The relationship between human capital management and employees’ performance

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1. Introduction and problem statement

In a scientific economical system, products and organizations' lives are dependent on knowledge and the most successful organizations are which use this intangible property in a better manner and higher speed. Studies have shown that knowledge is a genuine resource which leads to business performance increase, in contrary to efficiency reduction of traditional resources (money, land, machinery equipment, and etc.) Nowadays and from a strategic point of view, intellectual capital is used to create and improve organizational worthiness and organizational success depends on how this crucial capital is applied and managed in the system (Bontis et al, 1999).

One of the most important intangible assets is human capital which is a part of intellectual capital. Appropriate managing of intellectual capital make employees more satisfied and increase human resource productivity. In Karaj municipality, managers do not have proper understanding about intangible assets and human capital, so human capital management has not been accomplished. Therefore in this paper we are trying to survey the relationship between human capital management and employees’ performance.

The main question of research can be considered as:

Is there any relationship between human capital management and employees’ performance in Karaj municipality?

2. Literature review

2.1. Human capital

By appearing “information technology” revolution and forming information and network society and also developing and growing higher technology, development pattern of global economy has been changed. In result of these changes, knowledge has been substitute of financial and physical capitals. In a knowledge based organization, accounting traditional methods are not sufficient to evaluate intellectual capitals.

Intellectual capital as a new discipline is a new domain for organization’ researchers which focus on creating new measuring mechanisms like human capital, organizational capital customer satisfaction and innovation (Ghelichli, 2006).

In a simple definition, intellectual capital is difference between market value and clerical value of an organization’s assets (Seetharaman et al, 2002). In other definition, intellectual capital contains all processes and assets which usually record in balance sheet. It has been classified in different ways. In the most important categorization intellectual capital has three main dimensions: human, organizational and relational capital.

Human capital is one of the most important and in deeds the most important intellectual asset in organizations, because these assets are creativity resources. The capital includes employees knowledge in an organizations contain competencies, skills and abilities (Bontis et al, 2000). The organizations are not owners of these capitals and employees exiting of organizations face them with new treatments (Bontis, 1998).

Human capital which called human resources capital (Shun Wang, 2011) is backbone of intangible assets and is considered as a vital element in organizations’ value (Royal & O’Donnell, 2008). It includes all intellectual assets of organizations like employees’ knowledge and expertise (Roos et al, 1997) which enable them to solve organizational problems and meet customers’ needs and desires (Skandia, 1994; Sullivan, 1998).

This kind of capital is remembered as the most important criterion of intellectual capital (Cornachione, 2010) illustrates organizations’ ability to find the best solution by focusing employees’ knowledge (Bontis, 1998).

Human capital shows knowledge inventory of employees (Bontis et al, 2002) and is a vital resource of strategic innovation (Bontis, 1998).

Chen et al (2004) believes that human capital has 3 main dimensions in include employees’ “competencies”, “creativity...
and innovation” and “attitude”. The sub criteria of human capital have been presented in table 1:

<table>
<thead>
<tr>
<th>Employees’ competency</th>
<th>Management strategic leadership, employees’ characteristics, employees learning ability, employees’ learning efficiency, employees’ abilities to associate in decision makings, employees abilities for management, employees’ skills and expertise, learning technical employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees’ creativity</td>
<td>Employees’ creativity ability, creative thinking income, employees’ innovation</td>
</tr>
<tr>
<td>Employees’ attitude</td>
<td>Acquiring identity from organization’s values, employees satisfaction, leaving rate, useful working lives’ average</td>
</tr>
</tbody>
</table>

2.2. Performance

Organizations’ role in achieving cultural, political, social and economical goals is absolutely important. In deed organizations are considered as necessary factors in human life. They serve people and enable them to do some things which employees could not do that without organizations (Daneshvar, 2006).

To promote performance quality, employees’ stress should be at optimal level and when their stress is more or less than optimal level, performance would decrease. One of vital factors affecting on performance is motivation (Shafiei, 2008).

There are lots of definitions about performance which some of them are represented:
- Performance is result of employee activities in doing his or her tasks in determined time (Armstrong, 1999).
- Performance is result of an activity or goals fulfillment in which activity is doing the task that should be done (Abtahi, 2002).
- Performance is a set of related behaviors to jobs which employees show (Moorhead & Griffin, 1998).
- Performance is function of power, intention, job identification, organization support and environmental consistency (Khakzadian, 2008)

The term “performance” usually explains a system yield. It is an activity which done both for doing works and result of doing that (Yameini, 1992). Some of researchers believe that when employees found organization’ decisions are not fairly and in base of justice, not only their commitment and motivation do not increase, but also their performance and productivity will be dropped (Daneshvar, 2006).

Armstrong (1999) introduced 5 affecting factors on performance:
1- Managers and their leadership styles,
2- Organizational structure,
3- Physical condition at workplace,
4- Relationship with coworkers and
5- Individual differences and needs (Armstrong, 1999).

According to accomplished researches commitment, motivation, creativity and job satisfaction are vital factors which affects on employees’ performance and improve it (Daneshvar, 2006).

