The Effect of Intellectual Capital on Organization’s 
Financial Performance

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Abstract

Intellectual capital is described as intangible assets that can be a source for sustainable competitive advantage. Last researches have shown a meaningful and positive correlation between intellectual capital and organization performance and goal of this research is to strengthen these findings and research about the impact of intellectual capital (human capital, structural capital and relational capital (customer) on financial performance of Guilan Melli bank branches with profit factors, resource absorption, allocating resources and debt collection Bonitess valid Psychometric questionnaire was used for doing this research after localizing and performing suitable changes about the effect of intellectual performance on bank’s financial performance. In order to examine for using in Iranian organizations, in this research for analysis of validity of questionnaire, confirmatory factor analysis and to examine reliability of questionnaire, Cronbach's alpha method were used that by this methods, reliability and validity were confirmed and for dependent variables (performance factors), the method of analyzing the relation among independent variables (intellectual capital dimensions), path analysis, and Lizrel software were applied. The research findings show that there is positive and meaningful relation between intellectual capital and bank financial performance and from among intellectual capital dimensions, human capital and then relational capital and at last structural capital have the most effect on bank financial performance respectively.

Keywords: Intellectual Capital, Human Capital, Structural Capital, Relational Capital, Organization Performance, Financial Performance.

Introduction:

Emergence of information era and knowledge based economy, has brought organizations from emphasis on financial resources to intangible assets. Banking industry is like parts that because of some reasons, we can search more intangible resources there and their strategic importance can be obtained (Cinca 2003). The amount of success and the performance of organizations was evaluated according to financial output in past time but today
organizations’ success is measured by another criteria called intellectual capital (Bnotis 1998). In current knowledge based communities, the output of used intellectual capitals is more important than the output of financial capitals, this means that compared to intellectual capitals, role and importance of financial capitals in success and performance of organizations have decreased significantly (Talebi & Associates). Iran Melli bank like other knowledge based organizations, is not excluded from this matter. Thus methodology and explanation of intellectual capital impacts on organization performance is one of the strategic requirements in order to increase efficiency. In this research, researcher wants to recognize major components and variables of intellectual capitals and to examine its role on bank’s financial performance. Then, in this chapter, the problem, the importance and necessity of executing research, research questions and hypothesis are explained.

Problem Statement

In today competitive world, wherever organizations do their affairs, always need to improve their performance and should try to reach the best performance. One of the methods for examining improvement is analyzing effective factors that this leads the intellectual capital to receive such an importance, therefore intellectual capital includes all knowledge based resources that creates value for organization but it isn’t entered in organization financial statements (Hosseynpour & Azar 2011). In modern economy, wealth production and economic growth mainly roots from intangible assets (intellectual), so intellectual capital is considered as major resource of economic development and other traditional factors of production like land, labor force and financial capital are placed in the following importance ranks, in such conditions, intellectual capital is counted as key factor to upgrade the performance of organization (Beygi & Fetres 2010). Today companies have resources which are essential for high financial performance and competitive advantage that can be purchased and soled easily in open markets. The second kind are intangible, valuable, irreplaceable, rare and strategic intangible assets which are able to create competitive advantage and superior financial performance (Riahi-Belkaoui 2003). Intellectual capital is the provider of a new station and resource that through this, the organization can compete (Sinaee et al 2011). because of the broadness of intellectual capital concept, researchers that has worked in this field, each one has offered their particular classification but generally intellectual capital consists of three main components and has mutual relation as the following:

1. Human capital: All of the abilities that includes attitude, skill, knowledge, creativity, existing mental knowledge and people and managers’ experience of an organization.
2. Structural capital: Events and interactions among people into the organization and what remains in organization when people leave it.
3. Customer capital: It defines formal and informal relations of an organization with external beneficiaries and their understandings about organization and also exchange of information between them and organization. In some studies, customer capital has also named relational capital (Rog, Kirk 2001).

So, according to the significance of intellectual capital effect on organizations’ performance improvement, the researcher decided to examine the amount of effectiveness of intellectual capital dimensions on financial performance of Guilan Melli bank branches.
Previous Research

1. Sinaee and Hajipour and Taheri (2011) did a research and examined the relation between intellectual capital and performance of productive companies in share exchange and results showed that there is a positive and meaningful between components of this research intellectual capital means innovation capital and customer capital with financial performance of company.

2. Mojtabahzadeh and Alavi Tabari and Mehdizadeh (2011) examined the relationship between intellectual capital (human, customer and structural)and insurance industry performance from the attitude of managers and results showed that there is a significant relation between intellectual capital and its domains in a separated analysis and independent according to performance. while in simultaneous analysis there is just a meaningful relation between structural capital and human capital with the performance.

