Research Paper

Effect of Intellectual Capital on Employees Psychological Empowering a Case on in Forensic Staff of Country

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Abstract

Nowadays organizations understand that they should emphasize on what they know (intellectual capital) more than what they have (financial assets). In current research the effect of intellectual capital on employees psychological empowering in forensic staff of country is considered. In order to provide the required information, a questionnaire is developed, which is the combination based on the Bontis (2004) intellectual capital questionnaire and Spreitzer (1995) empowerment questionnaire. In this research the Kolmogorov Smirnov, Ranking Friedman, Pearson Correlation test and regression statistical techniques are implemented. The results of this research demonstrate that intellectual capital has significant effects on psychological empowerment. The research findings can help organizations to keep their positions in the high competitive and changing environment of markets.

Keywords: Intellectual Capital; Psychological Empowerment; Competitive Advantage; Human Capital; Meaningful Sense.

Introduction

Nowadays, with incidence of prompt revolutions inside the organizations such as Information Technology and global networks, increased competition in the labor market as well as services and products of other countries, organizations have been led towards human resources reduction and increasing the work forces quality. In this regard, creativity and knowledge are addressed as the excellent element in the competition area. The organizations are reluctant to satisfy their members through compulsion but they intend to internalize the commitment and increase trust at organizations. All these factors together cause to increase importance and necessity of process of empowerment in organizations. Current work environments need the employees who can make decision, offer solution, have creativity and be responsible against their jib. Besides, employees have also more expectation, they beg meaningful tasks. Therefore, managers should behave in such a way that they can meet both employees' expectations and organization objectives. This can be reached through empowering the employees and in this case, not only employees' commitment and loyalty to the organization will be higher but also this will result in some behaviors like fairness, consistency and conformity with the group (Jahanian, 2007).

Empowerment means giving power to the people (Harrison et al., 2006). Empowerment in employees provides the conditions by which their life is controlled and sufficient growth to accept more responsibilities in the future is gained (Lawler, 1994). Employees' empowerment is a process through which an empowerment culture is developed in which ideals, objectives, the boundaries of decision-making and results of their influences and efforts are shared. In such a culture, resources and competition are provided and supported to obtain required resources for

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effectiveness of activities (Rajaeipoor et al., 2006). Blanchard et al (2003) argue that plenty of managers see empowerment in such a way that provides people with decision-making. Also, lots of employees consider empowerment as to gain unrestricted freedom to perform any work. Empowerment is defined as employees' contribution in information, group forming and organizational structure design (Abdollahi and Naveh Ebrahim, 2008). Valuable employees try to preserve their value at the organization (Cheeseet al., 2007). Employees' empowerment seems to be necessary for change and stability which is the main feature of current business environment. Work forces' empowerment is hired as a new industrial solution against native and international threats (Menon, 2001). A review on literature shows that empowerment is taken into account as an important issue in management functions.

Employees' empowerment advantages

Generally, empowerment advantages can be divided into two categories of organizational and individual advantages (Greasley et al., 2008). Some advantages of empowerment are briefly presented as follows:
- Increased satisfaction of employees and clients
- A positive feeling for employees about their job and themselves
- Lack of feeling of abuse by the organization so that employees will do their best to enhance their performance
- Increased feeling of commitment and dedication and so on.

Empowerment obstacles

In order to empower employees, managers are confronted with many issues and problems which cause to prevent the organization capabilities. These problems are briefly presented as follows:
- Employees' fear and resistance against empowerment programs;
- A thread for management;
- Management systems and symbols;
- Organizational structures;
- Uncertainty of management;
- Disappointment of management;
- Lack of sufficient resources and time (Greasley et al., 2008)

Management of intellectual capital

With incidence of Information Technology revolution, information and network society as well as prompt advance of technology since 1990s, economic growth pattern has been changed fundamentally. Nowadays, knowledge (as the most important capital) has been replaced with financial and physical capital. Knowledge-based business environment needs an approach which encompasses new organizational intangible assets such as knowledge and competences of human resources, innovation, customer relations, organizational culture, systems and organizational structure. On the other hand, intellectual and social capital is another important organizational capability which can considerably help organizations to create and share the knowledge (Nahapiet and Ghoshal, 1998). By a survey from staff of Iranian Legal Medicine Organization, present study tries to examine impact of intellectual capital on employees' empowerment and present some practical and scientific suggestions for knowledge-based employees' empowerment using intellectual capitals. Therefore, it can be argued that present work is a practical research in terms of nature and objective.

Statistical universe of the research

The statistical universe is composed a complex of people or units including at least one common attribute. Under investigation society is a statistical society by which the researcher intends to study about its units' variable attribute. The statistical universe here encompasses all employees (including managerial and non-managerial levels) in Iranian Legal Medicine Organization located in Tehran. The total number of employees is 198 among which 165 and 33 employees are employed in non-managerial and managerial levels, respectively.

