

## **Exploring the Role of Organizational Capital on Organizational Innovation: Evidence from NBTVE in Libya**

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**ABSTRACT:** This study purpose to determine the relationship between organizational capital and organizational innovation. For addressing this relationship a research was conducted with members of High Technical Education Institutions that affiliated to the National Board for Technical and Vocational Education (NBTVE) in Libya. In this context, it is also aimed to understand whether organizational capital in High Technical Education Institutions has an active role in promoting innovation in these institutions. Data of the research was collected through questionnaire technique. For measuring organizational capital, “Organizational Capital Scale” used in the study of Subramaniam and Youndt (2005) was used and for measuring organizational innovation, “Organizational Innovation Scale” used in the study of Hamidizadeh and Eghtesadi (2012) was used. According to the findings of reliability and validity analyses, reliability and validity of the scales were proven in this study. For testing the main hypothesis of the study, regression analysis was utilized. Findings demonstrated that there is found a significant as well as positive relation between organizational capital and organizational innovation and the main hypothesis of the study is supported. On the basis of the findings, the study suggests that organizational capital can play a significant role on enhancing the organizational innovation.

**KEYWORD:** Organizational Capital, Organizational Innovation, High Technical Education Institutions, NBTVE in Libya.

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### **I. INTRODUCTION**

In today’s business world the concern of organizations has shifted from relying solely on natural resources to depended on intellectual resources. Organizational capital is one of the most significant component of intellectual capital and include many factors accepted in the literature as institutionalized knowledge, patents, databases, structures, manuals, processes and systems. Organizational capital is the main part of intellectual asset that exists even when employees leave the company; hence it is known as employee-independent. It forms a body of knowledge that must reach the managerial and other decision making levels. Organizational capital is created by containing and retaining knowledge that becomes property of the organization. This indicates the importance and role of organizational capital in innovation and development. Therefore, the ability of an organization to generate innovation is closely linked to its organizational capital, or its ability to use its knowledge based resources. Depending on these mentioned facts, using knowledge based intellectual resources is critical for institutions, especially universities, technical institutes and research centers. This study has been structured on this interest. It is important for the development of the Libyan higher education field to identify the link between organizational capital and organizational innovation. Therefore, members of High Technical Education Institutions that affiliated to the National Board for Technical and Vocational Education (NBTVE) in Libya were chosen as the subject of this research and by the help of their participation it is aimed to adress the role of organizational capital on organizational innovation.

### **II. THEORETICAL BACKGROUND**

#### **2.1. Intellectual Capital and Organizational Capital**

Intellectual capital (IC) is firstly proposed by economist John Kenneth Galbraith in 1969 as a term for explaining book and market value gap. He also argues that the intellectual capital exists as an essential part of knowledge, creating different advantages for companies (Wang, Chang, Huang & Wang, 2011). This means that the intellectual capital is a real capital, which companies own and it is a significant part of their real market value. IC is defined in the first Skandia report as having knowledge, applicable experiences, technology, relations with customers, and skills (Karchegani, Sofian & Amin, 2013). Researchers believe and they have evidence that the IC’s final output is innovation. Gaining access and developing understanding of this concept to

a level, on which, it is convertible into innovation, is critical. Organizations should regard IC as a strategic source, if they want to exist or excel. Thus, IC includes intellectual property, information, and experience that is used to create an organization's wealth or value (Kannan & Aulbur, 2004). Many researchers think that IC is summation of all the knowledge organizations apply for their competitive advantage (Nahapiet & Ghoshal, 1998; Youndt, Subramaniam & Snell, 2004). Therefore, competitive organizations are increasingly developing their intellectual capital resources using their assets in an effective way for achieving as well as sustaining the competitive edge. Previous researchers have shown three significant intellectual capital aspects. Subramaniam and Youndt (2005) conducted important previous researchers in order to determine the IC components, which are mainly three, and all of them are interdependent. They include human, social and organizational capital. In this study, these components which were mentioned by all the prominent researchers were accepted and organizational capital is taken into consideration (Subramaniam and Youndt, 2005).