3. Yazdani (2006) in his research examined the mutual relations among intellectual capital and the kind of their effects on the performance of Mellat bank. In this research ,in order to calculate the value of organization performance ,covering analysis of data has been used. Also this research showed that different components of intellectual capital have not any considerable effect on Tehran Mellat bank branches.

4. Chen et al (2005) examined the relation between intellectual capital with market value and financial performance of accepted companies in Taiwan share market during 1992 to 2002 in an experimental way. tests’ results of hypothesis using multiple linear regression showed that intellectual capital has a positive impact on market value and company’s financial performance and can be a measure for company’s future performance.

5. Apouhami (2007) examined the relation between intellectual capital and profit of each share in 33 companies of financial providence industry, banking and Thailand exchange insurance in 2005. This finding shows the ability of intellectual capital for creating capital profit and therefore absorbing investors in the market.

Theoretical Research

Intellectual Capital : It is a collection of resources, capabilities and competencies that leads to improve the organization performance and creates value (Hosseinpour & Azar 2011).

Human Capital : Human capital is the basis of intellectual capital and basic element for researching about intellectual capital(Chen et al 2004).

Structural Capital : It means everything in the organization that supports staff(intellectual capital)in doing their works ,in the other words, structural capital is a supportive foundation that enables human capital to act ( Luthy 1998).

Relational Capital : Relational capital means the value of relations that a company establishes with its customers. This value is reflected in customers’ faith to the company or its products( Chen et al 2004).
Organizational Performance: Organizational performance is referred to how operations done, their duties and organizational activities and their results. (Haghighi et al. 2011).

Financial Performance: The financial performance of company can be measured by factors such as Tobin (Tobin's Q), profit, profit growth, selling efficiency, divided profit, cash currents, profit of each share, financial ratios including (ROA, ROE, P/E) and the ratio of market value to book value (Sinaiyee et al. 2011).

Models of Research

![Conceptual Model of Research](image)

**The Research Hypotheses**

**The first main hypothesis**: There is a significant and positive relationship between intellectual capital and bank’s profitability.

**The First Sub Hypotheses**

There is a positive and significant relationship between human dimension of intellectual capital and bank profitability.

There is a positive and significant relationship between structural dimension of intellectual capital and bank profitability.
There is a positive and significant relationship between intellectual capital and bank profitability.

The second main hypothesis: There is a positive and significant relationship between intellectual capital and absorption of bank resources.

The Second Sub Hypotheses

There is a positive and significant relationship between human dimension of intellectual and absorption of bank resources.

There is a significant and positive relationship among structural domain of intellectual capital and absorption of bank resources.

There is a positive and significant relationship dependency between intellectual capital and absorption of bank resources.

The third main hypothesis: There is a positive and significant relationship between intellectual capital and allocation of bank resources.

The Third Sub Hypotheses

There is a positive and significant relationship between human intellectual capital and bank resources allocation.

There is a significant and positive relationship between structural intellectual capital and bank resources allocation.

There is a positive and significant relationship between relational intellectual capital and bank resources allocation.

Fourth main hypothesis: There is positive and significant relationship between intellectual capital and bank debt collection.

The Fourth Sub Hypothesizes

There is a significant relationship between intellectual capital and demands collection of bank.

There is a positive and significant relationship between structural intellectual capital and demands collection of bank.

There is a positive and significant relationship between relational intellectual capital and demands collection of bank.

Research Methodology

The current research is considered as applied from the point of goal and considered as descriptive survey. Research (or non-experimental) can be a collection of methods that their purpose is to describe conditions or examining phenomenon. Doing these kind of researches can be for more recognition of conditions by helping to deciding process (Sarmad & et all 2004). Statistical population in the current research consists 1504 staff, including manager
assistants and official employees working in 126 branches of Guilan Meli bank. Data analysis has been done with descriptive- inferential method.

Validated of Questionnaire

The most usual test of internal consistency reliability, is the Cronbach's alpha coefficient which is done for multi measure questions or classifications (Danaee & et al 2008). Alpha cronbakh results as the following:

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Human Capital</th>
<th>Structural Capital</th>
<th>Relational Capital</th>
<th>Intellectual Capital</th>
<th>Performance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's Alpha</td>
<td>0.831</td>
<td>0.758</td>
<td>0.858</td>
<td>0.924</td>
<td>0.802</td>
<td>0.916</td>
</tr>
<tr>
<td>Number of Items</td>
<td>18</td>
<td>15</td>
<td>15</td>
<td>48</td>
<td>4</td>
<td>52</td>
</tr>
</tbody>
</table>