Sampling method

The sample is composed of the elements which form the society and sampling is selecting a percentage of a society as the representative. Since the research about all society members is time-consuming and is not cost-effective, researcher has to do sampling (Moghimi, 2006). Since the statistical universe contains incompatible groups (independent) and heterogeneous (managerial and non-managerial levels), Proportional Stratified Random Sampling is used here.

Sample size

Sample size determining is one of the most important discussions in samplings of any research so that generalizability can be met and also the research can have desirable efficiency. Mathematical methods are the most precise ones to calculate the sample size which was estimated here using below equation (Hosseini, 2003; Momeni & Fa'al Ghayyoumi, 2007).

$$n = \frac{N.Z_{\frac{\alpha}{2}}^{2}.\sigma_x^{2}}{\ell^2(N-1) + Z_{\frac{\alpha}{2}}^{2}.\sigma_x^{2}}$$

Where, N is sample size which is here 198 people. α is error level which was considered 5% like other humanities researches. σ_x^{2} is the society variance or an estimation from that (Standard deviation estimation based on Likert scale is 0.667). Z is probability of the standard normal distribution which was calculated as 1.96 according to error level (5%) from the table. ℓ is the allowable error in parameter estimation which is commonly considered as 0.07 in social and behavioral sciences researches (incorrect value is normally calculated lower than 0.1). Since the statistical universe of present study is limited and research variables are measured by five-point Likert scale of attitude measurement and grading and also Likert scales of attitude measurement and grading are considered as an interval scales, above equation was used to determine sample size which by placement at the equation, a total of 126 is obtained which encompasses about 64 percent of the statistical universe.

$$n = \frac{198.(1/96)^2.(0/667)^2}{(0/07).^2(198-1) + (1/96)^2.(0/667)^2} = 126$$

Table 1 shows the research sampling frame.

Table 1. The research sampling frame.

Organizational level	Quantity of statistical universe members	Proportion of quantity of each level member to entire the statistical universe (%)	Quantity of selected samples from each level (statistical sample)
Managerial level	33	17%	21
Non-managerial level	165	83%	105
Total	198	100%	126

Reliability of research

A research has reliability when the corresponding observed values and real values have a high correlation. The reliability concept shows that how much measurement tools in the same conditions cause same results. In other words, the probability of obtaining same date with what obtained, in case of repeat in other times (Khaki, 2003). One of the methods to calculate reliability coefficient is to use Cronbach's Alpha which is often used and can be also calculated by Statistical Package for Social Sciences (SPSS) software. Furthermore, Cronbach's Alpha lower than 60%, range of 70% and range of 80% are taken into account as poor, acceptable and good, respectively, and the closer coefficient to "one" the better result. For this purpose, using pretest method at a sample of 20 employees, reliability coefficient was specified 0.972 through

Cronbach's Alpha and using SPSS software version 20.00. However, the result was 0.92 after distribution and collection of questionnaire. Therefore, the questionnaire owes a desirable and very high reliability coefficient.

Data analysis methods

Both descriptive statistics and inferential statistics were used to analyze data using SPSS software version 20.00. Descriptive statistics was used to organize, summarize, provide the table, draw the diagram and describe the collected data. Besides, inferential statistics was used to test hypotheses. One-dimensional Kolmogorov-Smirnov Test was used to specify main variables distribution. Also, given the used scale, interval five-point Likert scale was used to collect data and parametric inferential statistics was used to study distribution of main variables of the research. Ultimately, regression analysis test was used to test hypotheses.

Distribution normality of the statistical universe

Before statistical analysis, it is required to assure normal distribution of statistical universe. For this purpose, One-dimensional Kolmogorov-Smirnov Test was used to examine normality of main research variables (intellectual capital and psychological empowerment).

Table 2. One-dimensional Kolmogorov-Smirnov Test for normality of main research variables.

Variable	Sig.	Test result
Intellectual capital	0.167	Normal
Empowerment	0.146	Normal

Hypotheses test (using inferential statistics)

Present research has one main hypothesis and three sub-hypotheses for which Pearson's correlation test and regression tests were used to examine and test. Significance level ("sig" in statistical tables) was employed to approve or reject hypotheses (Momeni & Fa'al Ghayyoumi, 2007). Before hypotheses test, it is required to determine direction, amount and severity of the correlation between intellectual capital (including human capital, structural capital and relational capital) and psychological empowerment (including sense of competence, a sense of meaningfulness, a sense of autonomy and a sense of efficacy) using Pearson's correlation test. The results of Pearson's correlation test between research variables is actually their correlation matrix which indicates a significant positive correlation between intellectual capital and the corresponding aspects as well as psychological empowerment and the components at error level of 0.05 and even 0.01. While, only structural capital has insignificant relation with sense of efficacy.

