

A comparative study of the impact of office technology in the creation of intellectual capital in the utility and telecommunications companies in Mazandaran province (Iran)

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Abstract: - In the present study, "The effect of office technology in the creation of intellectual capital in the utility and telecommunications companies in Mazandaran province" has been paid. The population of all managers, supervisors and vice in Mazandaran province has electricity and telecommunications companies.(65 people power companies and 100 people Telecom Company).Using a sample of farmers and Morgan table is done. According to population, the number of samples is equal to the power company n=56 Telecom and equal n=80 were calculated. Data was collected using questionnaires intellectual capital.The reliability of the questionnaire using Cronbach's alpha equal to 853/0 is obtained. After analyzing the data, the t-test and t-test comparisons reached the conclusion that Impact of administrative technology in the development of intellectual capital in the company to the province's electricity supply is more appropriate.

Keywords: - office technology, intellectual capital, human capital, relational capital, innovation capital.

I. INTRODUCTION

Technology development as a priority for improvement in order to achieve a higher standard of living has been accepted and its importance, especially in developing countries, which is very important in industrial growth, is evident. (Al-mabrouk& Soar, 2009) The new technology is an important tool for differentiation in the market. Companies can by new technologies, new and innovative products to provide or improve performance of existing products. (Magnusson, T. & Johansson, G, 2008)

In the face of rapid technological change, a key driver of technology to increase productivity, companies and even countries has become. In order to compete in a global environment where product life cycles are shorter and more intense competition, the ability to access new technology and its effectiveness is vital for companies.(lay,2009)

The term intellectual capital by Stewart (1991) is considered a synonym of intangible assets.

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In 1969 Galbraith, a process of value creation and asset class has been introduced. In the old economy a boost market value of the physical assets but in the new economy firm value using is intellectual capital and knowledge.(Zhou,2003)

Ross et al (1997) argue that members of an organization's intellectual capital sum knowledge into practical knowledge of organizational members. As well as a unique set of resources, tangible and intangible intellectual capital of the company; In addition, Intellectual capital transformation also refers to the tangible and intangible resources. Field of intellectual capital experts agree that intellectual capital is composed of four elements: Human capital, relational capital, structural capital investment and innovation.

Intellectual capital investment management organization is responsible for the fact that, according to experts located in front of or physical capital is a kind of supplement. Intellectual capital and intangible assets that are intangible and it is difficult to measure quantitatively. But on the other hand, it should be noted that quantitative indices that can be codified as possible for managers to justify the use of intellectual capital in an organization. Lord Kelvin said this could be true here: "When they do speak, it is able to quantify and express numerically

and can measure the proper understanding of gain. In contrast, when your order can not be expressed numerically small and can actually get a good understanding of it please".(Namamian,2013)

Therefore, this study is administrative technologies while examining the impact of IT in organizations a comparative study in the creation and development of intellectual capital in two (Electricity Company of Mazandaran province) to pay the immediate question is Administrative IT functions (as office automation systems and IT) What is the total influence on the development of intellectual capital, which will be composed of different aspects?

II. RESEARCH LITERATURE AND CONCEPTUAL MODEL

In this study, the classification of Chen et al (2004) and the changes that have been used to achieve the research model. They believe that the intellectual capital of a 4-storey element is composed of the following:

1 - Human Capital 2 - Customer Relationship capital 3 - Capital Innovation 4 - structural capital But they are convinced that the structure and components of intellectual capital is very weak and fragile unless they are supported by some continuing relationships and the Appendices. In fact, they are more focused on the relationship between intellectual capital components to the component.(Chen et al , 2004)

To the human capital that is the basis of intellectual capital knowledge, skills and abilities of employees and employees' attitudes about the business. In fact, the human capital that can be converted into knowledge by the three components of the capital structure, capital, customer and innovation, to convert to market value and other forms of human capital that will determine other operating assets.