Test Results

Examination of Performance and Intellectual Capital Coefficient

In order to reply the main research question i.e. the relation between intellectual capital and bank performance, it is necessary to hold a suitable correlation test between these two structures. In order to select a good correlation test, first we must search about normality or unnormality of the distribution of intellectual capital structures and research performance. For this purpose Kolmogorov - smirnov test was used and the results were achieved as the following table:

<table>
<thead>
<tr>
<th>Normal Parameters</th>
<th>Intellectual Capital</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>230</td>
<td>230</td>
</tr>
<tr>
<td>Mean</td>
<td>3.8276</td>
<td>3.1087</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.36932</td>
<td>0.47207</td>
</tr>
<tr>
<td>Absolute Value</td>
<td>0.216</td>
<td>0.157</td>
</tr>
<tr>
<td>Positive</td>
<td>0.137</td>
<td>0.091</td>
</tr>
<tr>
<td>Negative</td>
<td>-0.216</td>
<td>-0.157</td>
</tr>
<tr>
<td>Z Smirnov - Kolmogorov</td>
<td>3.281</td>
<td>2.378</td>
</tr>
<tr>
<td>Significant</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

According to minus level of meaningfulness from 0.05, it can be understood that distribution of above structures isn't normal. So it is necessary to use nonparametric tests to examine the correlation between them. In order to do this, spearman correlation test was done as the following figure:
The results showed that the relation between these two structures in 99% is meaningful and positive. This means that with the increase of intellectual capital of organizations, their performance also will upgrade and vice versa. Examination of the relation between intellectual capital dimensions and performance factors in order to examine and explain the relation between different dimensions of intellectual capital and performance capital parallel to research hypotheses, in this section the relation between intellectual capital dimensions and performance dimensions is examined through analysis by Lizrel software. So that existing variances in variables are examined next to each other and relations are measured as more real shape.

**Table 3 : Spearman Correlation Testing**

<table>
<thead>
<tr>
<th></th>
<th>Intellectual Capital</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman Intellectual Capital Correlation Coefficient</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Significant</td>
<td></td>
<td>0.001</td>
</tr>
<tr>
<td>Number</td>
<td>230</td>
<td>230</td>
</tr>
<tr>
<td>Performance Correlation Coefficient</td>
<td>1.000</td>
<td>0.227(***)</td>
</tr>
<tr>
<td>Significant</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>230</td>
<td>230</td>
</tr>
</tbody>
</table>

The First Performance Dimension, Profitability

In the first stage, the relation among triple dimensions of intellectual capital and profitability if bank performance was examined. With the goal of establishing comparison ability of coefficients intensity it would be necessary to calculate standard coefficients as standard beta in regression equations simultaneously. The value near to zero for RMSEA and 0.42 for factor($\chi^2_{df}$) and values near to 1 for GIF, CFI and IFI show the suitable fitness of the model with structure data.

$$\frac{\chi^2}{df} = \frac{0.42}{1} = 0.42$$

The Second Dimension, Absorption of Resources

The second factor is resource absorption that then its relation with intellectual capital has been considered. With the goal of establishing the possibility to compare coefficients’ intensity, it is necessary to calculate standard coefficients as regression standard beta equations simultaneously. Value close to zero for RMSEA and 0.30 for $\chi^2_{df}$ and values close to 1 for GIF, CFI and IFI show suitable fitting of the model with structure data.

$$\frac{\chi^2}{df} = \frac{0.61}{2} = 0.3$$
The Third Dimension of Performance, Allocation of Facilities
The third dimension of performance has been considered as allocation of facilities. In this section, the relation between intellectual capital dimensions and allocation of facilities is considered. The standard coefficients’ relation among these variables are shown in the following figure and show human and structural relation of intellectual capital with the dimension of allocation of financial performance facilities. Value close to zero for RMSEA and 0.8 for \( \frac{\chi^2}{df} \) index and values close to 1 for GIF, CFI and IFI indexes show suitable fitting model with structure data.

\[
\frac{\chi^2}{df} = \frac{1.64}{2} = 0.8
\]

Fourth Dimension of Performance, Demands Collection
Finally, the last of performance related aspect is measured by intellectual capital. The intensity of relational aspect equals to 0.44 while this intensity in humanistic and structural aspect with demand collection equals to 0.34 and 0.12.

