Behind the human capital assessment enigma - case study: knowledge based organization vs. Top 100 organizations listed by market capitalization in the last three months at the BSE

NICOLETA RADNEANTU, ELENA ROXANA STAN and EMILIA GABROVEANU

Abstract
Internationally there are many scientific concerns on intangible assets and intellectual capital evaluation methods. There has not been reached yet a consensus on the optimal method/methods for evaluating all types of intangible assets. Given the great diversity of intangible assets, and their uniqueness is foreseeable that in the near future will not be achieved this consensus. For this reason, with this paper we propose to bring a contribution to the literature on human capital assessment. Thus, we present the findings of a comparative study conducted using two samples of companies listed on the Bucharest Stock Exchange - companies classified as "knowledge-based" and companies from top 100 of issuers after capitalization regarding the importance of quantifiable or non-quantifiable variables for assessing capital human analyzed using mean, standard deviation and Paired-Samples T Test.

Key words: intangible assets, knowledge-based organizations, Top 100 organizations, human capital, Paired-Samples T Test

INTRODUCTION
In the same time with changing economic paradigms in the context of the knowledge-based society we can perceive a major conversion on the accounting field also. This change is reflected by the growing importance of intangible assets and intellectual capital in the new organizations, informational technology, capable to generate new reevaluation models for financial and accounting information, and the emergence of a new vision on accounting profession. Likewise are born interdependencies between different research areas - accounting and ecology (green accounting), business intelligence or corporate governance. Changes caused by knowledge-based organization on the accounting [2] are highlighted in Fig. 1.

In this context, we aimed to determine some elements that we consider important for assessing human capital using a comparative study (with responses after sending the question: Give grades from 1 to 10 to each item below, according to its importance in evaluating human capital?) regarding managers' perceptions from knowledge-based organizations and Top 100 companies, listed on BSE.

DEFINITION, OBJECTIVE, RESEARCH METHODOLOGY AND RESULTS ANALYSIS
Research objective and variables
The research objective is to determine comparatively the importance of human capital assessment in knowledge-based organizations and Top 100 companies. There have been analyzed the following elements (research variables): number of departures from the firm, the number of moves within the company, number of full-time employees, part-time employees.

Defining analyzed populations
Knowledge-based organizations. The study identified 26 knowledge-based organizations listed on BSE, from which we received 21 valid responses. Top 100 companies of issuers after capitalization - contains 68 companies listed on the BSE, from which we received 52 valid responses. Populations are independent, meaning that no knowledge-based organization is part of the Top 100 and any Top 100 company can be classified as knowledge-based organization.

1 Romanian-American University, School of Management-Marketing
E-Mail: nicoleta.radnea@yahoo.com

2 Romanian-American University, School of Domestic and International Economy of Tourism
E-Mail: seroxana@gmail.com

3 Romanian-American University, School of Domestic and International Economy of Tourism
E-Mail: emilia.gabroveanu@gmail.com

©Society for Business and Management Dynamics
Research methodology and results analysis
To establish a hierarchy of importance of these criteria within each type of companies, we analyzed the significance of the difference between the average score obtained by each criteria. As a result of disposing observations in pairs the student test for dependent samples is used - Paired-Samples T Test (Table 1).

Fig. 1 Accounting features in the context of knowledge-based economy/society
### Test for dependent samples (Paired Samples Test)

