



The Effects of Innovation Climate and Leadership on Innovation Performance: A Case Study in Malaysian Public Sector

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Abstract: At present, there are currently strategic challenges facing the Malaysian government, including debt, deficit pressures, technology, innovation and globalization. Hence, Malaysian public service agencies recognize that they need to be resilient. In other words, they need to respond to people's demand (adaptation), provide efficient and effective services (competitiveness) and make themselves reputable (value). This study aims to answer this question: What are the factors that predict innovation in Malaysian public sector? The results reveal that both innovative climate and participative leadership are associated with the implementation of innovation in public organizations. In conclusion, implications on management practices and research are further discussed.

Keywords: Innovation, public sector, climate, leadership, organization

1. Introduction

At present, there are currently strategic challenges facing the Malaysian government, including debt, deficit pressures, technology, innovation and globalization (Siddiquee, 2008; Caverley, 2005; Ramli et al., 2017). Malaysian public service organizations, therefore, understand that they have to be resilient (Ministry of Finance, 2018). In other words, they must respond to people's demand (adaptation), provide efficient and effective services (competitiveness) and make themselves (value) respectable. Innovation was once identified as the source of growth and sustainability in the 11th Malaysia Plan (2016-2020) and serves as a key competency in achieving the status of a high-income country by 2020 (Economic Planning Unit, 2016).

To that end, Malaysia has implemented significant reforms and developments to overhaul and restructure the existing public sector structures and processes in its step in sustainable growth. This is for better improvements regarding public service accessibility, responsiveness and speed as it is the core of the government's obligations to its citizens. By designing and introducing new systems, goods, and facilities, creativity has become a fundamental attribute of world-class public service. It is proved that it will contribute to significant improvements in the efficiency, effectiveness and quality of outcomes by embracing innovation. Malaysian Public Service should enhance its efficiency and effectiveness in meeting the citizens' demands to participate with globalization (Siddiquee, 2007). Innovation is no longer reserved for those organizations and people who do scientific or technological work (Smith, 2002).

In this context, civil servants are seen as a vital mechanism for making innovations happen. One option that makes the public sector more innovative is to encourage its workforce to be innovative. For organizations to adapt and respond to uncertain, competitive and changing environments, they need to be highly creative and innovative in order to maintain a competitive advantage

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(Gumusluoglu & Isev, 2009; Kassim & Mokhber, 2015). However, there are limited research on factors of innovation in Malaysian public sector (Ali & M. Buang, 2016). In addition to this, there is lack of adequate frameworks for measuring innovation in public sector (Bloch & Bugge, 2013; Hsieh, 2008). Prior studies on innovation tend to focus on business and industry and very little work has focused on measuring innovation in public sector. It is hoped that the outcome of the research will find ways to improve the innovation climate and environment in the Malaysian public service. This paper identifies two important factors that influence innovation in Malaysia public service organization, which include innovative climate and participative leadership. This paper is divided into four sections, beginning with the introduction. Then, it is followed by extensive analysis on literature review. In the third section, proposed methodology and expected outcomes will be discussed and finally, this chapter conclude the expected outcomes. This study aims to answer this question: What are the factors that predict innovation in Malaysian public sector?

2. Literature Review

According to Schumpeter (1934), innovation is the “creation and implementation of new ideas, products, processes, and policies.” Newness includes anything perceived to be new by the people doing it or as something different for the organization into which the new thing is introduced (J. P. J. D. Jong & Hartog, 2008). Meanwhile, according to King and Anderson (2002), innovation is apparently regarded as something new based on the new ideas for innovation with further development efforts and it produces some benefits to the social setting. Besides that, they outline another characteristic of innovation as not routinely changed because innovation needs the creation of an entirely new process or the improvement of the existing process.

Also, they stated that innovation that involves developing something new is not considered as an innovative unless it is useful. Each definition may reveal some important aspects of innovation, but the most common element that has been emphasized by all authors is an element of newness as an essential part of innovation. Therefore, for the purpose of this study, innovation can be defined as the implementation of a new or significantly improved of existing process that is useful and bring benefit to the social setting.

2.1 Innovation Climate

Based on the previous research, the organizational climate is one of the main factors influencing innovation (Isaksen & Lauer, 2002). Nystrom (1990) defined climate as the observed and repeated patterns of behaviour, attitudes, and feelings that characterize life in the organization. Besides that, the climate is strongly related to an organizational culture where it is conveyed in beliefs and values, behavioral norms and expectations, stories, rites and ceremonies, and organizational structure (Tesluk et al., 1997). Thus, climate can be defined as a set of attributes specific to a particular organization that may be induced from the way the organization deals with its members and its environment. For the purpose of this study, the researcher will adopt the model of innovation climate which is the most widely accepted and developed by Siegel and Kaemmerer (1978) and Anderson & West (1998). Based on this model, three basic dimensions of innovation climate including participative safety, striving for excellence and support for innovation will be further discussed.

