

Human Resource Management

Elixir Human Res. Mgmt. 90 (2016) 37823-37827

Elixir
ISSN: 2229-712X

Organizational performance: The role of intellectual factors

Nima Saeedi

Young Researchers and Elite Club, Islamic Azad University, Central Tehran Branch, Tehran, Iran

ARTICLE INFO

Article history:

Received: 24 February 2013;

Received in revised form:

20 January 2016;

Accepted: 26 January 2016;

Keywords

Intellectual Capital,
Human Capital,
Structural Capital,
Relational Capital,
Organizational Performance.

ABSTRACT

By appearing information age and the promotion of interpersonal relationships and the manifest of strategic organizational, the intellectual capital hypothesis have had a remarkable growth and became one of the popular organizational major. Intellectual capital is a comprehensive expression including utilizing organizational knowledge in all activity. The influence of intellectual capital on physical education organization's (PEO) performance has been assessed in current paper. Intellectual capital dimensions in this study are: human capital, structural capital and relational capital. The proposed hypotheses by applying Pearson's correlation and regression tests have been assessed and the positive and meaningful influence on intellectual capital on organizational performance was approved that relational capital with the weight of 0.619 had the most effect on organizational performance and then structural capital variable (0.545) and human capital (0.507) were placed in next places.

© 2016 Elixir All rights reserved

Introduction

Traditionally land, labor and capital were considered as the most important assets in economic world. Since time conventional physical assets were considered to be the main determinants of the performance of any economic activity. But the fast expansion of science, technology and finally the globalization altered the pattern and structure of the production system. The new production system is basically driven by technology, knowledge, expertise and relations with stakeholders etc that may collectively be described as Intellectual Capital. In the new economic system, which is popularly known as the knowledge economy, intangibles or intellectual assets have eventually distinguished as the prominent and valuable resources (Gharoie Ahangar, 2011).

Companies like software, finance, pharmaceutical; banking, hotel etc. depend to a considerable extent on the intellectual capital for gaining revenues. Production or Manufacturing organizations use Intellectual Capital with physical assets to sharpen their competitive edge. Also enterprises that have administrated their intellectual capital better, had achieved stronger competitive advantage than their rivals (Bornemann et al, 1999). Additionally they believe that companies which had improved their own intellectual capital management compared to the others had performed better. Gharoie Ahangar (2011) explained that intellectual capital management played an important role on the long-term business performance of enterprises (Gharoie Ahangar, 2011).

In the current study researchers try to find whether the Intellectual capital can significantly influence on organizational performance of company or not.

The objective of the paper is to studying the influence of Intellectual Capital on organizational performance. After defining comprehensive definitions about intellectual capital, its dimensions and performance, we use Pearson and Regression test to survey the hypotheses. Finally some recommendations will present.

Literature review

Intellectual capital and its dimensions

While resources that generate advantage can include both tangible and intangible assets, recent work argues that, in today's economy, intangible assets have the greater potential to create organization capabilities that lead to advantage (Carmeli & Tishler, 2004; Hitt et al, 2001). Indeed, one of the more valuing enhancing forms of intangibles is an organization's knowledge-based resources or its investments in this intellectual capital (Ethiraj et al, 2005; Haas & Hansen, 2005).

Intellectual capital means anything a firm can use to increase its competitive advantage in the market place, including knowledge, information, intellectual property rights and experience (Stewart, 1997).

So, if an organization can qualify measure as well as analyze those intangible assets, it will raise its competitiveness in the industry. Intellectual capital dimensions reside in the minds of employees at both conscious and subconscious levels (Roselander et al, 2006).

The term intellectual capital includes inventions, ideas, general knowledge, design approaches, computer programs and publications. Intellectual capital is also defined as "something that cannot be touched, although it slowly makes you rich". The term 'intellectual capital' uses to enclose all of the non- tangible or non-physical assets and resources of a firm, as well as its practices, patents and the implicit knowledge of its members and their network of partners and contracts (Jacob Ben- Simchon, 2005). Intellectual capital can be defined as 'packaged useful knowledge' (Stewart, 1997), 'knowledge that can be converted into profit' (Sullivan, 2000), the 'sum of knowledge' of its members and practical translation of this knowledge into brands, trademarks and processes (Roos et al, 1997), and "the possession of knowledge, applied experience, organizational technology, customer relations and professional skills that provide a company with a competitive edge in the market place" (Edvinsson and Malone, 1997).

