Study on The Mediating Role of Innovative Climate In The Relationship Between Transformational Leadership Style and Innovative Behavior of An Industrial Company Workers In Khoozestan

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Abstract: This study has been investigated based on considering the mediating role of innovative climate in the relationship between transformational leadership style and innovative behavior of workers. Due this reason 150 of the workers of an industrial company in khoozestan have been selected out of 471 workers through simple random sampling methods. Our finding showed the mediating role of innovative climate in the relationship between intellectual stimulation, inspirational motivation, individual consideration and innovative behavior (P<0.01), but the mediating role of innovative climate in the relationship between ideal influence and systematic problem solving method (P<0.01) was not proved.

Key words: innovative climate, transformational leadership style, innovative behavior, managers.

INTRODUCTION

The term innovation and its meaning is vague and it's can have a variety of meanings based on the context. Innovativeness is to create new something which has a specific aim and function. In a better definition innovativeness is a process which is used for making a new service or product and also a new usage of old products in organization (Gilford, 1951). Organization innovation accepting a new belief or a behavior which seems new to the industry, markets, or the general environment of the organization. The very first organization which offer a new product is called "innovative organization" (Basu, 1991). Improving organizations need innovative workers to get adjusted to the changes of the modern world. Most of whom that have entered the question of leadership into a new process mostly focused on collaborative leadership style or participative leadership. In this study we have focused on, transformational leadership.

Another issue which is directly related to innovation is organizational climate. Organizational climate is the organization worker's understanding of organizational structure facial (schenider,1990). if the Organizational climate supports the innovation perfectly the level of innovation will increase in the organization. lots of studies have been done to investigate the relationship between organizational climate and innovation and being innovative (Souder, 1987; Rubenstein,1989; Dunegan, et al. 1992). Pareek (1987) has mentioned that an organizational climate is innovative which is considered by workers innovatively. Findings in several studies have shown that organizational climate is an important factor for innovation. As an example, Dansereau and Graen and Hagan (1975) have worked on a group of technologists and scientists in four Australian companies. They have found a positive relationship between team innovative climate and innovation characteristics. In social context and Scott and Bruce (1994) found out that an organizational climate which supported innovation strongly increased the level of innovative behaviors among the engineers and the scientists of research and development department of a big American company. They have also found a meaningful and positive meaning between transformational leadership style and the support of innovation and innovative behavior among workers. Based on the investigations done by Nystrom, Ramamurthy and Wilson (2002), Organizational climate is greatly important in acceptance of innovation. The results show that the size and the sources of the organization is positively correlated with Innovativeness. The final correlations in order are (0.31 and 0.57).

In the view of Krishnan (2001) managers have a key role in growing transferring and starting an innovative organizational climate. Schneider (1992) also claims that the organizational founders and managers figure what they discuss it's rightness or wrongness and is among their personal beliefs, a part of the organization climate. Organizational innovation is impressed by the managing point of views which are focused on innovation. When managers look at innovation as a value, when provide the essential resources, provides behavioral supports and promotions for accepting new ideas, organizations benefit these opportunities to explore new issues and this fact is because of showing high level management understanding.

Another variable in this study is transformational leadership style. Transformational leaders because of having some specific qualifications are suitable for uneasy and turbulent climates. The processes of radical (basic) changes start with leading attitudes of transformational leaders.
The followers of this kind of leaders feel more trust, respect and appreciation to their leaders and they are more ambitions in performance. In this impressing process, motivating the followers to move in order to achieve the organizational goals is done by making them know about the possible results of the organization and having them try their best to achieve the goals. This point is what distinguishes transformational leadership from transactional leadership. Because against what mentioned about transformational leadership method of motivating followers, in transactional leadership motivating is done through interaction. Transformational leaders are who that inspire their followers, are able to motivate them and lead them in a way which supports the organization benefits. Also these leaders are able to help their followers to perform better and have great impacts on the organization. These managers pay more attention to the needs of their followers and also to the ways of their improvement, they make their followers move knowledgeable and of course lead them to look at things with a new point of view. By stimulating and motivating their followers, transformational leaders, make them to try their best to achieve the goals of the organization (Robins 1996, Translated by Parsaeeyan and Aerabi, 1999).

