepts, methodologies, tools and applications*, (1633-1642). Hershey: Information Science Reference.
- [18]. Jashapara, A (2004). Knowledge management. Prentice hall: Financial times limited .p. 88-112.
- [19]. Koina, C (2003). Librarians are the ultimate knowledge managers. *The Australian Library Journal*; 52(3): 269-72.
- [20]. Lawshe, C.H(1975). A quantitative approach to content validity. *Personnel Psychology*, 28:563-575. doi:10.1111/j.1744-6570.1975.tb01393.x
- [21]. Lee, H.(2011). Knowledge Management Enablers, Processes, and Organizational Performance : an Integrative View and Empirical Examination. *Journal of Management Information Systems*, 20(1): 179-228.
- [22]. Longo, M., & Mura, M(2011). The effect of intellectual capital on employees' satisfaction and retention. *Information & Management*, 48: 278-287.

- [23]. Lu, W-M(2012).Intellectual capital and university performance in Taiwan. *Economic Modeling*, 29: 1081–1089.
- [24]. Magnier-Watanabe R, Senoo D (2008).Organizational characteristics as prescriptive factors of knowledge management initiatives. *Journal of Knowledge Management*; 12(1): 21-36.
- [25]. Moghadam S.K. Zabihi M.R. Hakimzade A(2013).Intellectual capital and organizational learning capability. *Journal of Soft Computing and Applications*, (2013) 1-9. <http://www.ispacs.com/journals/jsca/2013/jsca-00011/>
- [26]. Phusavat, Kongkiti; Comepa, Narongsak; Sitko-Lutek, A. and Keng-Boon, Ooi (2011). Interrelationships between intellectual capital and performance. *Industrial Management & Data Systems*, 111 (6): 810 – 829.
- [27]. Ramirez, Y., Lorduy, C., & Rojas, J. A(2007).Intellectual capital management in Spanish universities. *Journal of Intellectual Capital*, 8(4): 732-748.
- [28]. Renzle. B (2012).Trust in Management and Knowledge Sharing :The Mediating effects of fear and Knowledge Documentation. *Omega*, 36: 206-220.
- [29]. Roos, G., Pike, S., & Fernstrm, L. (2005).*Managing intellectual capital in practice*. Oxford: Butterworth-Heinemann.
- [30]. Seyedjavadin, S. R. (2006).*Principles and applications of Human Resources Management and Staff Affairs*. Tehran. Negah-e-Danesh, 702 p.
- [31]. Sohrabi, B., Forouzandeh, S., Raeesi Wanati, I. (2011). Presenting a comprehensive model for the assessment of sharing knowledge project-based governmental organizations based on human, organizational, and technical factors. *Public Management Journal*; 3 (7): 95-114.
- [32]. Song,S.(2006).An Internet Knowledge Sharing System.*The Journal of Computer Information System*, 42(3):25-30.
- [33]. Tatar, L (2011).Knowledge management and human resource development. *Defense resources management in the 21st century*, 10 (6):P1-6.
- [34]. Young Chu, P., Lin, L.Y., Hsiung, H.H., Liu, T.Y. (2006). Intellectual Capital: An empirical study of ITRI. *Technological Forecasting and Social Change*, 73 (7): 886-902.
- [35]. Zerenler, M.; Hasiloglu, B.; and Sezgin, M. (2008). Intellectual Capital and Innovation -Performance: Empirical Evidence in the Turkish Automotive Supplier. *Journal of Technology Management*, 3 (4): 31-40.
- [36]. Zhang Q.G. Fung H(2006).China social capital and financial performance of private enterprises. *Journal of Small Business and Enterprise Development*, 13(2): 98-107.