2.3. Conceptual framework and hypotheses

The chart below shows the influence of human capital and its indices on employees’ performance. In the model, human capital, employees’ competency, creativity and attitude are considered as independent variables and performance is dependent one.

Conceptual framework of research

1-There are positive and meaningful relationship between human capital management and employees’ performance.
1-1-There are positive and meaningful relationship between employees’ competency and their performance.
1-2-There are positive and meaningful relationship between employees’ creativity and their performance.
1-3-There are positive and meaningful relationship between employees’ attitude and their performance.

3. Research methodology

Society for this research is 98 employees who work in Karaj municipality (8th domain). This number seems to be adequate, so no sampling strategy was utilized. For gathering the data library method (to refer to books, articles, theses and etc) and fieldworks (questionnaire) was being applied. Three questionnaires were designed for measuring human capital and employees’ performance and ranking human capital indices; 15 questions in human capital, and 16 questions in performance. Also 4 questions about demographic characteristics and 1 open one were invented.

To analyze the data SPSS 17 and Kolmogorov-Smirnov, Spearman, Chi-square, Binomial tests and fuzzy TOPSIS technique were utilized. The management experts were being asked to evaluate the questionnaires validity. For determining the questionnaires’ reliability, the ‘Cronbach Alpha technique’ was applied. For this purpose, 30 people were chosen by random (from the samples) and the questionnaires were given to them. The ‘Cronbach Alpha’ values for the questionnaires were calculated 0.91 and 0.87 for human capital and performance respectively.

3.1. Fuzzy TOPSIS technique

Decision making process steps by fuzzy TOPSIS technique are shown below (Hwang and Yoon, 1981):
Step 1: calculating weights vector w_j

\[
\tilde{R} = \left[ \frac{\tilde{r}_{ij}}{n} \right]_{m \times n} \tag{1}
\]

Normalizing the calculated matrix

\[
\tilde{r}_o = \left( \frac{a_{ij}}{d_{ij}}, \frac{b_{ij}}{d_{ij}}, \frac{c_{ij}}{d_{ij}}, \frac{d_{ij}}{d_{ij}} \right), \quad j \in B \tag{2}
\]

\[
\tilde{r}_y = \left( \frac{a_{ij}^-}{d_{ij}}, \frac{a_{ij}^+}{d_{ij}}, \frac{a_{ij}^-}{d_{ij}}, \frac{a_{ij}^-}{d_{ij}} \right), \quad j \in C \tag{3}
\]

Step 2: so normalized weighted matrix is calculated as formula 4:

\[
\tilde{V} = \left[ \frac{\tilde{v}_{ij}}{m \times n} \right], \quad i = 1, 2, ..., m, \quad j = 1, 2, ..., n
\]

\[
\tilde{v}_{ij} = \tilde{r}_{ij} \otimes w_j \tag{4}
\]
3. Findings

3.1. Spearman test

First of all by applying Spearman test the positive and meaningful relationship between human capital and its dimensions was proved.

3.1.2. Chi Square test

After that the results of applying Chi Square test showed there is no relationship between employees’ demographic characteristics and their performance.

3.1.3. Binomial test

To survey variables levels Binomial test was utilized in which all ones apart from employees’ creativity were placed in high levels.

3.1.4. Fuzzy TOPSIS technique

Finally by utilizing fuzzy TOPSIS the indices were ranked in which employees’ abilities for management, learning technical employees and employees’ abilities to associate in decision makings were chosen as the top sub criteria.

5. Conclusion and suggestions

The study was done in a society includes 98 employees of Karaj municipality. After applying Kolmogorov-Smirnov test the normality of data distribution was rejected. So to analyze data some non parametric tests were utilized.

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5.2. Suggestions

5.2.1. Employees’ competency:

Making educational courses for employees, involving them in decision making, delegation and making them more meaningful in self confidence by appreciating systems.

5.2.2. Employees’ creativity:

Welcoming and supporting employees’ new ideas, allocating some budget to implement their applicable ideas and posing employees in appropriate and related situation to their skills and expertise.

5.2.3. Employees’ attitude:

Making employees more satisfied by enhancing their wage, respect them and providing quiet work place for all employees.

Reference

### Table 3: the correlation between job satisfaction and OCB

<table>
<thead>
<tr>
<th>Correlation</th>
<th>Spearman r</th>
<th>P-Value</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human capital with performance</td>
<td>0.49</td>
<td>0.000</td>
<td>Positive and meaningful correlation</td>
</tr>
<tr>
<td>Employees’ competency with performance</td>
<td>0.58</td>
<td>0.000</td>
<td>Positive and meaningful correlation</td>
</tr>
<tr>
<td>Employees’ creativity with performance</td>
<td>0.47</td>
<td>0.000</td>
<td>Positive and meaningful correlation</td>
</tr>
<tr>
<td>Employees’ attitude with performance</td>
<td>0.43</td>
<td>0.000</td>
<td>Positive and meaningful correlation</td>
</tr>
</tbody>
</table>