Value close to zero for RMSEA and 0.44 for \( \frac{\chi^2}{df} \) and values close to 1 for GIF, CFI and IFI show the suitable fitness of model according to structural data.

\[
\frac{\chi^2}{df} = \frac{0.44}{1} = 0.44
\]

Table 4: Hypothesis Test Results

<table>
<thead>
<tr>
<th>Row</th>
<th>Hypothesis</th>
<th>Accept or Reject</th>
<th>Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There is a positive and significant relationship between intellectual capital and absorption of bank’s profitability</td>
<td>Accept</td>
<td>0.62</td>
</tr>
<tr>
<td>2</td>
<td>There is a significant and positive relationship between structural intellectual capital and bank profitability</td>
<td>Accept</td>
<td>0.27</td>
</tr>
<tr>
<td>3</td>
<td>There is a positive and significant relationship between relational intellectual capital and bank profitability</td>
<td>Accept</td>
<td>0.32</td>
</tr>
<tr>
<td>4</td>
<td>There is a positive and significant relationship between human intellectual capital and bank resources allocation</td>
<td>Accept</td>
<td>0.35</td>
</tr>
<tr>
<td>5</td>
<td>There is a significant and positive relationship between structural intellectual capital and bank resources allocation</td>
<td>Accept</td>
<td>0.16</td>
</tr>
<tr>
<td>6</td>
<td>There is a positive and significant relationship between relational intellectual capital and allocation of bank resources</td>
<td>Accept</td>
<td>0.35</td>
</tr>
<tr>
<td>7</td>
<td>There is a positive and significant relationship between human intellectual capital and bank resources allocation</td>
<td>Accept</td>
<td>0.42</td>
</tr>
<tr>
<td>8</td>
<td>There is a significant and positive relationship between structural intellectual capital and bank resources allocation</td>
<td>Reject</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>There is a positive and significant relationship between relational intellectual capital and bank resources allocation</td>
<td>Reject</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>There is a positive and significant relationship between structural intellectual capital and demands collection of bank</td>
<td>Accept</td>
<td>0.38</td>
</tr>
<tr>
<td>11</td>
<td>There is a positive and significant relationship between relational intellectual capital and demands collection of bank</td>
<td>Accept</td>
<td>0.17</td>
</tr>
<tr>
<td>12</td>
<td>There is a positive and significant relationship between relational intellectual capital and demands collection of bank</td>
<td>Accept</td>
<td>0.54</td>
</tr>
</tbody>
</table>
Conclusions
The examination of all variables together provides this possibility that interaction of variances in the model can also be seen and how much variables that have a meaningful relation with each other, in general modeling haven’t meaningful relation .this is because of an interaction that variables have on each other and of course, it is obvious that this kind of statistic testing is closer to the real world. So in this stage, we examine findings by means of simultaneous way analysis of the relation between intellectual capital and performance. In the following table the intensity of relation of each aspect of intellectual capital in simultaneous way with performance factors have been shown.

<table>
<thead>
<tr>
<th>Table 5 : Standard Beta of Line Regression in Analysis of Intellectual Capital dimensions and Performance Indexes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Intellectual Capital</td>
</tr>
<tr>
<td>Structural Capital</td>
</tr>
<tr>
<td>Relational Capital</td>
</tr>
</tbody>
</table>

According to 9-5 table, it can be understood that most of secondary hypothesizes except 8th and 9th hypothesis that are the effect of structural aspects and relational on resource allocation of bank financial performance, were confirmed.

Research Suggestions

1. In order to enhance human capital with the purpose of competencies’ recognition, their knowledge, attitudes, behaviors, properties and the amount of employees’ satisfaction, we suggest that in organizations the competency file of jobs should be prepared so that it can be used for appointment, employment, education and development of people in different parts.

2. In order to enhance structural capital, using team structures and project and removing of bureaucracy And supporting innovation of staff, establishing competency culture, knowledge dividing, learning in organization and developing informational systems are suggested.

3. In order to enhance relational capital, doing strategic schedule to recognize opportunities and threats and recognition of strengths and weaknesses of organization inside atmosphere, continuous following and suitable reply to expectations and complaints of customers, enhancing customer driven attitude among all of members
and using modern technologies for broad advertising in order to make good picture of organization is suggested.

4. it is worth noting that for the success of organization, all of three aspects of intellectual capital must grow and strengthen simultaneously because growth and enhance of one dimension and ignoring the growth of other aspects can cause gap and distance among the dimensions of intellectual capital and we can’t expect high performance in the organization and it damages credit and reputation of organization in the competitive environment.

Suggestions For Future Research

1. Calculation of intellectual capital in the bank by financial methods especially calculated intangible value method and examining its relation with performance factors.
2. Examining the relation of intellectual capital with financial ratios in the bank.
3. Examining the effectiveness of intellectual capital aspects on big decision making in the organization.

Limitations of Research

1. We can refer to time as one of limitations of researcher.
2. The broadness of Guilan Melli bank branches was the other limitation of researcher.
3. Unwillingness of bank personnel for cooperation with researcher and answering to questionnaires also has been from among limitations in this research.
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