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>T</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 100 Companies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1 no. of departures from the firm - no. of moves within the company</td>
<td>1.327</td>
<td>1.465</td>
<td>.203</td>
<td>.919</td>
<td>1.735</td>
<td>6.5</td>
<td>32</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 2 no. of departures from the firm - no. of full-time employees</td>
<td>.231</td>
<td>1.854</td>
<td>.257</td>
<td>-.285</td>
<td>.747</td>
<td>.89</td>
<td>8</td>
<td>.374</td>
</tr>
<tr>
<td>Pair 3 no. of departures from the firm - no. of part-time employees</td>
<td>1.346</td>
<td>1.595</td>
<td>.221</td>
<td>.902</td>
<td>1.790</td>
<td>6.0</td>
<td>85</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 4 no. of moves within the company - no. of full-time employees</td>
<td>-1.096</td>
<td>1.860</td>
<td>.258</td>
<td>-1.614</td>
<td>-.578</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 5 no. of moves within the company - no. of part-time employees</td>
<td>.019</td>
<td>1.448</td>
<td>.201</td>
<td>-.384</td>
<td>.422</td>
<td>.09</td>
<td>6</td>
<td>.924</td>
</tr>
<tr>
<td>Pair 6 no. of full-time employees - no. of part-time employees</td>
<td>1.115</td>
<td>1.263</td>
<td>.175</td>
<td>.764</td>
<td>1.467</td>
<td>6.3</td>
<td>70</td>
<td>.000</td>
</tr>
<tr>
<td>Knowledge-based organizations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1 no. of departures from the firm - no. of moves within the company</td>
<td>.762</td>
<td>1.261</td>
<td>.275</td>
<td>.188</td>
<td>1.336</td>
<td>2.7</td>
<td>69</td>
<td>.012</td>
</tr>
<tr>
<td>Pair 2 no. of departures from the firm - no. of full-time employees</td>
<td>1.238</td>
<td>1.947</td>
<td>.425</td>
<td>.352</td>
<td>2.124</td>
<td>2.9</td>
<td>14</td>
<td>.009</td>
</tr>
<tr>
<td>Pair 3 no. of departures from the firm - no. of part-time employees</td>
<td>1.87</td>
<td>1.878</td>
<td>.410</td>
<td>1.002</td>
<td>2.712</td>
<td>4.5</td>
<td>31</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 4 no. of moves within the company - no. of full-time employees</td>
<td>.476</td>
<td>1.990</td>
<td>.434</td>
<td>-.430</td>
<td>1.382</td>
<td>1.0</td>
<td>96</td>
<td>.286</td>
</tr>
<tr>
<td>Pair 5 no. of moves within the company - no. of part-time employees</td>
<td>1.095</td>
<td>2.022</td>
<td>.441</td>
<td>.175</td>
<td>2.016</td>
<td>2.4</td>
<td>82</td>
<td>.022</td>
</tr>
<tr>
<td>Pair 6 no. of full-time employees - no. of part-time employees</td>
<td>.619</td>
<td>1.203</td>
<td>.263</td>
<td>.071</td>
<td>1.167</td>
<td>2.3</td>
<td>58</td>
<td>.029</td>
</tr>
</tbody>
</table>

Hypotheses for knowledge-based organization are:

1. $H_0: \bar{x}_{d}$ no. of departures from the firm $\leq \bar{x}_{f}$ moves within the firm and $H_1: \bar{x}_{d}$ no. of departures from the firm $> \bar{x}_{f}$ moves within the firm
2. $H_0: \bar{x}_{d}$ no. of departures from the firm $\leq \bar{x}_{f}$ full-time employees and $H_1: \bar{x}_{d}$ no. of departures from the firm $> \bar{x}_{f}$ full-time employees
3. $H_0: \bar{x}_{d}$ no. of departures from the firm $\leq \bar{x}_{p}$ part-time employees and $H_1: \bar{x}_{d}$ no. of departures from the firm $> \bar{x}_{p}$ part-time employees
4. $H_0: \bar{x}_{d}$ no. of moves within the company $\leq \bar{x}_{f}$ full-time employees and $H_1: \bar{x}_{d}$ no. of moves within the firm $> \bar{x}_{f}$ full-time employees
5. $H_0: \bar{x}_{d}$ no. of moves within the company $\leq \bar{x}_{p}$ part-time employees and $H_1: \bar{x}_{d}$ no. of moves within the firm $> \bar{x}_{p}$ part-time employees
Based on the descriptive statistics are formulated the hypotheses (see Table 2).