Transformational leaders (Change leaders) encourage the workers to consider the major hypotheses and problem solving with a new point of view this fact makes the workers think beyond their personal benefits and pay more attention to the organization goals. Transformational leaders unite their followers around a mutual goal and appreciate them to consider the new challenge as new opportunities. Workers, on the other side support these kind of leaders who encourage them to achieve valuable goals. Also workers feel more support in facing challenges and choosing innovative ways to improve their situations. Boss (1997) has mentioned four important principles of transformational leadership searching the source of their social power: ideal influence (mysterious power), inspiration intellectual stimulation and individual consideration.

**Study Hypothesis:**
1-innovative organizational climate balances the relationship between innovative intellectual stimulation and innovative behavior.
2-innovative organizational climate balances the relationship between inspirational motivation and innovative behavior.
3-innovative organizational climate balances the relationship between individual consideration and innovative behavior.
4-innovative organizational climate balances the relationship between ideal influence and innovative behavior.

**Statistical Community and Sampling Method:**
The studied community includes all the official workers (471 members) of an industrial company in Khoozestan in 2006 and the statistical community includes 150 workers which have been selected through random sampling method.

**Measuring Tools:**
1-innovative behavior Questionnaire:
   This questionnaire was published for the first time in 1988 by Conter (translated by Afshari, Naami: 2005) and includes 8 entries which are filled by the department supervisor for the workers. The answers were in a range of a five – spot scale of likeret, from strongly agree to strongly disagree. Scott and Bruce (1994) have used cronbach alpha to show the stability of this questionnaire and the value of it is 89 for validating in the study of Scott and Bruce (1994) the correlation between the concrete scale and the supervisors evaluation from innovative behavior has been reported 0.33. In Afshari et al's research (2005) the cronbach alpha to show the internal stability coefficient and external stability coefficient are 0.90 and 0.92 in order.

2-innovative organizational climate Questionnaire:
   This questionnaire has been made by Siegel and Kaemmerer in 1978 (Translate by Afshari and Naami, 2005). This questionnaire includes 23 entries and it has two subscales of innovation support and resource supplying for innovation. The stability coefficients has been reported by Afshari and Naami (2005), 0.79 and 0.74. The validity of the study has also been reported by these researchers and it's around 0.46 and 0.30. They have used cronbach alpha to show the stability coefficients near 0.89 and the validity of the study for the study has been calculated 0.55.

3-Multi factorial leadership style questionnaire (MLQ):
   This questionnaire has been made by Boss and Avolio (1994). Based on the studies of Avolio et al. (1995) this questionnaire is stable to significant degrees. In 14 separated studies boss and Avolio have calculated the stability coefficient of the questionnaire between 0.81 and 0.94. In Iran the stability of this questionnaire has been reported well by Sattari, Shokrkon and Naami (2006). Also the validity of the questionnaire has been reported to be 0.30 which in p<0.0001 is meaningful. The stability coefficient in this study for transformational leadership is 0.91, for intellectual stimulation 0.97, for inspirational motivation 0.79 for ideal influence 0.75 and for individual consideration is 0.81.


**Study Findings:**

In table 1 you can see the statistical characteristics (mean and standard deviation) of all the variables.

**Table 1: mean and standard deviation.**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual stimulation</td>
<td>16.25</td>
<td>8.01</td>
</tr>
<tr>
<td>Inspirational motivation</td>
<td>15.24</td>
<td>7.36</td>
</tr>
<tr>
<td>Individual consideration</td>
<td>14.21</td>
<td>6.47</td>
</tr>
<tr>
<td>Ideal influence</td>
<td>13.5</td>
<td>6.75</td>
</tr>
<tr>
<td>Innovative behavior</td>
<td>17.43</td>
<td>8.95</td>
</tr>
<tr>
<td>Innovative climate</td>
<td>65.41</td>
<td>17.25</td>
</tr>
</tbody>
</table>

**The first Hypothesis:**

Innovative organizational climate balances the relationship between intellectual stimulation and innovative behavior.

For studying this hypothesis we have used the multi variable regression analysis. You see the results in table 2.

