The Challenges of the Performance Evaluation System and Effectiveness of Human Resources Management Practices (Case Study: Iran's Petrochemical Industry)

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Human Resources Management Challenges, performance evaluation system, Organizational Effectiveness

ABSTRACT
Main objective of the present survey is the analysis of challenges of the performance evaluation system in Iran's petrochemical industry and its impact on effectiveness of human resources management practices. This survey was conducted using the field-descriptive method. Historical study method was used to collect theoretical subjects and field study method was applied to answer to research questions and confirm or reject research hypotheses. Statistical population of the research included all experts and managers at various levels in two private and public sectors of petrochemical industry in Iran. Cluster-stratified sampling method in two phases was utilized. According to results of the present survey, there is a significant difference among identified challenges in performance evaluation system in two private and public sectors of Iran's petrochemical industry. Results demonstrate that effectiveness level of human resources management practices in performance evaluation system is higher than the average level in public sector and effectiveness level of human resources management practices in performance evaluation system is lower than the average level in private sector of Iran's petrochemical industry and there is significant difference between effectiveness level of human resources management practices in performance evaluation system in two private and public sectors of Iran's petrochemical industry. Studying the impact of existing challenges in performance evaluation system on effectiveness of human resources management practices shows existence of a significant and reversed relation among the existing challenges in performance evaluation system and effectiveness of human resources management practices in this regard.

1. Introduction
Human capital management is the most important managerial challenge for modern organizations under the current global circumstances and the great competition at national and international levels. It has been recognized as the most significant factor for growth, development, and establishment of sustainable competitive advantage in organizations. Today, human resources have been recognized as the major factor for organizations to gain competitive

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advantage [13- 7- 21]. Concepts such as organizational learning, learner organizations, knowledge management, etc. in modern management literature emphasize the importance and creative role of human resources and human resource management accountabilities.

Nowadays, human resource management has found newer dimensions along with theoretical changes and thus, what is expected from human resource management is totally different from its previous challenges. Human resource management should direct the process of transformation in the organization by means of efficient human capital management through playing of new roles and help the organization achieve competitive advantage by relying on their capabilities [17]. Clearly, effectiveness of a human resource management system in each organization depends on several factors that are different in various environmental and organizational conditions [23- 18- 2- 8].

Studies show that the human resource management system in Iran is focused on traditional tasks of selection and employment, training, performance evaluation, compensation and so on and does not have the required effectiveness in doing these tasks [23]. Perhaps the most important reason for the lack of effectiveness is that the current approach and systems of human resource management in Iran cannot respond to the existing challenges in each specialized scope. Since effectiveness of a human resource management system depends on effective methods that are faced with challenges which affect different dimensions of this system, efficient playing of new roles by human resource managers requires accurate recognition of these challenges and their degree of effectiveness on a human resource management system. Now this question is proposed: what are the challenges at the organizational level? By recognizing their dimensions accurately, it will be possible to establish suitable systems for their improvement and development. This study was conducted to respond to this question and its purpose was to identify the challenges of the performance evaluation system, which affect the effectiveness of human resource management practices in public and private sectors of the Petrochemical Industry in Iran.

2. Performance Evaluation

Performance appraisal system contains a procedure which determines working standards, real performance assessment (given the determined working standards) and feedback of results to employees that aims to stimulate them to modify inappropriate performance or continue suitable performance [6]. Organizations and human resource managers follow special purposes by establishment and utilization of the performance appraisal system. The most important of them are:

- Development: By means of performance appraisal system it is possible to determine which employees need training and whether the educational programs have been effective or not. Also, evaluation of employees’ selection test and development of such tests are accomplished via performance appraisal [15].

- Motivation: This system can encourage innovation, increase responsibility, continue suitable activities and foster proper decision-making [14].

- Improvement of communications: Performance appraisal system causes to shape effective discussion among the employers and employees about work problems and the strategies to improve them are devised besides offering suitable feedback to employees [10].

- Decision-making criterion: The results of this system can be a standard for decision making about employees’ promotion, transfer, reward or removal [1].

Given the above-mentioned purposes, it can be concluded that performance appraisal system has a special and vital position in human resource management and if this system is designed properly, organizations can see a growing movement and activity in a competitive environment. A good appraisal system is based on working standards and macro organizational purposes; can distinguish suitable performance from unsuitable performance; has an assessment standard with high reliability; is accepted by the majority of the organization; and can be used easily and without any problem [22].