**Table 2. Descriptive statistics elements (Paired Samples Statistics)**

<table>
<thead>
<tr>
<th>Knowledge-based organizations</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top 100 Companies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of departures from the firm</td>
<td>8.62</td>
<td>52</td>
<td>1.255</td>
<td>.174</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of moves within the company</td>
<td>7.29</td>
<td>52</td>
<td>1.446</td>
<td>.201</td>
</tr>
<tr>
<td>Pair 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of departures from the firm</td>
<td>8.62</td>
<td>52</td>
<td>1.255</td>
<td>.174</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of full-time employees</td>
<td>8.38</td>
<td>52</td>
<td>1.416</td>
<td>.196</td>
</tr>
<tr>
<td>Pair 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of departures from the firm</td>
<td>8.62</td>
<td>52</td>
<td>1.255</td>
<td>.174</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of part-time employees</td>
<td>7.27</td>
<td>52</td>
<td>1.285</td>
<td>.178</td>
</tr>
<tr>
<td>Pair 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of moves within the company</td>
<td>7.29</td>
<td>52</td>
<td>1.446</td>
<td>.201</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of full-time employees</td>
<td>8.38</td>
<td>52</td>
<td>1.416</td>
<td>.196</td>
</tr>
<tr>
<td>Pair 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of moves within the company</td>
<td>7.29</td>
<td>52</td>
<td>1.446</td>
<td>.201</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of part-time employees</td>
<td>7.27</td>
<td>52</td>
<td>1.285</td>
<td>.178</td>
</tr>
<tr>
<td>Pair 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of full-time employees</td>
<td>8.38</td>
<td>52</td>
<td>1.416</td>
<td>.196</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of part-time employees</td>
<td>7.27</td>
<td>52</td>
<td>1.285</td>
<td>.178</td>
</tr>
<tr>
<td><strong>Knowledge-based organizations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of departures from the firm</td>
<td>8.71</td>
<td>21</td>
<td>1.056</td>
<td>.230</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of moves within the company</td>
<td>7.95</td>
<td>21</td>
<td>1.284</td>
<td>.280</td>
</tr>
<tr>
<td>Pair 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of departures from the firm</td>
<td>8.71</td>
<td>21</td>
<td>1.056</td>
<td>.230</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of full-time employees</td>
<td>7.48</td>
<td>21</td>
<td>1.750</td>
<td>.382</td>
</tr>
<tr>
<td>Pair 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of departures from the firm</td>
<td>8.71</td>
<td>21</td>
<td>1.056</td>
<td>.230</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of part-time employees</td>
<td>6.86</td>
<td>21</td>
<td>1.621</td>
<td>.354</td>
</tr>
<tr>
<td>Pair 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of moves within the company</td>
<td>7.95</td>
<td>21</td>
<td>1.284</td>
<td>.280</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of full-time employees</td>
<td>7.48</td>
<td>21</td>
<td>1.750</td>
<td>.382</td>
</tr>
<tr>
<td>Pair 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of moves within the company</td>
<td>7.95</td>
<td>21</td>
<td>1.284</td>
<td>.280</td>
</tr>
<tr>
<td>Importance in human capital assessment - no. of part-time employees</td>
<td>6.86</td>
<td>21</td>
<td>1.621</td>
<td>.354</td>
</tr>
</tbody>
</table>
In the case of pairs of elements: number of departures from the firm - moves inside the firm, number of departures from the firm - full-time employees, number of departures from the firm - part-time employees, moves within the firm - part-time employees, full-time employees - part-time employees, the calculated value of t-test: \( t_c = 2.769, t_r = 2.914, t_f = 4.531, t_c = 2.482, t_r = 2.358 > t_{df21-1, \alpha} = 1.71 \), which leads to accepting the alternative hypothesis, and in case of the pair moves within the firm - full-time employees, \( t_c = 1.096 < t_{df21-1, \alpha} = 1.71 \), which leads us to accept the null hypothesis.

In conception of knowledge-based organizations managers the most important element of those analyzed is the number of departures from the firm, and the relationship between elements is:

<table>
<thead>
<tr>
<th>Number of departures from the firm</th>
<th>&gt;</th>
<th>Number of full-time employees</th>
<th>&gt;</th>
<th>Number of moves within the firm</th>
<th>&gt;</th>
<th>Number of part-time employees</th>
</tr>
</thead>
</table>

In the conception of Top 100 Companies managers the most important element of those analyzed is the number of full-time employees, and the relationship between the elements is:

<table>
<thead>
<tr>
<th>Number of moves within the firm</th>
<th>&lt;</th>
<th>Number of part-time employees</th>
<th>&lt;</th>
<th>Number of departures from the firm</th>
<th>&lt;</th>
<th>Number of full-time employees</th>
</tr>
</thead>
</table>

CONCLUSIONS

Romania cannot avoid the economy evolution – and off course the transition towards a new reality - the knowledge-based economy. But unfortunately, most managers are still at literacy and awareness level in respects of the existence of the knowledge-based society. Increased interest determined by the changing of accounting traditional economic paradigms derived obviously from the benefits to be obtained. Mainly, we talk about creating added value due to the use of intangible assets.

We can settle as result of this analysis, with a 95% probability, that the most important criteria for evaluating intellectual capital in knowledge-based organizations is the number of departures from the firm, instead in the Top 100 companies most important criteria for evaluating intellectual capital is the number of full-time employees. That can be seen in the growth of concern of knowledge-based organizations managers for their own employees, on stimulating and encouraging them for a long term collaboration and improve working conditions. Criteria which is given less importance in the knowledge-based organizations is the number of part-time employees, and for Top 100 companies is the number of moves within the firm.
REFERENCES