Identifying Effect of Intellectual Capitals and Creativity on Studied Business Performance of Parsian Bank Branches of Tehran Province


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ABSTRACT

Aim of this article is to identify effect of intellectual capitals and creativity on business performance of Parsian Bank branches of Tehran province. Type of article is applied and the article shows survey and correlation method between variables and population includes all employees of Parsian Bank branches of Tehran province who are 450 individuals from 98 branches. Sample volume is determined 200 individuals using Cochran formula. Also, data obtained from comments of statistical sample that are asked from individuals using questionnaire are analyzed and Cronbach’s alpha coefficient is used for determining reliability of the questionnaire and also, content validity is used for determining validity of the questionnaire. And analysis of data is done in tow levels of descriptive and inferential. In descriptive level, demographic features of sample are described using statistical characteristics such as frequency, percent frequency, and diagrams, and in the inferential level, hypothesis test of the research model is carried out using Kolmogorov – Smirnov and also using structural equations modeling from PLS software. With respect to the research hypothesis, it can be concluded that human capital has direct effect on the business performance and structural capital has not direct effect on the business performance and also relational capital has not effect on the business performance. And creativity has direct effect on the business performance.

Keywords: intellectual capital, creativity, business performance.

Introduction

Over few last years, many debates about intellectual capital are made in different communities. Thinkers and researchers of different fields such as sociology, economy, and management believe that there has been fundamental change in the communities. Intellectual capital and related strategic concepts are considered as the important components and elements of the organization survival and competitive position maintenance. For instance, MCElroy (2000) believes that knowledge and knowledge workers are key factors of the organization in achieving sustainable development and are one of the main competitive sources of companies’ future. In addition, Martenson (2000) claims that intellectual capital (capital is the certain prerequisite for productivity and flexibility of the public and private organizations and therefore focused on it and understanding how it relates to other sources and organization assets are responsibility of managers and administrators (Martensen 2000). Intellectual capital, whether in micro management level or in management of organizations and businesses, can create new understanding of economic - intellectual systems and help managers to better direct the system (Hosseini, 1390). Today, knowledge is more preferable compared to other factors of production such as land, capital, workforce, machinery, so that in knowledge economy, knowledge is considered as the most important factor of production and the most important competitive advantage of the organizations (Syderman, 2002). One of knowledge features is its intangible and it is very difficult to value and measure it, knowledge is considered as the most important intangible assets components. Although in the past most assets of organizations are tangible, but today, most assets of organizations are intangible (Sullivan and Sullivan 2000). In knowledge economy, success of the organizations depends on the management ability of these intangible assets and for managing these assets, they, first, should be identified and measured accurately (Sanchez 2000). In this economy, the use of knowledge as a production factor had little role, but in knowledge economy, knowledge or intellectual capital is preferably as a wealth production factor compared to other tangible and physical assets. In knowledge economy unlike industrial economy, intellectual assets and especially human capitals are the most important assets of the organizations and potential success of the organizations is rooted in intellectual capability. So, how to manage intellectual capital in the organizations and examining their competitive power in advancing organizational objectives can play significant role (Bathaei, 1385).
Problem description
In Parsian Bank, managers believe that competition and obtaining competitive advantages are more achievable and possible in the area of the world trade by having codified strategy and policy, and focused on the intangible assets and their proper management can provide high competitive power for this organization and get out competitors from the competition area up to high limit. So, basic question of the research is raised as follow: Does intellectual capital and creativity affect business performance of Parsian Bank branches?

The importance and necessity of research
New changes in the economy, globalization and its consequences lead to more focus on companies’ performance. Shareholders, investors, customers, managers, workers, suppliers of raw materials, distributors, in situations and public entities, institutions offering facilities, and as such all these involved with different institutions have always evaluated these institutions. In the past, more evaluation are made for evaluating performance of the companies with financial indicators and evaluation of financial and tangible assets of an institution. Today, new model of assets is presented and generally, organization assets are divided into two categories of tangible and intangible assets that generally, intangible assets are called intellectual capital and assessments have tendency toward evaluating intangible assets (intellectual capital).