3. Organizational Effectiveness

March and Sutton (1997) characterize research on organizational effectiveness more as a “necessary form of disciplined self-flagellation than a pursuit of happiness”. As a complex construct, different models of organizational effectiveness have been
suggested. For instance, Bluedorn (1980) argues that the objectives model is best, which means that organizations are effective if they reach their objectives. Seashore and Yuchtman (1967) and Pfeffer and Salancik (1978) plead in favour of a resources dependence model, which means that organizations are effective if they acquire the needed resources. Nadler and Tushman (1980) propose the internal processes model, where effective organizations work constantly without any major breakdown. Connolly et al. (1980) maintain that the strategic constituencies model is best, which means that organizations are performing when they succeed in satisfying their stakeholders. According to Cameron and Whetten (1996), the competitive value framework integrates the first four models cited above.

3-1. Effectiveness of human resource management practices

In theory, human resource management practices shape firm performance through three key channels. As related by Husefeld (1995), human resource management practices:

1. Increase employees’ knowledge, skills, and abilities (KSAs);
2. Motivate employees to leverage their KSAs for the firm’s benefit; and
3. Empower employees to do so.

A high level of KSAs among employees is essential for employees to perform work tasks effectively. When employees only know the routine functions of their jobs, they cannot make significant contributions to the organization beyond their assigned tasks. However, even when employees possess KSAs that allow them to step beyond the routine, they are not likely to do so unless properly motivated.

Thus, much of the history of HRM practice and research has focused on motivating employees to exert discretionary effort. Finally, even knowledgeable, skilled, and motivated employees will not deploy their discretionary time and talent if organizational structures and job design block their efforts. HRM practices need to help remove roadblocks and facilitate employee productivity [11].

4. Research Methodology

This survey was conducted using the field-descriptive method. In order to collect information related to research literature historical study method was used like scientific books and magazines and field study method was applied to collect necessary data in order to answer to research questions and confirm or reject hypotheses. Schuler-Jackson standard questionnaire is used to identify challenges of human resources management that is designed based on seven-option Likert scale in which variables are settled at opposite ends of the scale. Position of variables is specified in the proposed industry based on average opinions of respondents. Then self-made researcher questionnaire with accepted validity (KMO coefficient=0.89) and reliability (Cronbach alpha coefficient=0.89) that is designed in the form of five-option Likert scale is applied to examine effectiveness level of human resources management practices in performance evaluation system. Finally impact of the existing challenges in performance evaluation system on human resources management practices effectiveness will be studied through structural equations testing method. Statistical population of the research included all experts and managers at various levels in two private and public sectors of petrochemical industry. Cluster-stratified sampling method in two phases was utilized. Clusters included two private petrochemical sectors and sixteen active public petrochemical sectors in time period 2010-2011 among which one private petrochemical sector and four public petrochemical sectors were selected randomly. Public petrochemical companies were classified in this survey based on production volume standards and number of personnel into three classes of big, medium and small and it was tried to select at least one company from each class. Then all classes including experts and managers of various levels were considered and a number of individuals were selected randomly from each class. Estimated sample volume in this survey in public and private sector was 406 and 98 persons respectively. After distributing the questionnaires, 339 questionnaires were collected in the public sector and 90 questionnaires were collected in the private sector.

5. Analysis of research questions and hypotheses

5-1. Studying the existing challenges in performance evaluation system in petrochemical industry

The existing challenges in performance evaluation system in two public and private sectors of petrochemical industry are studied in this section.
5-1-1. Studying the existing challenges in performance evaluation system in the public sector of petrochemical industry

The existing challenges in performance evaluation system in the public sector of petrochemical industry are shown in Table 1.

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job description transparency and job specification against lack of job description</td>
<td>4.22</td>
</tr>
<tr>
<td>Systematic performance assessments against unstructured performance assessments</td>
<td>4.11</td>
</tr>
<tr>
<td>Culture of performance assessment against lack of culture of performance assessment</td>
<td>4.03</td>
</tr>
<tr>
<td>Objective standards of performance assessment against subjective standards of performance assessment</td>
<td>3.84</td>
</tr>
<tr>
<td>Feedback of the results of performance assessment against lack of feedback of the results of performance assessment</td>
<td>3.62</td>
</tr>
<tr>
<td>Making personnel decisions based on performance assessment results against not making personnel decisions based on performance assessment</td>
<td>3.63</td>
</tr>
</tbody>
</table>

Based on results of the Table 1 and given that Likert seven-option scale has been used to identify the existing challenges in performance evaluation system the most important challenges in this scope in the public sector of petrochemical Industry include lack of feedback of the results of performance assessment with average 3.62, not making personnel decisions based on performance assessment with average 3.63 and subjective standards of performance assessment with average 3.84.