**Table 2: the result of multivariable regression on intellectual stimulation and innovative organizational climate with innovative behavior through Frequent Entry method.**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Multiple correlation</th>
<th>Coefficient of Determination</th>
<th>F</th>
<th>P</th>
<th>Regression coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual stimulation</td>
<td>0.19</td>
<td>0.04</td>
<td>5.70</td>
<td>0.001</td>
<td>β = 0.19 t = 2.38 p = 0.01</td>
</tr>
<tr>
<td>Innovative climate</td>
<td>0.33</td>
<td>0.11</td>
<td>9.24</td>
<td>0.001</td>
<td>β = 0.14 t = 1.81 p = 0.07</td>
</tr>
</tbody>
</table>

**The second Hypothesis:**

Innovative organizational climate modifies the relationship between inspirational motivation and innovative behavior.

The results of this hypothesis are shown in table 3.

**Table 3: the results of multiple regression analysis of inspirational motivation and innovative organizational climate with innovative behaviors through Frequent Entry method.**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Multiple correlation</th>
<th>Coefficient of Determination</th>
<th>F</th>
<th>P</th>
<th>Regression coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspirational motivation</td>
<td>0.21</td>
<td>0.04</td>
<td>7.45</td>
<td>0.007</td>
<td>β = 0.22 t = 0.73 p = 0.007</td>
</tr>
<tr>
<td>Innovative climate</td>
<td>0.33</td>
<td>0.11</td>
<td>9.11</td>
<td>0.001</td>
<td>β = 0.15 t = 1.87 p = 0.07</td>
</tr>
</tbody>
</table>

Table 3 shows that in that phase of multiple regression which we have just entered inspirational motivation. It’s β is 0.22 which is meaningful in p < 0.01, but in the second phase when we enter innovative organizational climate the β of inspirational motivation has decreased from 0.22 to 0.15 which is not a meaningful state. These results support the second hypothesis.

**The third hypothesis:**

Innovative organizational climate modifies the relationship between individual consideration and innovative behavior you will see the results of this hypothesis in table 4.

**Table 4: The results of multiple regression analysis of individual consideration and innovative organizational climate with innovative behavior through Frequent Entry method.**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Multiple correlation</th>
<th>Coefficient of Determination</th>
<th>F</th>
<th>P</th>
<th>Regression coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual consideration</td>
<td>0.19</td>
<td>0.04</td>
<td>5.81</td>
<td>0.01</td>
<td>β = 0.19 t = 2.41 p = 0.01</td>
</tr>
<tr>
<td>Innovative climate</td>
<td>0.33</td>
<td>0.11</td>
<td>9.11</td>
<td>0.001</td>
<td>β = 0.12 t = 1.54 p = 0.12</td>
</tr>
</tbody>
</table>
Based on the results shown in table 4 when we enter individual consideration to the regression equation, the gained $\beta$ will be 0.19 which in $P < 0.01$ is meaningful in the second phase when we add another variable which is innovative organizational climate the value of individual consideration $\beta$ will be 0.12 which is just meaningful in 0.12. These results support the third hypothesis.

The forth hypothesis: innovative organizational climate modifies the relationship between ideal influence and innovative behavior.

The results of this hypothesis are shown in table 5.

Table 5: the results of multiple regression analysis of ideal influence and innovative organizational climate with innovative behavior through Frequent Entry method:

<table>
<thead>
<tr>
<th>Characteristics variables</th>
<th>Multiple correlation</th>
<th>Coefficient of Determination</th>
<th>F</th>
<th>P</th>
<th>Regression coefficient</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideal Influence</td>
<td>0.10</td>
<td>0.01</td>
<td>1.51</td>
<td>1.43</td>
<td>$\beta = 0.10$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$t = 1.25$</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$p = 0.21$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovative climate</td>
<td>0.30</td>
<td>0.09</td>
<td>7.42</td>
<td>0.001</td>
<td>$\beta = 0.09$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$t = 0.11$</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$p = 0.91$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 shows that the relationship between ideal influence and innovative behavior is not meaningful. So we can conclude, based on these results, that innovative organizational climate doesn't play a modifying role more over as we see in the second phase of regression analysis ideal influence B has been decreased in comparison to the first phase of regression analysis finally we conclude that the forth hypothesis would not be supported.