So, in today’s knowledge – based world, organizational capabilities are based on knowledge and intellectual capital and managers should understand that what capabilities are necessary for maintaining competitive advantage. So, knowledge assets and intellectual capital are changed to the strategic lever for managing business performance and continuous innovation of the company. So, the company not only produces the service and product but also create value added for staying in new economy and in this era, main challenge of managers is to prepare an appropriate environment for developing human mind in the knowledge – based organization. Knowledge management and intellectual capital are became the main skill of managers in the organizations.

Research questions
Primary question:
1- Does intellectual capitals and creativity affect business performance of Parsian Bank branches?

Secondary questions
1- Do intellectual capitals have effect on business performance of Parsian Bank branches?
1) Does human capital have effect on the business performance?
2) Does organizational capital have effect on the business performance?
3) Does relational capital have effect on the business performance?
2- Does creativity have effect on the business performance of Parsian Bank branches?

5. Research objectives
Primary objectives:
1- To identify effect of intellectual capital on business performance
2- To identify effect of creativity on business performance

Secondary objectives:
1- To identify effect of human capital on business performance
2- To identify effect of organizational capital on business performance
3- To identify effect of relational capital on business performance

6. Research conceptual model

[Diagram]
- Intellectual capital
- Human capital
- Organizational capital
- Relational capital
- Creativity
- Business performance
Identifying Effect of Intellectual Capitals

(Bontis 2004)

**Hypothesizes**

Primary hypothesis:
1- Intellectual capital has effect on the business performance
2- Creativity has effect on the business performance

Secondary hypothesis
1- Human capital has effect on the business performance
2- Organizational capital has effect on the business performance
3- Relational capital has effect on the business performance

**Definition of research variables**

**Intellectual capital**

Theoretical definition: often, term "intellectual capital" is synonymous with "intangible assets". While, base on organization for Economic cooperation and Development definition, intellectual capital is considered not as a synonym but as a subset of intangible assets of a business. In other words, there are intangible factors that reasonably are not part of the intellectual capital, such as reputation of an organization. Reputation of the organization can be by – product (or result) of the logic application of the organization intellectual capital, but cannot be part of it.

Operational definition: intellectual capital means a knowledge that has potential of converting to profit. In intellectual capital has a host of organizational values such as profitability, strategic localization (Market share, good will, leadership and excellence, reputation), acquisition of innovation from other companies, customers loyalty, reducing costs, etc (Harrison and Sullivan 2000). Intellectual capital in this research are defined as the overall existence of knowledge, information, technology, experience, learning, organizational competences, team relational systems, customer relations and brands that create value for the company.

**Creativity**

Theoretical definition: creativity is known as the ability of thinking about affairs in new and unusual ways and reaching to unique solutions for problems (Santrak 2008).

Operational definition: organizational creativity is defined as follow: organizational creativity is known as the development or acceptance of an idea or behavior in business that is new for whole the organization. Organizational creativity is the reality of creating technology or new management works related to the new products or processes. Organizational creativity management can be defined as the management method to prepare an organization for the creativity, encouraging and simplifying extension of creative ideas with a basic and immediate movement.

**Business performance**

Theoretical definition: competitiveness or competitive power related to the all system pillars of a business includes inputs, processes and outputs. In other words, a business is competitiveness and has high competitive power when have competitive inputs, processes and outputs (Divandari et al, 1387). Accordingly, in identifying effect of the intellectual capitals and creativity on the business performance for effect between intellectual capital and creativity on the input performance, process performance, and output performance of the business system.

Operational definition: In this study, net financial performance and net assets of a commercial unit and its performance are considered and for measuring business performance, first, component related to it are selected and components are measured under questions subjectively and objectively. Business performance components include customer performance (satisfied and loyal customer), market performance (high sale volume and market share) and financial performance (profit, profit margin, and capital return compared to competitors).

