Assessing Leadership Practices, Organizational Climate and Its Effect towards Innovative Work Behaviour in R&D

Haris M. Noor and Bari’ah Dzulkifli

Abstract—Achieving innovative organization has been the utmost agenda in every business operations recently. Thus, there is a need for a greater understanding of the leadership and organizational climate effect towards innovative work behaviour in work settings, particularly in R&D which involves creativity and innovation activities. The aim of this paper is to explore the relationship between leadership practice and organizational climate effect and its mediating effect towards innovative work behaviour. Data from 125 R&D scientists of public agricultural agencies were used to assess leadership practices of their superiors, organizational climate and their innovative work behavior. Results suggested there was a significant relationship between organizational climate and innovative work behavior. This finding would enrich the previous studies across samples, criteria and settings. Implications of these findings are discussed.

Index Terms—Innovative work behaviour, leadership practice and organizational climate.

I. INTRODUCTION

Innovation and creative capacity are essential determinants of economic prosperity in a globalising and knowledge-based economy [1]. Moreover, it is believed as a major source of competitive advantage and being a key factor of achieving high productivity that would induce economic growth. Hence, the productivity will be able to assists improvising society [2], [3]. The organisations can become more innovative by capitalising the employees’ ability to innovate. The abilities of capitalizing at individual level must be supported by the management system [4], [5].

There are numerous empirical studies that has proven that organisational climate is one of the factor to capitalise the employees’ innovative work behaviour [4], [6]. Believing that organizational climate as a determinant factor to generate desired behaviour, there were studies conducted that insist to promote leadership as an antecedent of innovative work behaviour [7]-[9].

However, the influence of social environment as factors to innovative work behaviour remains unclear, and only few studies conducted to examine such behaviour in non western country [10]. According to Ismail [11], there are critical needs for more studies to be conducted linking organisational climate factor in analysing their influences on innovation within the Malaysian context.

Given that vast amount of money invested by the government of Malaysia on education and training in the last fifty years, the shortage of highly skilled and quality talents remains apparent. For this reason, Malaysia needs professionals with the requisite skills and expertise to add to the critical mass of the nation’s talent and to strengthen the human resources including public agricultural R&D agencies in order to anticipate more productive and innovative workers [12].

Throughout the endeavors taken by government, agricultural sector in Malaysia still facing the challenge of high bill imported food, un-economic production cost besides climate factor [12]-[14]. Hence this study attempted to analyse the organizational climate in agricultural sector and its mediating effect between leadership practice and innovative work behaviour.

II. EMPIRICAL STUDIES

A. Relationship between Leadership Practices and Innovative Work Behaviour

The determining factors in organizational innovation are affected by individual characteristics, such as leadership, resistance to change or the innovation support roles [5]. Most of the researchers deductively agreed that leadership can stimulate innovative work behaviour [15], [16]. Janssen [17] found evidence that employees responded more innovatively to higher level of job demands when they perceived that their efforts were fairly rewarded by their leader. The reward itself can promote intrinsic motivation of the employees. However, the author found that, although the behaviour of giving rewards to the employees was found to be related to innovativeness [15], [18], [19], Sanders [20] have proven vice versa; rewarding has no positive correlation with innovativeness.

According to Amabile [21], modeling behaviour has been linked to creativity. Accordingly, there also a number of studies have attempted to capture aspects of leader behaviours that encourage creativity of employees and eventually proven the relationship [22]-[24]. This is aligned with studies conducted by [15] who evidentially found “Model the way” as the new model of five exemplary leadership practices. Studies have also considered the relevance of leader support directly linked to “work ideas”, or the actual innovative activities in which employees engaged in relation to employee creative performance [25]-[27].

• \( H_7 \): Leadership Practices has positive relationship with innovative work behavior.
B. Relationship between Leadership Practices and Organizational Climate

Leadership practices are set of behaviour that is applicable for anyone [15], [34]. Several research studies have proven that leadership has positive correlation with organisational climate [16], [22], [23], [31] [10], [15]-[17]. However, in these studies, the author found that the researchers were using different variables of leadership to test the relationship with organisational climate. According to Akkermans et.al, they have found that leadership behaviours have positive relationship with organisational climate. Akkermans and his colleagues listed eight variables of leadership behaviours; (controlling resource availability, delivering creativity & innovation training, fostering new ways to do thing, providing structure, sharing information approaching mistakes & failures, including others in decision making and focusing priorities).