Organizational capital (OC) implies institutional knowledge as well as codified experience/s, which are possessed by an organization and used through patents, databases, structures, manuals, procedures, and systems (Youndt, Subramaniam & Snell, 2004). Also, OC for any an organization represent its culture, operations, organizational learning and can be a source of competitive advantage. OC is a distinctive component for intellectual capital (Özdemir & Taşçı, 2017). Ultimately, an organization's capability to generate innovation is linked with the organizational capital, and/or its potential to utilize its other knowledge/informational resources. Therefore, OC provide coherence to the whole organization and considers as the key for having a strategic organizational capital which working to enhance of innovation and fostering these characteristics will be the main hard task for the senior managers.

## **2.2. Innovation and Organizational Innovation**

Innovation (I) is an essential tool for the growth and survival of contemporary organizations and their ability to adapt to environmental conditions. The innovation is one of significant features of today's business environment, as experts have observed that the innovative organizations continuously remain motivating employees, conduct experimentation, and promote performance enhancement and creativity. By taking advantage of the power of innovation and by continuously adopting and developing the idea of innovation, organizations can progress towards sustainable success (Kanbur & Kanbur, 2014). An effective senior manager can bring about lasting change through making people understand and embrace the beneficial innovations, reduce resistance and opposition to change to a highly considerable extent. So far, many efforts have been made in order to clearly define innovation, and eminent researchers including Kanter (1996) summed it up as "the exploitation and creation of new ideas." Moreover, Drucker (1998) believed that "Innovation is a work rather than genius." The processes such as development, creation, and implementation of novel ideas and application of new solutions can be termed as innovation. Organizations can engage in innovation to compete with their competitors and to be sustainable and differentiate (Kanbur & Özyer, 2016). When the effects of innovation on business output and performance is analyzed it has been noticed that many studies clearly indicate with the evidence that organizational innovation is a milestone towards competitiveness (Armbruster, Bikfalvi, Kinkel & Lay, 2008).

Organizational innovation (OI) involves the creation or alteration of business structures, practices and models, such as organisational processes such as more efficient ways of undertaking work or advanced management techniques. According to Community Innovation Survey of European Union in 2004, organizational innovation is broadly defined as changes in an organization structure or management methods that are intended to improve an organization's usage of knowledge, the quality of goods and services, or the efficiency of work flows (Lynch, 2007; Aksoy, Kanbur & Kanbur, 2008). OI is the heart of the strengthening organizational capabilities, and henceforth, achieving relative advantages.

## **2.3. Linkages Between Organizational Capital and Organizational Innovation**

The relationships between components of IC and innovation are important for taking investment decisions in the organizations; therefore, senior managers should sustain, protect, develop and manage IC components for increasing innovation for a definitive competitive edge (Karchegani, Sofian & Amin, 2013). The innovation process has been based on new knowledge throughout history (Drucker, 1998). It is considered that organizations with more knowledge will be able to create more and better. New knowledge helps taking better decisions and achieves the innovation that leads to getting higher market share than the competitor (Soo, Midgley & Devinney, 2002). Duffy (2001) believes that the intellectual capital supports efforts to benefit from new and applied tangible assets of the organization, which encourages innovation and promotes existing knowledge as a basis for ideas. Moreover, there is a need to disseminate knowledge in a way that improves performance and helps the organization to ensure that knowledge has been used in attributing and promoting innovation. It is obvious that organization's innovative capability is deeply linked with IC components (Subramaniam and Youndt, 2005). It is also essential to show this link between OC and innovation through

relevant researches. Previous studies have focused on the fact that each component of intellectual capital lead to developing and stimulating ideas and innovative suggestions through participation of working groups in terms of idea-sharing and helping to innovate, develop and empower individuals to perform their work, and solving problems in innovative ways, which contributes to the effectiveness, and to achieve competitive advantages despite various external issues organizations are facing nowadays.

Subramaniam and Youndt (2005) emphasize in their research that organizational capital positively influences incremental innovation capability. Delgado-Verde, Martin-de Castro and Navas-Lopez (2011) explain in their research that the collective knowledge in terms of organizational and technological capitals have a positive impact on innovation. Gonzalez-Loureiro and Figueroa-Dorrego (2012) focus on human capital and organizational capital as the main link that explains the growth of SMEs operating in the region of Galicia. Ghorbani, Mofaredi and Bashiryan (2012) explore the significant relationship between organizational capital management and organizational innovation according to findings of their research. Dumay, Rooney and Marini (2013) identify that organizational/structural capital is critical for the success of evolutionary innovations and it is a mitigation factor for radical innovations. El-Telbani (2013) also found that organizational capital has significant as well as positive relation with innovation in the company. Prester, Podrug and Darabos (2016) emphasize that organizational capital has positive and significant impact on process and product innovations.