**Research background**

Research background is examined in two internal and external parts as following table:

<table>
<thead>
<tr>
<th>Row</th>
<th>Researcher name</th>
<th>Research title</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ghlichli (1384)</td>
<td>Examining the role of intellectual capital and social capital on obtaining competitive advantage (Case study: two top obs khodro company)</td>
<td>Obtaining results suggest positive and significant relationship among social capital with intellectual capital and its dimensions in pars khodro company. Also, positive and...</td>
</tr>
</tbody>
</table>
**Research Methodology**

Present research, with respect to the examination of relationship between variables, is descriptive and survey research. Population includes 450 employees from 98 branches of Tehran Parsian Bank.

With regard to high volume of population, Cochran formula is used:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Rezaei Dolat (1385)</td>
<td>A model for measuring effectiveness of market-orientation on business performance with respect to the marketing capabilities</td>
<td>Research results showed that business performance in current competing space is affected by market-orientation integrity and marketing capabilities. Also, market-orientation culture and market intelligence affect marketing capabilities and marketing capabilities affect business performance. Statistical analysis shows that indirect effect of market-orientation culture and market intelligence on business performance is more than direct effect. This issue indicates that marketing capabilities play central role in the relationship of market-orientation with business performance.</td>
</tr>
<tr>
<td>3 Divandari et al (1387)</td>
<td>The effect of market-orientation on business performance</td>
<td>Findings show that in the view of experts, totality of conceptual model of market-orientation on business performance in Iran is approved by some corrections. Three factors of market-orientation, value creation and business performance are of equally important.</td>
</tr>
<tr>
<td>4 Benitez et al (2000)</td>
<td>Software companies of Egypt with subject of the relationship between intellectual capital and organizational performance</td>
<td>Results of the researcher are not reported due to lack of appropriate data for measuring intellectual capitals</td>
</tr>
<tr>
<td>5 Benitez et al (2004)</td>
<td>Examining relationship between intellectual capitals and business performance</td>
<td>There is interaction among capitals components and these capitals has relatively moderate effect about 20 or 30% on business performance</td>
</tr>
<tr>
<td>6 Buzbura (2004)</td>
<td>Relationship between intellectual capitals and organizational performance</td>
<td>These results are obtained: both human capitals and customer affect book and market value of companies. In this research, book and market value of companies is measured qualitatively and in the form of questionnaire due to lack of accurate data. In addition, there is powerful relationship among human capital and customer.</td>
</tr>
<tr>
<td>7 Wang et al (2005)</td>
<td>Relationship between intellectual capitals and organizational performance</td>
<td>Relationship between intellectual capitals and performance is analyzed that following results are obtained: there is interactions among intellectual capital components and these capitals have relatively moderate effect on business performance</td>
</tr>
</tbody>
</table>
Identifying Effect of Intellectual Capitals

So, number of sample individuals will be 200.

Information gathering method (field, library, etc)
1) Library information
   • Books and Persian and Latin articles
   • Information sites of Internet network
2) Field studied:
   • The use of questionnaire for gathering information from specialists.
C) Information gathering tools (questionnaire, observation, test, fish, table, sampling, laboratory equipment and information banks and computer and satellite networks, etc)
In this research, three separate questionnaires about intellectual capital and creativity and business performance are used for gathering information.
D) Statistical analysis of data is that information gathered descriptively is analyzed with respect to collect hypothesis. In descriptive part, first, frequency distribution table, central indicators (mean), dispersion (standard deviation) are calculated and diagrams are also drawn. Statistical method of regression is used with respect to the hypothesis and PLS and related Statistical software is used for analysis.

Research time territory
Time period of conducting present research was from Mehr 1394 to Bahman 1394 about 4 months. Research time territory was taken one month for distributing and gathering information of each questionnaire.