While other researchers, De Jong, et al., [23], were using thirteen inventories of Yukl taxonomies [35], [36] of leadership behaviour to test the relationship and prove there are positive correlation. There are evidence showing authentic leadership contributes to a more positive work climate in the organisation as well [37]

Although there are differences of using different variables to test the relationship, both of these studies affirmed the appropriate leader’s behaviours could stimulate the environment of innovation within the organisation. Therefore, next hypothesis can be formulated as below:

- **H2**: Leadership Practices has positive relationship with organizational climate.

C. Relationship between Organizational Climate and Innovative Work Behaviour

De Jong and Den Hartog [26] have found the innovative work behaviour can be influenced by organization environment instead of just leadership. According to Hunter, et.al[9] although a variety of environmental variables have been identified that might influence creativity and innovation, many scholars stress the importance of climate to produce the relevant outcomes [8], [39]-[41]. Although there was a research that supports climate for innovation was not significant [42], most of the findings reported the significant positive relationship [43], [44]. That was because the organisational climate itself can designate the individuals, it is believed to increase intrinsic motivation of the employees [18], [26], [45], [46] According to Hassandra et.al [47], intrinsic motivation relates to the pleasure perception of doing behaviour. Meanwhile, intrinsic motivation is believed to be the most crucial factor to develop innovative work behaviour within employees [8], [48], [49] Thus, third hypothesis can be constructed as below:

- **H3**: Organisational climate has positive relationship with innovative work behavior.

III. THEORETICAL FRAMEWORK

Based on the literature discussed before, the above diagram demonstrated the relationship of the variables. (See Fig. 1)

- **H2**: Leadership practices will be positively related to employees’ innovative behavior.
- **H3**: Organisational climate will positively related to employees’ innovative behavior.

![Fig. 1. Based on the literature discussed before, the above diagram demonstrated the relationship of the variables](image-url)
authors have used Kouzes & Posner [51] Leadership Practices Inventory with reliability test 0.971. The inventory has 5 dimensions namely; Model the way, Inspire a shared vision, Challenge the process, Enable others to act, and Encourage the heart. Cronbach’s α for each dimension is as follows; 0.891, 0.905, 0.849, 0.907 and 0.892.

The instrument to measure the innovative work behaviour was developed by De Jong [28](2006) which has 15 items. The Cronbach’s α for innovative work behaviour was 0.928 with 5 points Likert scale ranging from 1 (never) to 5 (very frequently) as well.

V. RESULTS

A. Profile of the Respondent

<table>
<thead>
<tr>
<th>Demography</th>
<th>Category</th>
<th>Quantity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>63</td>
<td>42.3</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>86</td>
<td>57.7</td>
</tr>
<tr>
<td>Age</td>
<td>&lt;35</td>
<td>79</td>
<td>52.7</td>
</tr>
<tr>
<td></td>
<td>36-45</td>
<td>36</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>46-55</td>
<td>29</td>
<td>19.3</td>
</tr>
<tr>
<td></td>
<td>&gt;56</td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td>Education background</td>
<td>Postgraduate</td>
<td>85</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>&amp; above Degree</td>
<td>50</td>
<td>33.6</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>14</td>
<td>9.4</td>
</tr>
<tr>
<td>Years of Service</td>
<td>&lt;5 Years</td>
<td>50</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>6-10 Years</td>
<td>43</td>
<td>28.7</td>
</tr>
<tr>
<td></td>
<td>&gt;11 Years</td>
<td>56</td>
<td>37.3</td>
</tr>
</tbody>
</table>

The Table I above shows that female respondent is much higher that male (57.7 per cent). The corresponding respondents also perceived high education level by 57% which shows that pursuing studies and gaining knowledge are required for scientists to involve in their jobs expertise. Meanwhile, it can be concluded that years of service is fairly distributed among the categories.

B. Correlation Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Leadership practice</td>
<td>3.73</td>
<td>0.372</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II. Organizational climate (OC)</td>
<td>3.46</td>
<td>0.325</td>
<td>0.303**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III. Innovative work behaviour</td>
<td>3.68</td>
<td>0.48</td>
<td>0.16</td>
<td>0.451**</td>
<td>0.411**</td>
</tr>
</tbody>
</table>

*Notes: *p < 0.05, **p < 0.01

Table II showed the means, standard deviation, and correlations among the variables including the dimensions of Organisational climate. The outcome of the correlation of Leadership practices has no positive relationship towards innovative work behaviour Thus H1 is rejected.