In the nutshell, outcomes of the mentioned researches indicate that organizational capital has a significantly positive relation with innovation. The relation and the effect are on different levels depending on the company's innovation strategy, be it radical or incremental, or any other kind of innovation types according to any classification. This information is important for those, who make decisions in the organizations, for making investment strategies in the different IC components, and according to the type of innovation of their choice. Thus, the main hypothesis of the study appears as in the following in the light of the linkage between OC and OI in the literature.

*Hypothesis: There is a significant and positive relation exists between organizational capital and organizational innovation.*

### III. METHODOLOGY

Today, intellectual capital has become the main source of development for any organization. The decision makers have recognized the reality of intellectual resource as a major resource, and now they consider it more valuable than the material resources and intangible assets. Therefore, organizations have taken a great responsibility to take care of them and manage them effectively to increase their performance and achieve competitive advantage. The main purpose of this study is to explore the relation between the organizational capital (OC) and organizational innovation (OI).

For addressing this relationship a research was conducted with members of High Technical Education Institutions that affiliated to the National Board for Technical and Vocational Education (NBTVE) in Libya. In this context, it is also aimed to understand whether organizational capital in High Technical Education Institutions has an active role in promoting innovation in these institutions. Data of the research was collected through questionnaire technique. In the data gathering process, the aim of the research was explained to the members and data was collected who voluntarily accepted to attend the research. At the end of the data gathering process 206 questionnaires taken back and 6 of them ruled out due to incomplete questions. Thus, the data taken from the 200 questionnaires, which were statistically accepted, were used in the analysis of the study. For measuring organizational capital, "Organizational Capital Scale" used in the study of Subramaniam and Youndt (2005) was used and for measuring organizational innovation, "Organizational Innovation Scale" used in the study of Hamidizadeh and Eghtesadi (2012) was used. The reliability of the scales was tested by Cronbach Alpha internal consistency coefficient and their validity were analyzed by confirmatory factor analysis.

**Table 1: Confirmatory Factor Analysis of Organizational Capital Scale**

Fit Measures	Good Fit Values	Acceptable Fit Values	Model Fit Values
RMSEA	0.00 < RMSEA < 0.05	0.05 < RMSEA < 0.10	0.081
CMIN/DF	0 ≤ CMIN/DF ≤ 2df	2df ≤ CMIN/DF ≤ 3df	1.960
GFI	0.95 < GFI < 1.00	0.90 < GFI < 0.95	0.947
NFI	0.95 < NFI < 1.00	0.90 < NFI < 0.95	0.981
CFI	0.95 < CFI < 1.00	0.90 < CFI < 0.95	0.966

According to the findings of confirmatory factor analysis, it can be seen that factor structure of organizational capital scale was confirmed in this study as in the previous researches in the literature. On the other hand, Cronbach Alpha coefficient value found as 78.1% ( $\alpha=78.1$ ) for the scale was shown its sufficient internal consistency.

**Table 2: Confirmatory Factor Analysis of Organizational Innovation Scale**

Fit Measures	Good Fit Values	Acceptable Fit Values	Model Fit Values
RMSEA	0.00<RMSEA<0.05	0.05<RMSEA<0.10	0.023
CMIN/DF	0 ≤ CMIN/DF ≤ 2df	2df ≤ CMIN/DF ≤ 3df	2.061
GFI	0.95<GFI<1.00	0.90<GFI<0.95	0.970
NFI	0.95<NFI<1.00	0.90<NFI<0.95	0.982
CFI	0.95<CFI<1.00	0.90<CFI<0.95	0.952

According to the findings of confirmatory factor analysis, it can be seen that factor structure of organizational innovation scale was confirmed in this study as in the previous researches in the literature. On the other hand, Cronbach Alpha coefficient value found as 83.7% ( $\alpha=83.7$ ) for the scale was shown its sufficient internal consistency.

#### IV. FINDINGS

Findings of the research were presented in this part. First of all, demographic characteristics of the respondents were examined. Then, regression analysis was performed in order to test the main hypothesis of the study.