5-1-2. Studying the existing challenges in performance evaluation system in the private sector of petrochemical industry

The existing challenges in performance evaluation system in the private sector of petrochemical industry are shown in Tab 2.

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job description transparency and job specification against lack of job description</td>
<td>68.2</td>
</tr>
<tr>
<td>Systematic performance assessments against unstructured performance assessments</td>
<td>17.2</td>
</tr>
<tr>
<td>Culture of performance assessment against lack of culture of performance assessment</td>
<td>08.2</td>
</tr>
<tr>
<td>Objective standards of performance assessment against subjective standards of performance assessment</td>
<td>25.2</td>
</tr>
<tr>
<td>Feedback of the results of performance assessment against lack of feedback of the results of performance assessment</td>
<td>22.2</td>
</tr>
<tr>
<td>Making personnel decisions based on performance assessment results against not making personnel decisions based on performance assessment</td>
<td>03.2</td>
</tr>
</tbody>
</table>
Based on results of the Table 2 and given that Likert seven-option scale has been used to identify the existing challenges in performance evaluation system the most important challenges in this scope in the private sector of petrochemical industry include not making personnel decisions based on performance assessment with average 2.03, lack of culture of performance assessment with average 2.08, unstructured performance assessments with average 2.17, lack of feedback of the results of performance assessment with average 2.22, subjective standards of performance assessment with average 2.25 and lack of job description transparency and job specification with average 2.68.

5-1-3. Studying significance of difference between public and private sectors in petrochemical industry regarding the existing challenges in performance evaluation system

Significance of difference between average scores of public and private sectors in petrochemical industry regarding the existing challenges in performance evaluation system are shown in Table 3.

<table>
<thead>
<tr>
<th>Items</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job description transparency and job specification against lack of job description transparency and job specification</td>
<td>8.261</td>
<td>0.000</td>
</tr>
<tr>
<td>Systematic performance assessments against unstructured performance assessments</td>
<td>11.356</td>
<td>0.000</td>
</tr>
<tr>
<td>Culture of performance assessment against lack of culture of performance assessment</td>
<td>12.979</td>
<td>0.000</td>
</tr>
<tr>
<td>Objective standards of performance assessment against subjective standards of performance assessment</td>
<td>10.139</td>
<td>0.000</td>
</tr>
<tr>
<td>Feedback of the results of performance assessment against lack of feedback of the results of performance assessment</td>
<td>9.585</td>
<td>0.000</td>
</tr>
<tr>
<td>Making personnel decisions based on performance assessment results against not making personnel decisions based on performance assessment</td>
<td>10.139</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The applied statistical hypothesis is as below:

\[
\begin{align*}
H_0 & : \mu_1 - \mu_2 = 0 \\
H_1 & : \mu_1 - \mu_2 \neq 0
\end{align*}
\]

In this formula \( \mu_1 \) is average of public sector scores and \( \mu_2 \) is average of private sector scores. According to hypothesis \( H_1 \) there is a significant difference between two public and private sectors of petrochemical industry regarding the existing challenges in performance evaluation system while according to hypothesis \( H_0 \) there is no significant difference between two public and private sectors of petrochemical industry regarding the existing challenges in performance evaluation system.

According to results of the Table 3, since the calculated test statistic is significant at significance level less than 1% about all variables under study, we can conclude that there exists a significant difference between two public and private sectors of petrochemical industry regarding the existing challenges in performance evaluation system.

5-1-4. Studying significance of difference among experts and managers' views regarding the existing challenges in performance evaluation system in petrochemical industry

Significance of difference among experts and managers' views regarding the existing challenges in performance evaluation system in petrochemical industry are shown in Tab 4.
Tab. 4. significance of difference among experts and managers' views regarding the existing challenges in performance evaluation system in petrochemical industry

<table>
<thead>
<tr>
<th>Items</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job description transparency and job specification against lack of job description transparency and job specification</td>
<td>-2.740</td>
<td>0.006</td>
</tr>
<tr>
<td>Systematic performance assessments against unstructured performance assessments</td>
<td>-3.040</td>
<td>0.003</td>
</tr>
<tr>
<td>Culture of performance assessment against lack of culture of performance assessment</td>
<td>-3.016</td>
<td>0.003</td>
</tr>
<tr>
<td>Objective standards of performance assessment against subjective standards of performance assessment</td>
<td>-3.422</td>
<td>0.001</td>
</tr>
<tr>
<td>Feedback of the results of performance assessment against lack of feedback of the results of performance assessment</td>
<td>-2.704</td>
<td>0.007</td>
</tr>
<tr>
<td>Making personnel decisions based on performance assessment results against not making personnel decisions based on performance assessment</td>
<td>-1.788</td>
<td>0.075</td>
</tr>
</tbody>
</table>