Meanwhile, Leadership practices proved that it has positive relationship with organizational climate (r=0.303, p<0.01) although the correlational strength is quite low according to Guilford’s rule of thumbs. Therefore, H2 is accepted. This study also confirmed that Organisational climate has positive relationship with innovative work behaviour (r=0.451, p <0.01). The relationship shows moderate correlational strength. Hence, H3 is accepted.

C. Regression Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>r</th>
<th>p</th>
<th>F</th>
<th>df</th>
<th>R²</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 Leadership practices</td>
<td>-0.26</td>
<td>0.026</td>
<td></td>
<td>16</td>
<td>0.026</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X2 Leadership practices</td>
<td>-0.09</td>
<td>0.091</td>
<td>2.87</td>
<td>16</td>
<td>0.19</td>
<td>-0.16</td>
<td>1.075</td>
</tr>
<tr>
<td>X3 Organizational climate</td>
<td>0.204</td>
<td>0.051</td>
<td>1.87</td>
<td>16</td>
<td>0.303</td>
<td>0.451</td>
<td>5.603</td>
</tr>
</tbody>
</table>

Notes: *p < 0.05, **p < 0.01
Notes: X1=Innovative work behaviour, X2= Organizational climate

The regression analysis started with innovative work behaviour as the dependent variable. Table III, shows that leadership practices explains 2.6 per cent of the variance (R²=0.026). The results of multiple regressions in the Table III shows that leadership practices model have no significant positive impact on innovative work behaviour with (F=3.223, p> 0.05). Meanwhile, the result shows a significant positive impact between leadership practices and organizational climate with (F=12.393, p<0.05). The value of R² indicates only 9.2 per cent variance is explained by leadership practices in organizational climate. The model of the third regression concerning the innovative work behaviour indicates that organizational climate is a good predictor of innovative work behaviour (β=0.451, t=5.603, p<0.01) with the explanation value of 20.3 per cent on innovative work behaviour.

VI. DISCUSSION AND CONCLUSION

Proliferations of studies have been embarked to examine the relationship of leadership and its effect on employees’ behaviour. The studies showed that leadership can be an effective tool to obtain relevant outcomes [33]. Instead of influencing the relevant outcomes, leaders also play a critical role to shape organisational climate [52].

This research gives the outcome of analysis to examine the relationship between leadership practices and innovative work behaviour outcomes. However, one of the hypotheses (H1) was not supported as it is found to be insignificant although most of the literature reports positive significant relationship among the variables. The insignificant result in this study might be due to the job nature of R&D setting in Malaysian context. The job nature of scientists required them to work independently without involving with top management. This means that top management have placed much trust to the employees. According to [32] Imran et al., (2011), the attempted studies on examining relationship between leadership show inconsistent findings which can be
varied by many factors.

Interestingly, the rest of hypotheses tested have shown encouraging result. Leadership practices have significant relationship with organisational climate thus supporting the hypothesis (H2). The result is aligned with literature before this [9], [39], [40], [53].

As the organisational climate itself can enhance creativity among the employees, the literature found there is significant effect on innovative work behaviour which has been proven in this study. H3 is again supported. The finding which shows no relationship between organisational climate and innovative work behaviour might be due to the size of the organisation which posses strong leadership practice in the organisation rather than in large organisation [29]. In this case, public agricultural R&D agencies are considered as a large organisation which employed thousand of scientists.

Furthermore, the outcome of this study provides external validity to the social psychology which has been developed in Western country but can be employed in Malaysian sample. Therefore, it would enrich findings of organisational climate as effective predictors of innovative behaviour across criteria, samples and settings [9].

VII. IMPLICATION

This research indeed has theoretical and practical implications. Through the theoretical perspective, present research contributes a momentous proven theory in existing body of knowledge in the field of predicting innovative work behaviour. That was because little attention has been made to explore the impact of leadership practice towards creating the right climate in order to cultivate innovative work behaviour. This research also provides a guideline for top management to set the right climate for their workers. Consequently the right climate would boost up the intrinsic motivation among the workers to become more innovative. Although the results demonstrated non significant effect on the link of leadership practice and innovative work behaviour, there is evidence that leadership practice has positive relationship with organizational climate. Moreover, there is mediating effect between leadership practice and innovative work behaviour. In reality, the non significant finding might be due to the size and hierarchy of position in an organization. Further investigation should be made to analyse the factors affecting the relationship.

REFERENCES


[12] MOSTI Facts and Figure, 2008.


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