One of the most popular models for classifying intellectual capital is the Saint-Onge model developed in the early 1990s. It divides intellectual capital into three parts: Human capital, Structural capital; and Customer capital (Saint-Onge, 1996). This model developed by Dr. Nick Bontis. He re-explains customer capital as relational capital to include relationships with suppliers.

As the relational capital has more comprehensive concept, we apply the term relational capital as the last intellectual capita dimension.

Human capital is defined as the largest and the most valuable intangible asset in a firm. Ultimately it provides the productions or services that customers require. It includes the collective knowledge, competency, experience, skills, expertise and talents of employees within a firm. It also includes an organization's creative capacity and its ability to be creative and of course innovative. Although investment in human capital is growing, there is still no standard measure of its effectiveness in companies' balance sheets.

Structural capital is the supportive infrastructure for human capital—it is a kind of capital that remains in the organization when the employees leave at the end of the day. It includes organizational ability, processes, data and patents. Unlike human capital, it is company's property and can be traded, reproduced and shared by, and within, the organization.

And finally relational capital is a company's relationship with its customers and with its network of suppliers, strategic partners and shareholders. The value of these assets is determined by the company's reputation or image. These elements of IC are summed up in the definition of CIMA "intellectual capital is the possession of knowledge and experience, professional knowledge and skill, good relationships, and technological capacities, that when applied will give organizations competitive advantage (Gharoie Ahangar, 2011).

Table 1: 3 categories IC and some examples (Nazari Hashemi et al, 2010)

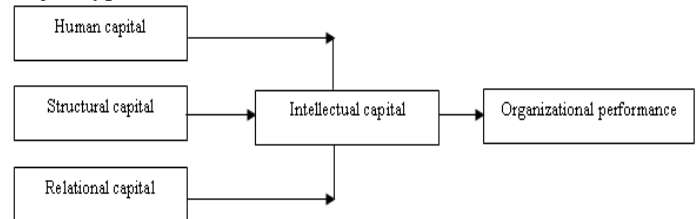
| IC categories | Examples |
|--------------------|---|
| Human capital | Motivation to increase employee competence; learning by innovating |
| Structural capital | Process development; cultural impact on management philosophy and business processes |
| Relational capital | Impact of commercial partner on relationship with customers, special interest group, the public and media relationships |

Intellectual capital & organizational performance

Intellectual capital is defined as a vital source to performance improvement (Roslender et al, 2009). Slater and Nerver found that market orientation, relational capital and organizational performance are related together. Kohli and Jaworski (1993) in their study on 222 American corporates found that market orientation is an important factor in organizational performance (Nazari Hashemi et al, 2010). Intellectual capital which is considered as the most important organization intangible asset, affect on organizational success by perceive, develop and manage the intangible assets (Nonaka & Takeuchi, 2003). In several studies, the positive and direct relationship between intellectual capital and organizational performance (Youndth, 1998).

Conceptual framework and Hypotheses

The chart below presents the effect of intellectual capital consist of human capital, structural capital and relational capital on organizational performance. Thus this article contains a major hypothesis and 3 sub-divisions.



1. There is a positive and meaningful relationship between Intellectual capital and organizational performance.

1.1. There is a positive and meaningful relationship between human capital and organizational performance.

1.2. There is a positive and meaningful relationship between structural capital and organizational performance.

1.3. There is a positive and meaningful relationship between relational capital and organizational performance.

Methodology

The study was accomplished in a society involving 174 employees at education organization's (PEO). For gathering data, library method and questionnaire were used. The questionnaire was developed in 3 parts: intellectual capital with 46, performance with 15 and 4 questions for demographic characteristics and was handed out to employees.

In sum, demographic analysis demonstrated that the most respondents are male (111 people, 64 percent) and only 23 people are female. This is naturally, because drink industry is recognized as a masculine job in Iran.

Participant ages ranged from 33 to 62. 34 people (about 20 percent) were diploma, 101 people (58 percent) were B.A and 39 people (22 percent) were M.A and Ph.D.

45 people (about 26 percent) have between 1 to 10 years, 97 people (56 percent) have between 11 to 20 years and 32 people (18 percent) have more than 21 years work experience.

For assessing questionnaire validity we asked for experts' opinions and to confirm its reliability Cronbach's alpha method has been applied. The reliability results calculated 0.81 and 0.79 for intellectual capital and organizational performance accordingly which were above the reasonable threshold (0.7) (Nunnally & Bernstein, 1994). So the reliability of questionnaires was proved.