Validity of data gathering tools (questionnaire)
In this research, CVR method is used for measuring content Validity of questionnaire and a questionnaire is prepared under the title of experts questionnaire in which experts are asked to explain their idea about appropriateness and inappropriateness of items related to each variable. The questionnaire was distributed between 12 experts who had expertise in the related area and also experienced managers of the bank. Finally, by correcting or removing inappropriate questions, 52 questions were agreed for intellectual capital, 23 questions for creativity, 10 questions for business performance with coefficient 1 or 99 that is 0/56 higher than minimum acceptable value for 12 assessors, ensuring that agreement is not resulted from accident or chance. So, it can be claimed that measurement tools of the research are of high validity. Formula used to calculate the content validity is as follow:

CVR coefficient Formula:

\[
CVR = \frac{\left( ne - \frac{N}{2} \right)}{N/2}
\]

Reliability of data gathering tools (questionnaire)
Internal consistency reliability is the reliability among different items that all measure different feature or characteristic. For measuring internal consistency reliability, different methods are used that Cronbach's alpha is one of the most widely used methods. In Cronbach's alpha method, score of individual items is obtained with a total score of tools or correlation test. And it is expected that individuals who obtain given score in given items, will be the same in another items, because all designed tool items are along measurement of a given thing or characteristic.
In present research, internal consistency reliability is used through Cronbach's alpha in order to measure reliability of data gathering tools (questionnaire).

Alpha coefficients of the research variables are as following table.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of Participants</th>
<th>Number of items</th>
<th>Cronbach's alpha coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human capital</td>
<td>200</td>
<td>20</td>
<td>0/87</td>
</tr>
<tr>
<td>Relational capital</td>
<td>200</td>
<td>17</td>
<td>0/90</td>
</tr>
<tr>
<td>Structural capital</td>
<td>200</td>
<td>15</td>
<td>0/92</td>
</tr>
<tr>
<td>Creativity</td>
<td>200</td>
<td>23</td>
<td>0/88</td>
</tr>
<tr>
<td>Business performance</td>
<td>200</td>
<td>10</td>
<td>0/76</td>
</tr>
</tbody>
</table>

With respect to the results of the above table that alpha coefficients of all variables of the research are above 0/7, Malhotra (2008) suggests this value has confirmed internal compatibility of items.
Data analysis method

In order to analyze data, after determining that we should use parametric test (prerequisites for the use of parametric test are normality distribution of variables that are determined through central limit theorem or Kolmogorov - Smirnov test, continuous data that is traceable and interoperable through being pseudo - distance of the scale, and equality of variances) and after determining type of hypothesis that is relational and given that number existing variables is more than two, confirmatory factor analysis and structural equations modeling are used - Also, variance analysis tests are used for determining the effectiveness of demographic factors.

Results of hypothesis based on effect coefficient and T- statistics

<table>
<thead>
<tr>
<th>Hypothesis result</th>
<th>Effect coefficient</th>
<th>Student's T-statistic</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis approval</td>
<td>0/27</td>
<td>2/21 ≥ 1/96</td>
<td>Human capital→ organization performance</td>
</tr>
<tr>
<td>Hypothesis disapproval</td>
<td>%35</td>
<td>0/541</td>
<td>Relational capital→ organization performance</td>
</tr>
<tr>
<td>Hypothesis disapproval</td>
<td>- %7</td>
<td>0/624</td>
<td>Structural capital→ organization performance</td>
</tr>
<tr>
<td>Hypothesis approval</td>
<td>0/83</td>
<td>27/71 ≥ 1/96</td>
<td>Creativity → organization performance</td>
</tr>
</tbody>
</table>

As we seen from the table, results are interpretable based on significance of the hypothesis, direction and intensity of the relation.

Secondary hypothesis 1: Human capitals affect the business performance.

Based on obtained results, with respect to higher T – statistics than 1/96, null hypothesis is rejected and research hypothesis based on direct effect of human capitals on business performance is approved. So, human capitals have direct effect with intensity of 0/27 on business performance.


Based on results obtained from structural equations modeling, with respect to lower T statistics than 1/96, null hypothesis cannot be rejected and research hypothesis based on direct effect of organizational capitals on business performance is not approved. Secondary hypothesis 3: Relational capitals affect business performance.

Based on results obtained from structural equations modeling, with respect to lower T statistics than 1/96, null hypothesis cannot be rejected and research hypothesis based on direct effect of relational capitals on business performance is not approved. So, creativity with intensity of 0/83 has direct effect on business performance.