The precise definition of intellectual capital components of Chen and colleagues describe the following:

Human capital, tacit knowledge has been represented in the minds and thoughts of employees.

1-Human capital is a major source of innovation, reinventing a company the combination of human and capitalism, competencies, attitudes and creativity is defined. The hard part is actually hard ware staff competency, intellectual capital, including knowledge, skills and talents of employees. This is achieved through practice. And some of them acquired through education. The attitudes of software intellectual capital is Including motivation, work satisfaction, useful In fact, as a precondition for monitoring employees' competencies are and are considered, creativity enable them to use their knowledge and continuous innovation have and therefore an important factor in the development and creation of intellectual capital of a company.

Structural capital structure of a firm deals with the system and the procedures and routines useful to a business. Structural capital can be culture, structure, and operational processes and information systems can be divided into organizational learning .Each element can be on three other capital and structural capital, especially human capital affect and in turn be influenced by it.

For example, a strong culture can be an important factor in motivating employees. Investors provide innovate (introduce) new combinations of factors of production within a production system is considered essential vital. These investments include new products, new technologies, new materials and new combinations may be market. Increasing importance of knowledge, innovation assets becomes an important component of intellectual capital and this capital can be divided into three components of successful innovation, mechanism innovation and innovation culture.

Capital knowledge value placed on customer relationship marketing channels through an organization refers to an organization of their own businesses; it is creating (Buntis, 1998).

In comparison with three other capital assets have the most direct impact on the realization of the value of a company is an important factor in business increasingly has become. Following the model of Chen et al (2004) Intellectual capital and the relationships between them (conceptual model) shows.

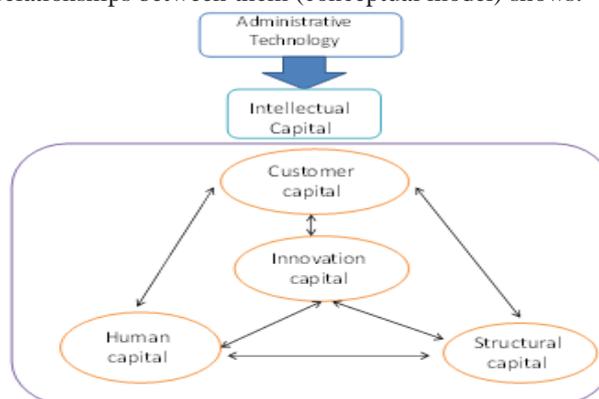


Figure 1 - The conceptual model

III. MATERIALS AND METHODS

To collect information from library resources, articles, books, and required information from the World Wide Web is used. In this study, questionnaires were used to collect the data needed. In order to measure the variables of ordinal scale Likert scale was used in five sets. Cronbach's alpha coefficient was used to obtain the reliability of the questionnaire is

IV. INFERENCE STATISTICS

First, before doing any of the normal or abnormal test data was informed. Test Kolmogorov - Smirnov normality assumption on variables to assess. In this test, the null hypothesis of data normality is and is rejected when the sig value is less than 0.05. When data normality was constant, parametric statistics are used. Note that the values of all variables are sig for the electric company and telephone company has more than 0.05 H_0 hypothesis that the normal assumption that the data is accepted. So it can be concluded that the variables are normal. Therefore, the test data should be used parametric statistics.

Part I) a comparative approach to a sample

1 - The first research sub-question test

Impact of administrative technology in the development of human capital province Power Company how?

Table 1: One-Sample Test for the human capital variables

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
The human capital approach	-4.159	55	.000	-.58730	-.8725	-.3021

According to the above table for human capital variables sig amount equal to 000/0 less than 0.05 so assuming H_0 is rejected. In other words, the effect of administrative technologies in the development of human capital in the province power company is significant.

2 - The second research subsidiary question test

Impact of administrative technology in the development of human capital in Mazandaran province what is TCI?