**Table 3: Demographic Characteristics of Respondents**

Demographic Characteristic	n	%	Demographic Characteristic	n	%
<b>Gender</b>			<b>Scientific Specialization</b>		
Male	171	85.5	Business Administration	32	16.0
Female	29	14.5	Engineering Sciences	28	14.0
<b>Age</b>			Managerial and Financial Sciences	60	30.0
Less than 30 years	25	12.5	Medical Sciences	41	20.5
From 30-40 years	53	26.5	Tourism Sciences	25	12.5
From 41-50	96	48.0	Others	14	7.0
More than 50	26	13.0	<b>Experience</b>		
<b>Education</b>			Less than 5 years	33	16.5
Master degree	162	81.0	From 5-10 years	59	29.5
Phd degree	38	19.0	From 11-15 years	73	36.5
			More than 15	35	17.5
<b>Total</b>	<b>200</b>	<b>100</b>	<b>Total</b>	<b>200</b>	<b>100</b>

According to Table 3, 85.5% of respondents were male and 14.5% were female. 48% of respondents were between 41 and 50, followed by 26.5% aged between 30 and 40. Majority of the respondents aged between 30 and 50 (87.5%), so they had good previous work experience. Respondents' majority has obtained a master degree (81%), and 19% had a PhD. 50.5% (or 101 out of 200) of respondents specialized in managerial, financial, and medical sciences whereas 49.5% (or 99 out of 200) respondents had qualifications on tourism, business administration, engineering sciences and others. Moreover, work experience of the respondents is important to understand the questions and respond properly. A majority (54%) of the respondents had more than 11 years teaching experience, which shows that a majority of respondents were experienced.

**Table 4. Findings of Regression Analysis**

<b>Independent variable: Organizational Capital</b>						
<b>Dependent variables</b>	<b>Adj.R<sup>2</sup></b>	<b>F</b>	<b>β</b>	<b>t</b>	<b>p</b>	<b>DW</b>
<i>Organizational Innovation</i>	,465	173,687 (,000*)	,684	13,179	,000*	1,890

\*p<0.01

According to the findings of regression analysis in Table 4, it can be seen that 46,5% of the variable of organizational innovation is explained by the variable of organizational capital. Due to this findings, it is also determined that organizational capital have a positive and significant effect on organizational innovation ( $\beta=.684$ ;  $p<.01$ ). The statistical value of Durbin-Watson (DW) is found as 1,890 and it can be seen that there is no auto correlation. In this context, the main hypothesis of the research is supported.

## V. CONCLUSION

This study has examined the relation between organizational capital and organizational innovation in High Technical Education Institutions, which are affiliated to the National Board for Technical and Vocational Education (NBTVE) in Libya. The study has certain empirical findings, which are important because the study provides evidence that organizational capital is a significant source of organizational innovation. Findings of the study indicate that there is a significant and positive relation exists between organizational capital and organizational innovation. Thus, findings support the main hypothesis of the research. Many relevant studies confirm this finding and, therefore, this result is in line with the other researches in the literature. This study once again confirms that organizational capital is a highly significant factor for organizational success while operating in knowledge-based economy, and it significantly enhances innovation, and so, it leads to achieve competitive advantages.

Ultimately, NBTVE in Libya should find a way to be competitive with other competitors into inside and outside Libya by taking consideration organizational capital and understanding the importance of developing strategies to support organizational innovation. Innovation capability is still in its infancy in Libya. The findings of the study will be helpful to practitioners, policymakers and executive managers to understand the concept of organizational capital as one of the most important components of intellectual capital in its depth. Therefore, building awareness about the importance of organizational capital at High Technical Education Institutions that affiliated to NBTVE in Libya, and also, other academic institutions should be sustained, protected, developed and managed to increase organizational innovation as a creator of competitive advantage.

This study has some limitations including its limited sample size. Therefore, its findings may not be generalizable/applicable to all the technical institutions/universities. It can be recommended that this is a highly potential area for research, so in future, researchers should extend sample size to get more generalizable results. Consequently, researchers should also extend the scope of their researches through focusing on all major IC components.