The applied statistical hypothesis is as below:

\[
H_0 : \mu_1 - \mu_2 = 0 \\
H_1 : \mu_1 - \mu_2 \neq 0
\]

In this formula \(\mu_1\) is average of experts' scores and \(\mu_2\) is average of managers' scores. According to hypothesis \(H_1\) there is a significant difference between experts and managers' views regarding the existing challenges in performance evaluation system in petrochemical industry while according to hypothesis \(H_0\) there is no significant difference between experts and managers' views regarding the existing challenges in performance evaluation system in petrochemical industry. According to results of the Table 4, since the calculated test statistic is significant at significance level less than 1% about all variables under study except not making personnel decisions based on performance assessment, we can conclude that there exists a significant difference among experts and managers' views regarding the existing challenges in performance evaluation system in petrochemical industry except the above mentioned case. In other words, given to negativeness of the calculated test statistic we can conclude that other variables except the above case are regarded as the existing challenges in performance evaluation system in experts' viewpoint while they are not regarded as the existing challenges in performance evaluation system in managers' viewpoint.

5-2. Studying effectiveness degree of human resources management practices in performance evaluation system in petrochemical industry

Effectiveness degree of human resources management practices in performance evaluation system in petrochemical industry is studied in this section as below.

5-2-1. Studying effectiveness degree of human resources management practices in performance evaluation system in public sector of petrochemical industry

Effectiveness degree of human resources management practices in performance evaluation system in public sector of petrochemical industry are shown in Tab 5.

Tab. 5. effectiveness degree of human resources management practices in performance evaluation system in public sector of petrochemical industry

<table>
<thead>
<tr>
<th>Items</th>
<th>Average</th>
<th>Standard deviation</th>
<th>Test statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness degree of human resources management</td>
<td>3.66</td>
<td>0.786</td>
<td>15.71</td>
</tr>
</tbody>
</table>
The Challenges of the Performance Evaluation System and Effectiveness of Human Resources Management Practices
(Case Study: Iran’s Petrochemical Industry)

5-2-2. Studying effectiveness degree of human resources management practices in performance evaluation system in the private sector of petrochemical industry

Effectiveness degree of human resources management practices in performance evaluation system in the private sector of petrochemical industry are shown in Tab. 6.

<table>
<thead>
<tr>
<th>Items</th>
<th>Average</th>
<th>Standard deviation</th>
<th>Test statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness degree of human resources management practices in performance evaluation system on knowledge, skill and capabilities of the personnel</td>
<td>1.96</td>
<td>0.867</td>
<td>-11.42</td>
</tr>
<tr>
<td>Effectiveness degree of human resources management practices in performance evaluation system on motivation of the personnel to use their knowledge, skill and capabilities</td>
<td>1.78</td>
<td>0.771</td>
<td>-15.06</td>
</tr>
<tr>
<td>Effectiveness degree of human resources management practices in performance evaluation system on empowerment of the personnel to perform their activities</td>
<td>1.95</td>
<td>0.935</td>
<td>-10.71</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1.90</td>
<td>0.714</td>
<td><strong>-14.66</strong></td>
</tr>
</tbody>
</table>

Based on results of the Table 6 and given that Likert five-option scale has been used to measure effectiveness degree of human resources management practices and given to negativeness of the calculated test statistic, we can conclude that effectiveness degree of human resources management practices in performance evaluation system in the private sector of petrochemical industry is lower than the average level.

5-2-3. Studying the significance of difference between public and private sectors of petrochemical industry in terms of effectiveness degree of human resources
management practices in performance evaluation system
Significance of difference between public and private sectors in petrochemical industry in terms of effectiveness degree of human resources management practices in performance evaluation system are shown in Tab. 7.