The first sub-hypothesis testing

H_0: human capital affects on employees' empowerment.

H_1: human capital does not affect on employees' empowerment.

Table 3 shows that significance level (sig) is zero and lower than significance level of 0.05 which indicates that regression model was able to describe changes at dependent variable. Adjusted coefficient of determination in the model is 0.159, therefore it can be concluded that about 0.16 percent of dependent variable (empowerment) changes can be cited for independent variable (human capital) changes and remained changes of dependent variable (psychological empowerment)- 84 percent-are due to changes caused by other factors. Multiple regression coefficient (correlation coefficient) is 0.407. This means that severity of relation of independent variable with dependent variable is 0.407 percent. In order to formulize regression equation, we need some data such as constant factor of equation (α), regression coefficient (β) as well as linear test which is specified through significance level. From table 4, constant factor of equation is 34.730. In other words, the intercept of this equation is 34.730. Also, test statistics is 12.962 and significance level of which is 0.000. Since significance level of the statistics is lower than 0.05, the statistics is significant. According to table 4 (Linear regression test results for the first sub-hypothesis about impact of human capital on psychological empowerment), human capital regression coefficient (β) is 0.239 and test statistics is 5.036 and significance level of human capital significance level is 0.000. Since "sig" is lower than 0.05, it can be concluded that human capital affects on psychological empowerment with a confidence level of 95 percent. Hence, regression equation of this hypothesis is as follows:

$$y = 34.730 + 0.239X_1$$

Also, the tests related to structural capital, relational capital and intellectual capital on empowerment were conducted and the corresponding regression equation is as follows from left to right, respectively:

$$y = 35.214 + 0.431X_1 \quad y = 34.675 + 0.111X_1$$
$$y = 40.863 + 0.202X_1$$

Hypotheses testing based on multiple regression analysis

Multiple Regression is a way to study contribution of one or some independent variable in dependent variable prediction.

Table 3. The summary of model and variance analysis for the first sub-hypothesis.

Multiple correlation coefficient (R)	Coefficient of determination (R^2)	Adjusted coefficient of determination	Sig.
0.407	0.165	0.159	0.000

Table 4. Linear regression test results for the first sub-hypothesis.

Independent variable	Regression coefficient (β)	Standardized coefficients	Sig.	t
Constant factor	34.730	-	0.000	12.962
Human capital	0.239	0.407	0.000	5.036

Table 5. Summary of model and multiple variance analysis for intellectual capital aspects.

Multiple correlation coefficient (R)	Coefficient of determination (R^2)	Adjusted coefficient of determination	Sig.
0.458	0.210	0.191	0.000

Table 6. Multiple Regression analysis test results for intellectual capital aspects.

Independent variable	Regression coefficient (β)	Standardized coefficients	Sig.	t
Constant factor	32.950	-	0.000	12.154
Human capital	0.239	0.407	0.000	5.036
Structural capital	-0.062	-0.094	0.000	-0.766
Relational capital	0.344	0.132	0.000	2.595

From table 7, constant factor of equation is 32.950. In other words, the intercept of human, structural and relational capital variables effective on psychological empowerment is 32.950. Also, test statistics is 12.154 and the significance level is 0.000. Since "sig" is lower than 0.05, this statistics is significant. Table 7 shows that multiple regression coefficient (β) of human capital, structural capital and relational capital is 0.127, -0.062 and 0.344, respectively. Also, significance level of multiple regression coefficients for intellectual capital aspects (independent variables) is 0.000. Since this value is lower than 0.05, it can be concluded that human and relational capitals have a significant positive impact on psychological empowerment with confidence level of 95 percent, while structural capital has negative impact on psychological empowerment. Hence, multiple regression equation is as follows:

$$y = 32.950 + 0.127X_1 - 0.062X_2 + 0.344X_3$$

In order to compare impacts of existing variables in regression model on dependent variable, standardized coefficients can be used. Standardized coefficients column indicates that human capital has the most impact on psychological empowerment because 0.216 unit of change is arisen in psychological empowerment variable per one unit of change in human capital variable. There is relational capital after human capital variable for which 0.132 unit of change is arisen in psychological empowerment variable per one unit of change. Ultimately, the least impact is related to structural capital which is negative. In other words, -0.094 unit of change is arisen in psychological empowerment variable per one unit of positive change in structural capital variable.

Conclusion

It can be argued by a general conclusion that intellectual capital (including human, structural and relational capital) has a significant positive relation with psychological empowerment (including sense of competence, a sense of meaningfulness, a sense of autonomy and a sense of efficacy). Finally, intellectual capital and the aspects are significantly effective on psychological empowerment of staff of Iranian Legal Medicine Organization.

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