**Discussion and Conclusion:**

In the current study we investigated the modifying role of innovative organizational climate in relation to the relationship between transformational leadership style and innovative behaviors among the workers of an industrial company. Based on the findings of this study, the above mentioned hypotheses were supported. Regarding the hypotheses 1 to 4 in case of the modifying role of innovative organizational climate results show that innovative organizational climate modifies the relationship between rational stimulation, inspirational motivation, individual consideration and innovative behavior. The results show that there isn't any direct relationship between the predictive variables and innovative behavior but on the other hand the predictive variables can have a great effect on innovative behavior through a mediating variable called innovative organizational climate. As a conclusion the mechanism that defines the relationship between rational stimulation, inspirational motivation, individual consideration, job qualifications is innovative behavior.

Transformational leaders provide a situation for innovation by paying more attention to the workers' needs and improvement (Boss, 1985, Howell and Avolio, 1994). Transformational leaders also provide the situation for increasing the level of innovation of their workers by designing realistic and challenging goals and trusting to their followers to achieve these goals (Shamir et al, 1993). Transformational leaders also provide their followers with the feeling of independence, motivation and innovation, they also increase the sense of indentify, qualification and adequacy (Shamir et. All, 1993). These leaders provide their workers with the opportunity to experience and of course by encouraging them the level of innovation will be increased (Howell and Avolio, 1994). Transformational leaders increase the worker's intention in trying harder for ending up innovative organizational climate through growing the situation for self-admiration, qualification, adequacy and independence (Shamir et al. 1993). They teach their followers how to use their personal and organizational abilities to increase innovation and creativity.

Innovative organizational climate can modify the relationship between the predictive variables and innovative behavior through several ways. Innovative organizational climate would be effective about innovative behaviors by designing a suitable system of rewarding. Innovative organizational climate has a great effect on innovative behavior by appreciating and rewarding creative workers.

Innovative organizational climate makes the situation prepares for innovation by encouraging and changing the situations. This system by creating a flexible environment for workers let them solve similar problems in different ways. This issue can provide the situation for innovation. In general we can say that innovative organizational climate can modify the relationship between the predictive variables and innovative behaviors through two mechanisms.

The first mechanism says that innovative organizational climate can increase innovative behaviors. Change acceptance in the organization side, not insisting to keep the current situations, considering individual differences, using different methods to problem solving, increasing of creativity and etc. Are some characteristics that show the organizational support for creativity. Since creativity is primer to innovation, innovative organizational climate increases innovative behavior by increasing creativity.
The second mechanism is how to supply the necessary resources for innovative behavior, to express innovative behavior economical sources, enough human resources, a suitable system for rewarding and having enough time to follow creative ideas and having the support of the managers are important.

Innovative organizations know that for the absorbance phase in the process of creativity the creative person needs a plenty of time, freedom and the permission to know about different are of his/her own workplace. In inspiration phase a strict and close control is not necessary. In testing phase the top manager helps the creative workers to finish their incomplete projects sooner and easier by providing the necessary facilities and this fact makes a great increase in the worker’s motivation and risk taking. In general the knowledge and experience of the top managers about innovation and creativity process are of the important factors for organizational success. Optimum leadership style can also affect innovative organization climate and innovative behavior (Bayer and Green 1966). As an example the studies done in the industrial organization of Canada showed that flexibility, perseverance and the support of the management have a positive relationship with the workers, technological innovations (Kitchell, 1997). As Kozlowski and Doherty (1989) mentioned, because managers and supervisors are the topest personnel of an organization, followers like to generalize their personal understanding from their managers to the whole organization, so the followers who claim a great level of relationship with their supervisors in traduce their organizational as a protective and supportive organization to all. In addition managers can have a positive effect on innovative organizational climate by designing and specifying rewards to encourage factors such as; risk taking, intention to changes, sharing the formation with the workers (Salehos and Wang, 1993).

The other defined role for managers and supervisory in providing on innovative organizational climate is to supply the necessary resources such, time materials and needed information to show creative behaviors (Chandler, 2000).

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