Results, recommendations and limitations

First part: results from the research hypothesis test

For responding to the research questions, the research hypothesis should be tested. In order to examine present research hypothesis, structural equations model is used that determines whether there is relationship between structures and with confirmatory factor analysis, it enables person to accept or reject his theories. In examining hypothesis test using the structural equations model in confidence level of 95%, if the absolute value of T – statistic is lower than 1/96, null hypothesis is resulted, and if absolute value of T – statistics is higher than 1/96, hypothesis 1 is resulted. Approving null hypothesis means rejection of the research hypothesis and approving hypothesis 1 means approval of the research hypothesis. The higher absolute value of the correlation coefficient, more accurate prediction of one variable from another based on correlation, because when two variables have more common aspect with each other, one can obtain more information about second variable from information related to the first variable and it can be said that when the correlation is complete, prediction will also complete (Mirzaei 1389, 618). Standardizing latent variables, interpretation of relationships between latent variables will be facilitated. Since these relationships are introduced in the form of correlation not covariance, so their relative
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Importance will be more clear. Also, it helps identify the relative role of independent latent variables in effectiveness on the internal variables. Now, we examine the results of the research hypothesis.

**Result from first hypothesis test**
First hypothesis: Human capitals affect business performance
Based on the obtained results, with respect to higher T – statistics than 1/96, null hypothesis is rejected and research hypothesis based on direct effect of human capitals on business performance is approved. So, human capitals, with intensity of 0/27 have direct effect on business performance. With the conclusion of the first hypothesis test of the research that there is direct relationship between human capitals of the company and business performance, the first question of the research has been answered positively that is: Is there direct relationship between human capitals and business performance? So, it can be concluded that branches of Parsian Bank that present research is comprised them, have been able to take step for better managing and promoting business performance by employing qualified and skilled manpower and cause their distinguishes from the competitors.

**Result from second hypothesis test**
Second hypothesis: Structural capitals affect business performance
Based on results obtained from structural equations modeling, with respect to the lower T statistics than 1/96 value, null hypothesis cannot be rejected and the research hypothesis that there is direct effect of organizational capitals on the business performance is not approved.

With conclusion from second hypothesis test of the research that there is no direct relationship between structural capitals of the company and business performance, the second question of the research has not been answered positively that is: Is there direct relationship between structural capitals and business performance? So, it can be concluded that branches of Parsian Bank have failed to manage effectively and promoting their structural capitals and promote business performance through it.

**Result from third hypothesis test**
Third hypothesis: Relational capitals affect business performance
Based on results obtained from structural equations modeling, with respect to the lower T statistics than 1/96 value, null hypothesis cannot be rejected and the research hypothesis that there is direct effect of the relational capitals on business performance, is not approved.

With the conclusion from third hypothesis test of the research that there is direct relationship between relational capitals and business performance, the third question of the research has not been answered positively that is: Is there direct relationship between relational capitals of the company and business performance? So, it can be concluded that branches of Parsian Bank cannot take a step for managing effectively and their relational capitals promotion and promoting business performance of the branches through it.

**Result from forth hypothesis test**
Forth hypothesis: Creativity affects the business performance
Based on obtained from results, with respect to the higher T- statistics than 1/96 value, null hypothesis can be rejected and the research hypothesis that there is direct effect of creativity on the business performance, is approved. Therefore, creativity affects business performance with the intensity of 0/83.

With the conclusion of forth hypothesis test that there is direct relationship between creativity and business performance, forth question of the research has been answered positively that is: Is there direct relationship between creativity and business performance? Hence, it is concluded that Parsian Bank branches that are population of the research, have been able to take a step for effective management and promoting their business performance by employing creative and qualified manpower, and cause their distinction between competitors.

**Second part: Research recommendations**
Introducing applied and managerial recommendations
1) In the view of the research from the first hypothesis test that there is direct relationship between human capital and business performance, recommendations are introduced in order to reinforce and growing human capital in the branches of Parsian Bank:
   ● Training and empowering employees: Related
   Organization can hold different and required courses such as skills training, training in the beginning of employment, management improvement trainings, and types of related courses in the form of internal trainings of the organization and external trainings of the

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organization through the training need assessment based on educational standard and stated needs by different units.