Table 1: One-Sample Test for the human capital variables

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
human capital	4.012	79	.000	.63158	.3126	.9505

According to the table above for the human capital variable sig amount equal to 000/0 less than 0.05 so assuming H_0 is rejected. In other words, the impact of office Technology Company in the development of human capital in Mazandaran province is significant.

3- The third research subsidiary question test

Impact of administrative technology in the development of Mazandaran province capital structure of the company, how is electricity?

Table 3: One-Sample Test for the structural capital variables

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
structural capital	-3.680	55	.001	-.52747	-.8169	-.2380

According to the table above for changing capital structure sig amount equal to 001/0 less than 0.05 so assuming H_0 is rejected, In other words, the effect of technology in developing administrative capital of Mazandaran province is significant structural power company.

4 - The fourth research subsidiary question test

Impact of administrative technology in the development of structural capital in Mazandaran province what is TCI?

Table 4: One-Sample Test for the structural capital variables

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
structural capital	3.121	79	.003	.41296	.1449	.6810

According to the table above for variable structural capital sig amount equal to 003/0 less than 0.05 so assuming H_0 is rejected, In other words, the impact of office Technology Company in the development of structural capital in Mazandaran province is significant.

5-The fifth subsidiary study exam questions

How is Effects of technology in developing the administrative capital of Mazandaran province innovation in electric company?

Table 5: One-Sample Test for the Innovation capital variables

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Innovation capital	-2.593	55	.012	-.38839	-.6886	-.0882

According to the table above for variable capital innovation sig amount equal to 012/0 less than 0.05 so assuming H_0 is rejected, in other words, the impact of technology on the development of the administrative capital of Mazandaran province is significant innovation in Power Company

6 - The sixth subsidiary question test research

How is the effect of investment in developing innovative technology company administrative Mazandaran province?

Table 6: One-Sample Test for the structure capital variables

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
structure capital	3.878	79	.000	.38750	.1886	.5864

According to the table above for variable capital innovation sig amount equal to 000/0 less than 0.05 so assuming H_0 is rejected, in other words, the effect of investment in developing innovative technology company administrative Mazandaran province is significant.

7. The seventh subsidiary question test research

Impact of administrative technology in the development of communication in the capital of Mazandaran province, how is electricity?

Table 7: One-Sample Test for the Communicational capital variables

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Communicational capital	-4.065	55	.000	-.58163	-.8706	-.2926

According to the table above for capital variable communication sig amount equal to 000/0, which is less than 0.05, so the hypothesis H_0 is rejected in other words, the effect of office technologies in the development of communication, capital Electric Company Mazandaran is significant.

8- Test sub-eight research questions

the effect of investment in developing communications technology company administrative province how?

Table 8: One-Sample Test for the Communicational capital variables

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Communicational capital	3.815	79	.001	.49060	.2300	.7512

According to the table above for capital variable communication sig amount equal to 0.001, which is less than 0.05, so the hypothesis H_0 is rejected in other words, the effect of office technologies in the development of communication, capital company Mazandaran meaningful.

Part II: Two separate descriptions demographics n=56 Electric Company and n=80 Telecommunications Company (Second)

A: The comparative effects of state administrative technologies in the development of human capital and Telecom Power Company province t-test compared to normal variables are used:

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
e.2 Equal variances assumed	.513	.476	3.371	134	.001	.61791	.18330	.25299	.98282	
Equal variances not assumed			3.417	75.853	.001	.61791	.18084	.25772	.97809	

According to the results above, no significant difference in the mean (Sig = .476) were and the level of (0.05) is the minimum level of significance is greater. So we use the Equal variances assumed. Since Sig. (2-tailed) of less than 0.05 is the null hypothesis is rejected one hypothesis is accepted. So at the impact of human capital between the corporate office in the electricity and telecommunications technologies is significant. Since the average effect and the average administrative technologies in the development of human capital in telecom Power Company is higher than the impact of administrative technologies in the development of human capital Telecom is greater than the power company.