Cronbach's alpha for each variable has calculated as table 2:

Table 2: Cronbach's alpha for all variables

| Variables | Cronbach's alpha |
|------------------------|------------------|
| Intellectual capital | 0.81 |
| Human capital | 0.88 |
| Organizational capital | 0.78 |
| Relational capital | 0.74 |
| Performance | 0.79 |

Data analyzing

Kolmogorov-Smirnov test

To survey the statistical society normality, the test was utilized. The results are shown in table 3:

Table 3: The results of Kolmogorov-Smirnov test

| Variables | IC | Human capital | Organizational capital | Relational capital | Performance |
|-----------|-------|---------------|------------------------|--------------------|-------------|
| Sig | 0.214 | 0.118 | 0.237 | 0.079 | 0.171 |

Table 4: Pearson result for hypotheses

| Hypotheses | R | sig | Result |
|--------------------------------------|-------|-------|----------|
| Intellectual capital and performance | 0.519 | 0.000 | accepted |
| Human capital and performance | 0.396 | 0.000 | accepted |
| Structural capital and performance | 0.481 | 0.021 | accepted |
| Relational capital and performance | 0.578 | 0.017 | accepted |

Table 5: Regression Result for Hypothesis 1

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|----------------------|-----------------------------|------------|---------------------------|-------|------|
| | B | Std. Error | Beta | | |
| (Constant) | .476 | .343 | | .594 | .033 |
| Intellectual capital | .645 | .085 | .542 | 5.367 | .012 |

a. Dependent Variable: Performance

Table 6: Regression Result for Secondary Hypotheses

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|--------------------|-----------------------------|------------|---------------------------|--------|------|
| | B | Std. Error | Beta | | |
| (Constant) | 2.218 | .472 | | 10.258 | .003 |
| Human capital | .507 | .121 | .325 | 4.623 | .000 |
| Structural capital | .545 | .071 | .371 | 5.219 | .019 |
| Relational capital | .619 | .065 | .429 | 7.241 | .000 |

a. Dependent Variable: Performance

Table 7. Final scores of Intellectual capital indices

| Indices | Human capital | Organizational capital | Relational capital |
|------------------------|---------------|------------------------|--------------------|
| Human capital | 1.00 | 0.65 | 0.52 |
| Organizational capital | 0.65 | 1.00 | 0.24 |
| Relational capital | 0.52 | 0.24 | 1.00 |

Table 8. AHP test results to categorize IC indices

| Indices | Human capital | Organizational capital | Relational capital | Average |
|------------------------|---------------|------------------------|--------------------|---------|
| Human capital | 0.46 | 0.34 | 0.30 | 0.37 |
| Organizational capital | 0.30 | 0.53 | 0.14 | 0.32 |
| Relational capital | 0.24 | 0.13 | 0.56 | 0.31 |

As table 3 shows the sig amounts for all variables are more than research error (0.05), so the normality of statistical society is proved. Therefore some parametric tests will be used.

Pearson correlation test

Regarding the study of the relationship between intellectual capital and its components with performance, Pearson test was applied. Results are shown here:

Table 4 has shown there are positive and meaningful correlations between performance and intellectual capital, human capital, structural capital and relational capital.

Regression test

The data was tested using the linear regression analysis to look at the influences of intellectual capital to the performance of the respondents. The results are shown in tables below.

Table 5 indicates the positive and meaningful influence of intellectual capital on education organization's (PEO) performance.

Table 6 shows the outcome of regression analysis for performance as dependent variable. It's clarified the "human capital" (0.507) has definitely influence the development of performance and then "structural capital" (0.545) and "relational capital" (0.619), social skills" were put in other steps in the direct order.

It means intellectual capital and its all aspects have positive and meaningful impact on organizational performance.

AHP technique

The data was tested using the AHP technique to classify the intellectual capital indices. The results are shown in tables below.

Inconsistent matrix and average of every dimension are presented in table 8:

It is clarified organizational performance is related to human capital (0.37) and organizational capital (0.32) more than relational capital.

Conclusion and discussion

The current study with object of studying the influence of intellectual capital on organizational performance was carried out in 174 education organization's (PEO) employees. The findings of using Pearson test account for positive and meaningful relationship between intellectual capital and its dimensions with organizational performance. Afterward by using regression test, the positive and meaningful effect of intellectual capital and its indices made certain which relational capital part was prominent. It indicates that the managers are capable to promote their organizational performance by managing their intellectual capital.