Tab. 7. significance of difference between public and private sectors in petrochemical industry in terms of effectiveness degree of human resources management practices in performance evaluation system

<table>
<thead>
<tr>
<th>Item</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significance of difference between public and private sectors in petrochemical industry in terms of effectiveness degree of human resources management practices in performance evaluation system</td>
<td>18.545</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The applied statistical hypothesis is as below:

\[
\begin{align*}
    & H_0: \mu_1 = \mu_2 \\
    & H_1: \mu_1 \neq \mu_2
\end{align*}
\]

In this formula \( \mu_1 \) is average score of effectiveness of human resources management practices in performance evaluation system in public sector of petrochemical industry and \( \mu_2 \) is average score of effectiveness of human resources management practices in performance evaluation system in private sector of petrochemical industry. According to hypothesis \( H_1 \) there is a significant difference between scores regarding effectiveness of human resources management practices in performance evaluation system in two public and private sectors of petrochemical industry. While according to hypothesis \( H_0 \) there is no significant difference between scores regarding effectiveness of human resources management practices in performance evaluation system in two public and private sectors of petrochemical industry. It is noteworthy that positivity of the calculated test statistic shows more effectiveness of human resources management practices in the public sector than the private sectors.

According to results of the Table 7, since the calculated test statistic is significant at significance level less than 1% we can conclude that there exists a significant difference between public and private sectors in petrochemical industry in terms of effectiveness degree of human resources management practices in performance evaluation system.

5-4. Studying an Example in Petrochemical Industri

Structural equations modeling is used in the present survey to study the impact of existing challenges in performance evaluation system on effectiveness degree of human resources management practices and test research hypotheses. It is noteworthy that public and private sectors are not studied here separately given to the similar impact of the existing challenges in performance evaluation system on effectiveness of human resources management practices. Thus, impact of these challenges in performance evaluation system on effectiveness of human resources management practices in petrochemical industry will be studied. Structural model of impact of existing challenges in performance evaluation system on effectiveness degree of human resources management practices in performance evaluation system in petrochemical industry is shown in Fig. 1.
The main proposed question in this section is that whether this model is suitable or not. Statistic X²/df and other suitability indexes of the model's goodness should be studied in order to respond to this question. Given to results obtained from data analysis amount of the calculated X²/df is equal to 1.96. Existence of low X²/df (less than 3.59) shows suitable goodness of the model. On the other side, given that amount of calculated p is equal to 0.13 (more than standard significance level (α=5%)) and amount of the calculated RMSEA is equal to 0.006 (less than 0.05) thus the represented model is suitable.

In this model variables C₁ to C₆ are the existing challenges in performance evaluation system and variables C₇ to C₉ are effectiveness indexes of human resources management practices. Influence degree of the performance evaluation system in petrochemical industry from each of the existing challenges in this system is equal to 0.84, 0.65, 0.74, 0.63, 0.59, 0.98 and influence degree of effectiveness of human resources management practices in this system from each existing index is equal to 0.64, 0.70 and 0.79. Also based on this model

**Structural Equations**

\[
\text{Effec} = -0.34 \times \text{C}13, \text{ Errorvar.} = 0.25, R^2 = 0.75
\]

According to the above structural equation the existing challenges in performance evaluation system of petrochemical industry have a negative impact on effectiveness degree of human resources management practices in this system. To put it differently, by increasing one unit in the amount of the existing challenges in performance evaluation system effectiveness of human resources management practices is decreased equal to 0.34 units in this system.

**6. Conclusion**

According to results obtained from analysis of the collected data in this survey the most important existing challenges in performance evaluation system in public sector of petrochemical industry are lack of feedback of the results of performance assessment, not making personnel decisions based on performance assessment and subjective standards of performance assessment and the most important challenges in performance evaluation system in the private sector are not making personnel decisions based on performance assessment, lack of culture of performance assessment, unstructured performance assessments, lack of feedback of the results of performance assessment, subjective standards of performance assessment and lack of job description transparency and job specification. Meanwhile there exists a significant difference among challenges performance evaluation system in two private and public sectors of petrochemical industry.

Before studying the impact of existing challenges in performance evaluation system on effectiveness of human resources management practices in this survey first effectiveness level of human resources management practices in performance evaluation system in two private and public sectors were examined. Results of such
examinations demonstrate that effectiveness level of human resources management practices in performance evaluation system is higher than the average level in public sector and effectiveness level of human resources management practices in performance evaluation system is lower than the average level in private sector of petrochemical industry and there is significant difference between effectiveness level of human resources management practices in performance evaluation system in two private and public sectors of petrochemical industry.

Obtained results of studying the impact of existing challenges in performance evaluation system on effectiveness level of human resources management practices in this scope reveal that there exists a significant and reversed relation between existing challenges in performance evaluation system and effectiveness level of human resources management practices. It means that effectiveness level of human resources management practices is decreased in performance evaluation system by increasing of the existing challenges in this scope.

References