(B) The comparative effectiveness of state administrative technology in the development of structural capital in the utility and telecommunications companies Mazandaran t-test compared to the normal range used:

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
sa.2 Equal variances assumed	.089	.767	4.785	134	.000	.93982	.19643	.54877	1.33088	
Equal variances not assumed			4.816	77.931	.000	.93982	.19513	.55134	1.32831	

According to the results above, the significant difference between the mean (Sig = .767) were and the level of (05 /.) Is the minimum level of significance is greater. So we use the Equal variances assumed. Since Sig. (2-tailed) of less than 05/0 is the null hypothesis is rejected one hypothesis is accepted. Thus, the effect of state administrative technologies in the development of the company's capital structure Electricity is significant. Since the average effect and the average administrative technologies in developing investment structure above the electric company is a telecommunications company so the effect of administrative technologies in the development of structural capital Telecom is greater than the power company.

C: The comparative effectiveness of state administrative technology company developing innovative electrical and telecommunication investment province t-test compared to normal variables is used:

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	2.524	.114	4.483	134	.000	.77589	.17308	.43358	1.11821
Equal variances not assumed			4.309	100.928	.000	.77589	.18007	.41867	1.13311

According to the results above, the significant difference between the mean (Sig = .114) were and the level of (0.005) is the minimum level of significance is greater. So we use the Equal variances assumed. Since Sig. (2-tailed) of less than 05/0 is the null hypothesis is rejected one hypothesis is accepted. Thus, the effect of state administrative technologies in the development of the company's innovative power and telecommunications investment is significant. And since the average of the average effect of investment in developing innovative office technology Telecom is a higher power company .Thus, the effect of investment in developing innovative office technology Telecom is greater than the power company.

D: The comparative effects of state investment in developing communications technology company administrative Electricity province t-test for comparison of normal variables are used:

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.147	.703	5.533	134	.000	1.07293	.19392	.68688	1.45899
Equal variances not assumed			5.577	77.61	.000	1.07293	.19239	.68989	1.45597

According to the results above, the significant difference between the mean (Sig = .703) and the level (0.005) is significantly greater than the minimum level. So we use the Equal variances assumed. Since Sig. (2-tailed) of less than 05/0 is the null hypothesis is rejected and one is accepted, Thus the effect of state administrative technologies in the development of capital between electricity supply and telecommunications meaningful. And the average administrative since the average effect on the development of technologies related to Telecom's capital is higher than the power company thus, the impact of technology on the development of the administrative capital of Telecom communication is more than the power company.

V. CONCLUSIONS AND SUGGESTIONS

Globalization newcomers access to advanced technologies significantly facilitate and unique opportunity for low-income countries to increase their income is provided (Mayer, 2001) since the technology world is growing at a rate astonishingly very complicated technology transfer to developing countries and regions has become. Organizations may begin to provide a measure of support and technology management to be successful, so key to the success or failure of technology in organizations, to identify and assess the needs that are essential in promoting technology transfer. (Gold, malhotra&Segars, 2001)

Successful technology transfer is responsible for its many benefits to all parties, However, several issues such as the complex process of transition, the dynamics of technology, low capacity receiver and require huge amount of resources such as financial, human, physical, technology transfer has led to still remain complex and high risk. Given these challenges, companies often pursue scheduling, cost management and quality in order to achieve this project failed, and many projects are canceled before achieving the desired result cease. (Nahar, N. Lyytinen,2006)

According to the survey results of Telecommunication and Electric Company province are recommended:

- 1 - Due to administrative technology to serve customers .
- 2 - The level of competence with the help of technology office employees to get the most ideal level of competence.
- 3 - The office utilizes technology to improve the ratio of expenses to income.
- 4 - Using technology to circumvent administrative bureaucracies dull and uncontrollable.
- 5 - Office utilizes technology in the effort to preserve the value added services .
- 6 - Using technology sharing and distribution of knowledge in the office.
- 7 - The office utilizes technology to increase the satisfaction level of employees in the organization.

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