- Employees participation in team and group works: Related organization can take act for participating in group works through implementing and applying programs for encouraging and creating motivation in the employees. For example, with respect to the importance of the team work and participation of employees in quick responding to the challenges and creativity in advancing programs in different areas, organization can form some committees for doing group works.

- Communicate effectively with employees: In line with the strategic objectives of communication and information development of employees, related organization can create effective relational channels such as news site, local newspaper, voice of colleague and effective and two – way relational with its employees.

- Hiving the most qualified employees in the industry: Related organization can employ and apply the most qualified persons in the related industry for doing tasks through applying comprehensive employment program.

2) With respect to the result from the second hypothesis test that there is direct relationship between structural capital and business performance, followings are recommended in order to reinforce and growing the structural capital in Parsin Bank branches:

- Reducing time of transactions: Related organization can reduce the time of doing transactions through applying professional and trained employees and also the use of advanced and updated equipments.

- Promoting innovation, entrepreneurship and organizational development culture: Related organization can promote the culture of innovation, entrepreneurship and organizational development through the use of new ideas of employees, supporting research projects and activities and small pilot plans, appreciating idea, training and human sources development owners, managers’ membership in the committee of recommendation and improvement.

3) With respect to the result from the third hypothesis test that have is no direct relationship between relational capital and business performance, followings are recommended in order to reinforce and growing relational capital in Parsin Bank branches.

- Identifying, categorizing and predicting needs and expectations of the customers: with respect to the customer – oriented concept as one of the organizational values, managers of the related organization can identify and categorize the customers as one basic stakeholders of the company based on CRM instructions and different indicators such as customer importance for the organization, loyalty rate and etc. Then, processes and relational channels such as regular and continuous communications with customers and if necessary, holding face to face meeting, with them are created in order to understand current and future needs of different categories of the customers and their potential needs and expectations are met.

- Effective and quick respond to the feedback of the customers: Related organization managers should receive complaints and comments of the customers for quick and effective response according to the instruction of "dealing with comments and complaints from customers" through some units such as Quality Assurance of with rawals and then, response to their feedback quickly and effectively. Important factors such as access of customers to related officials, accountability of the officials to the needs, flexibility of officials and organization can use in evaluating effectiveness of this.

4) Result from the forth hypothesis test that there is direct relationship between creativity and business performance is presented in order to reinforce and growing innovation and creative ideas in Parsian Bank branches as follows:

- Creative space: one of the important solutions of the innovation emergence is creating driving space of the creativity. It means that management should always be ready for hearing new ideas from everyone in the organization. In fact, organization should search this type of thoughts and it should not be waiting to see new though.

- Creating special unit for creativity: sometimes, specific group of employees are hired for innovation and creativity and in some organizations, this group is called research and development unit. These units spend their time to find new ideas for introducing services or
making product, and sometimes, they conduct pure research.

**Introducing recommendations for future researches.**

1) Present research was carried out in the banking industry and on the employees of Parsian Bank branches. With respect to the importance of the role of intellectual capital and creativity in the organizations, researchers in the future researches can examine relationship between the variables in the research conceptual model in the service organizations and industries.

2) Researchers in the future researches can measure influence of other effective and determinative factors such as social capital of the company on the business performance of other banks or organizations.

**Third part: Research limitations**

1) Main limitation of the research has been its population (employees of Parsian Bank branches of Tehran province). So, it generalization to other banks of the country requires information related to those banks.

2) Tools limitation so that in the research, questionnaire is used. So, researcher has not any control on truth of speech of the respondent.

3) This article is carried out in 4 months’ time period in 1394. Therefore, its generalization of achievements to future years is related to obtain updated information.

**Resources**


Mal Amiri, Mansouri 1386. Creativity, Emam Hossein University Publications.

Mirzaei, Khalil 1388. Research, Researcher and Bulletin Writing. Tehran, Jameshenasan.