## REFERENCES

- [1]. Aksoy, A., Kanbur, A. & Kanbur, E. (2008). Innovation strategies in organizations: An empirical study on a sectorial leader of built-in appliances industry in Turkey. In International Symposium on Globalization, Democratization and Turkey Proceedings (pp. 738-747), March 27-30, Antalya.
- [2]. Armbruster, H., Bikfalvi, A., Kinkel, S., & Lay, G. (2008). Organizational innovation: The challenge of measuring non-technical innovation in large-scale surveys. *Technovation*, 28, 644-657.
- [3]. Delgado-Verde, M., Martin-de Castro, G., & Navas-Lopez, J. E. (2011). Organizational knowledge assets and innovation capability: Evidence from Spanish manufacturing firms. *Journal of Intellectual Capital*, 12(1), 5-19.
- [4]. Drucker, P. F. (1998). The discipline of innovation. *Harvard Business Review*, 76(6), 149-157.
- [5]. Duffy, J. (2001). Managing intellectual capital. *The Information Management Journal*, 35(2), 59-63.
- [6]. Dumay, J., Rooney, J., & Marini, L. (2013). An intellectual capital-based differentiation theory of innovation practice. *Journal of Intellectual Capital*, 14(4), 608-633.
- [7]. El-Telbani, N. (2013). The Relationship between intellectual capital and innovation in Jawwal Company-Gaza. *Jordan Journal of Business Administration*, 9(3), 619-650.
- [8]. Ghorbani, M., Mofareidi, B., & Bashiriyan, S. (2012). Study of the relationship between intellectual capital management and organizational innovation in the banks. *African Journal of Business Management*, 6(15), 5208-5217.
- [9]. Gonzalez-Loureiro, M., & Figueroa-Dorrego, P. (2012). Intellectual capital and system of innovation: What really matters at innovative SMEs. *Intangible Capital*, 8(2), 239-274.
- [10]. Hamidzadeh, M. R., & Eghtesadi, G. (2012). Organizational learning and organizational innovation. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 1(5), 92-98.

- [11]. Kanbur, A. & Kanbur, E. (2014). Investigation of white collar differences between levels of innovation sources of use. *Journal of International Management and Social Researches*, 1(1), 10-23.
- [12]. Kanbur, E. & Özyer, K. (2016). The effect of individual creativity level of employees on their intrapreneurship performance. *Journal of Management and Economics Research*, 14(2), 264-275.
- [13]. Kannan, G. & Aulbur, W. G. (2004). Intellectual capital: Measurement effectiveness. *Journal of Intellectual Capital*, 5(3), 389-413.
- [14]. Kanter, R. M. (1996). When a Thousand flowers bloom: Structural, collective and social conditions for innovation in organizations. In P. S. Meyers (Ed.), *Knowledge Management and Organizational Design* (pp. 93-110), Butterworth-Heinemann.
- [15]. Karchegani, M. R., Sofian, S., & Amin, S. M. (2013). The relationship between intellectual capital and innovation: A review. *International Journal of Business and Management Studies*, 2(1), 561-581.
- [16]. Lynch, L. M. (2007). The adoption and diffusion of organizational innovation: Evidence for the U.S. economy. IZA Discussion Paper, Paper Number: 2819, May.
- [17]. Nahapiet, J. & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266.
- [18]. Özdemir, B. & Taşçı, D. (2017). Validity and reliability testing of intellectual capital scale: An empirical study in top 1000 industrial enterprises of Turkey. *The Journal of Academic Social Science Studies*, 61, 363-372.
- [19]. Prester, J., Podrug, N., & Darabos, M. (2016). Four-component model of intellectual capital and its impact on process and product innovations. In *European Conference on Intellectual Capital* (p. 206), 12-13 May, Italy, Academic Conferences and Publishing International Limited.
- [20]. Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450-463.
- [21]. Soo, C. W., Midgley, D. F., & Devinney, T. M. (2002). The process of knowledge creation in organizations. INSEAD Working Paper Series.
- [22]. Wang, C. N., Chang, Y. L., Huang, Q. H., & Wang, C. H. (2011). Assessment on intellectual capital management for Taiwanese pharmaceutical industry: Using GRA and MPI. *African Journal of Business Management*, 5(7), 2950-2958.
- [23]. Youndt, M. A., Subramaniam, M., & Snell, S. A. (2004). Intellectual capital profiles: An examination of investments and returns. *Journal of Management Studies*, 41(2), 335-361.

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