The results of using Pearson test show that there are positive and meaningful relationship between intellectual, human, organizational and relational capital on organizational performance.

Then by applying regression test, the influence of intellectual capita and its indices on performance was analyzed which relational and human capital were the most and the least important factors that affect on organizational performance.

As relational capital has the most influence on organizational performance, we can recommend to the organization's chairman to improve their relational capital by "teaching customer-oriented behavior to employees who are related to customers directly", "improving customer-oriented attitude among all employees", "empowering employees to be able to present required services to customers" and "on time responsibility to customers' exceptions".

Structural capital was placed in second place. So to improve this kind of capital, some recommendations like "pay more attention to applied research and development", "applying modern and advanced structures in all organizations' parts" and "reengineering for some key processes which are so valuable for customers with object of improving processes characteristics (cost, time, quality etc." are useful.

And finally "re-hiring retired employees to utilize their experience" and "getting some courses for employees to improve their skills and expertise" are the recommendations to improve human capital.

References

1. Bornemann, M., 1999, Empirical analysis of the intellectual potential of value systems in Austria according to the VAIC.
2. Carmeli, Abraham, and Tishler, Ashler, 2004, "The relationship between intangible organizational elements and organizational performance", *Strategic Management Journal*, 25, 1257-1278
3. Edvinsson L, Malone MS (1997). Intellectual capital: The proven way to establish your company's real value by measuring its hidden brainpower. London: Judy Piatkus.
4. Ethiraj, Snadil, K., Prashant, Kale, Krishnan, M. S., and Singh, Jitendra, 2005, "Where do capabilities come from and how do they matter? A study in the software services industry", *Strategic Management Journal*, 26, 25-45
5. Gharoie Ahangar, Reza, 2011, the relationship between intellectual capital and financial performance: An empirical investigation in an Iranian company, *African Journal of Business Management* Vol. 5(1), pp. 88-95, 4 January, 2011
6. Haas, Martine R. and Hansen, Morton, T., 2009, "When Using Knowledge Can Hurt Performance: The Value of Organizational Capabilities in a Management Consulting Company," *Strategic Management Journal*, 26, 1-24.
7. Hitt, Michael, A., Bierman, Leonard, Shimizu, Katsuhiko and Kuchhar, Rahul, 2001, "Direct and moderating effect of human capital in strategy and performance in professional service firms: a resource-based perspective", *Academy of Management Journal*, 4, 13-26
8. Jacob ben-simchon (2005). 'Reporting of intellectual capital in research intensive SME's final Dissertation', The University of Inholland.
9. Nazari Hashemi, R., Naeaeji, M. Javad, Abbasalizadeh, Mansoureh and Beikkhakhian, Youkabad, 2010, "The influence of knowledge management and intellectual capital factures on the organizational performance: A case study of INGO", 2nd international conference of intellectual capital, Zanjan, Iran
10. Nonaka, I. and Takeuchi, R., 2002, "A dynamic theory of organizational knowledge creation", *Organization Science*, Vol. 5 No. 1, pp. 14-37.
11. Nunnally, J. C., & Bernstein, I. H. (1994), "Psychometric theory", Vol. 3, New York: McGraw-Hill.
12. Roos, J., Roos, G., Dragonetti, N., and Edvinsson, L., 1997, *Intellectual Capital: Navigating in the New Business Landscape*, Macmillan Business, London.
13. Roslender R, Fincham R. (2006) Intellectual capital: who counts, controls? *Accounting and the Public Interest*;4:1-23.
14. Roslender, R., Stevenson, J., and Hahn, H., 2006, "Employee wellness as intellectual capital: an accounting perspective", *Journal of Human Resource Costing and Accounting*, 10 (1), 48-64

15. Saint-Onge H (1996). "Tacit knowledge: the key to the strategic alignment of intellectual capital". *Strateg. Leadersh.*, 24(2): 10-14.
16. Stewart, Thomas, A., 1997, "Intellectual capital: the wealth of new organizations", London, Nicholas Brealey Publishing
17. Sullivan, P. H., 2000, "Value-driven intellectual capital: how to convert intangible corporate assets into market value", New York, John Wiley and sons
18. Youndth, M A., 2000, Human resource consideration and value creation: the mediating role of intellectual capital, Paper delivered at National Conference of US Academy of Management, Toronto, August.