### Table 4: Results of using Chi-square test

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>P-Value</th>
<th>Standard Error</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Performance</td>
<td>0.153</td>
<td>0.128</td>
<td>Rejected</td>
</tr>
<tr>
<td>Gender</td>
<td>Performance</td>
<td>0.246</td>
<td>0.354</td>
<td>Rejected</td>
</tr>
<tr>
<td>Educational level</td>
<td>Performance</td>
<td>0.219</td>
<td>0.274</td>
<td>Rejected</td>
</tr>
<tr>
<td>Job experience</td>
<td>Performance</td>
<td>0.367</td>
<td>0.302</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

### Table 5: Results of using Binomial test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Observed prop</th>
<th>Test prop</th>
<th>Sig</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human capital</td>
<td>0.7</td>
<td>0.5</td>
<td>0.000</td>
<td>High level</td>
</tr>
<tr>
<td>Employees’ competency</td>
<td>0.9</td>
<td></td>
<td>0.000</td>
<td>High level</td>
</tr>
<tr>
<td>Employees’ creativity</td>
<td>0.3</td>
<td></td>
<td>0.085</td>
<td>High level</td>
</tr>
<tr>
<td>Employees’ attitude</td>
<td>0.6</td>
<td></td>
<td>0.000</td>
<td>High level</td>
</tr>
<tr>
<td>Employees’ performance</td>
<td>0.6</td>
<td></td>
<td>0.000</td>
<td>High level</td>
</tr>
</tbody>
</table>

### Table 6: Linguistic variables for the importance weight (Saeedi et al, 2012)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Very Low (VL)</th>
<th>Low (L)</th>
<th>Medium Low (ML)</th>
<th>Medium (M)</th>
<th>Medium High (MH)</th>
<th>High (H)</th>
<th>Very High (VH)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(0, 0, 1, 2)</td>
<td>(1, 2, 2, 3)</td>
<td>(2, 3, 4, 5)</td>
<td>(4, 5, 5, 6)</td>
<td>(5, 6, 7, 8)</td>
<td>(7, 8, 9)</td>
<td>(8, 9, 10, 10)</td>
</tr>
</tbody>
</table>

### Table 7: Positive and negative ideal solution, closeness index and final ranks

<table>
<thead>
<tr>
<th>Variables</th>
<th>$D^*_i$</th>
<th>$D'_i$</th>
<th>$C_i$</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management strategic leadership</td>
<td>1.656351037</td>
<td>1.954446463</td>
<td>0.541278336</td>
<td>8</td>
</tr>
<tr>
<td>employees’ characteristics</td>
<td>1.30461278</td>
<td>1.799454094</td>
<td>0.579708546</td>
<td>4</td>
</tr>
<tr>
<td>employees learning ability</td>
<td>1.638597053</td>
<td>1.459154676</td>
<td>0.47106413</td>
<td>11</td>
</tr>
<tr>
<td>employees’ learning efficiency</td>
<td>1.562851582</td>
<td>1.522391616</td>
<td>0.493442986</td>
<td>10</td>
</tr>
<tr>
<td>employees’ abilities to associate in decision makings</td>
<td>1.244497072</td>
<td>1.862374927</td>
<td>0.599472899</td>
<td>3</td>
</tr>
<tr>
<td>employees abilities for management</td>
<td>1.06730376</td>
<td>2.074588982</td>
<td>0.66029911</td>
<td>1</td>
</tr>
<tr>
<td>employees’ skills and expertise</td>
<td>1.343813341</td>
<td>1.81333661</td>
<td>0.574358722</td>
<td>5</td>
</tr>
<tr>
<td>learning technical employees</td>
<td>1.058597056</td>
<td>2.05494568</td>
<td>0.659996819</td>
<td>2</td>
</tr>
<tr>
<td>Employees’ creativity ability</td>
<td>1.693250262</td>
<td>1.449481039</td>
<td>0.46121698</td>
<td>12</td>
</tr>
<tr>
<td>creative thinking income</td>
<td>1.558352771</td>
<td>1.758328361</td>
<td>0.564166909</td>
<td>6</td>
</tr>
<tr>
<td>employees’ innovation</td>
<td>1.779763232</td>
<td>1.286497041</td>
<td>0.419565505</td>
<td>14</td>
</tr>
<tr>
<td>Acquiring identity from organization’s values</td>
<td>1.374914583</td>
<td>1.742423092</td>
<td>0.558945893</td>
<td>7</td>
</tr>
<tr>
<td>employees satisfaction</td>
<td>1.708184709</td>
<td>1.369972619</td>
<td>0.445062573</td>
<td>13</td>
</tr>
<tr>
<td>leaving rate</td>
<td>1.547003917</td>
<td>1.570608731</td>
<td>0.503785719</td>
<td>9</td>
</tr>
<tr>
<td>useful working lives’ average</td>
<td>1.865726692</td>
<td>1.225693716</td>
<td>0.396482378</td>
<td>15</td>
</tr>
</tbody>
</table>