2.2 Participative Safety

The first dimension of innovation climate is participative safety. According to De Jong (2006), an organization will be considered as having a strong socio-emotional support when employees realize their colleagues' attitudes and behaviours are protecting their welfare and interests in ways that allow them to experiment. Participatory health is seen as one of the innovation climate dimensions, based on the assumption that participation in decision-making and perceiving the environment as interpersonally non-threatening would empower employees (West, 1990). High participatory safety will therefore allow for risk-taking and employees' willingness to suggest new ideas without fear. In addition, participatory safety is likely to induce employees' awareness of self-decision, resulting in increased motivation for a task compared to unsafe situations that make them more likely to perceive their thoughts, feelings and actions to be restricted (Zhou & Shalley, 2003). Thus, the researcher can conclude that participatory safety is a healthy environment that encourages and motivates employees in an organization to be creative and innovative.

2.3 Striving for Excellence

The second dimension of the innovation environment is the community members' concern about task performance excellence. High performance standards in highly innovative climates are welcomed and accept a variety of approaches to achieve excellence. According to West (1990), the pursuit of excellence can be defined as maximizing task performance. Further study was conducted and this aspect of innovative climate was labelled as "task orientation," indicating that employees would evaluate their current practices and proactively seek improvements (Anderson & West, 1998). Thus, striving for excellence can be referred to as performing a job for a better quality outcome through work processes amongst members of the work group.

2.4 Support for Innovation

The final dimension of innovation climate is innovation support, which is about approving and supporting in practice attempts to introduce new and improved ways of doing things (West, 1990). Innovation support takes various forms, including verbal support within and outside group meetings and interpersonal cooperation in the development and application of new ideas, and the provision by group members of time and resources to develop and implement ideas. When innovation support is also expressed and incorporated in a working group, individuals in the working group are more likely to be aware of the situation under their influence and are more likely to improve (Gebert et al., 2003). Therefore, based on the previous research, innovation support is expected to alert the individual to the possibility of innovation because they will find it easier to bring in ideas as support and resources will be available from others in the working group. These studies show that the environment of innovation including participatory health, striving for quality and supporting aspects of innovation has a positive impact on innovation. Thus, this study formulates the following hypothesis:

H1: Innovation climate has a positive relationship with innovation in Malaysian public sector.

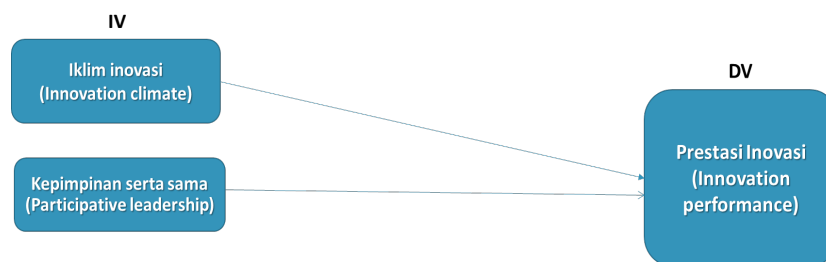
2.5 Participative Leadership

Participative leadership is defined as shared influence and joint decision making between a leader and their followers (Armenakis et al., 1993; Koopman et al., 2019) with the goal of giving followers greater discretion, extra attention and support, and involvement in solving problems and making decisions (Nystrom, 1990). Participatory leadership suggests that employees have confidence in them, and many studies suggest that participatory leadership has strong effects on different types of performance, including creativity and innovative behavior (Somech, 2006; Huang et al., 2010). While participatory leaders include workers in problem-solving and decision-making processes (Miao et al., 2013), they do not necessarily include the clear role modeling and encouragement that will enable these workers to be more confident in their creative capacity (i.e., high levels of CSE) and to engage in innovative behaviours (Newman et al., 2018).

Therefore, participative leadership is a various decision-making procedure that consists of consultation, delegating and task assignment that individual influence innovation. Based on the above understanding, the third hypothesis for this study is formulated as below:

H2: Participative leadership has a positive relationship with innovation in Malaysian public sector.

Fig. 1 - Conceptual framework



3. Methodology

3.1 Sample Characteristics

The sample consisted of 399 officers and staff in a federal ministry. 47% of the respondents were men, and 53% were female. Malay ethnics represented 91% (24) and followed by 4% for Chinese and 5% for other ethnics. 61% of respondents were from generation Y aged between 25 and 39 years old (n=243). About 32.7% (n=131) of the 399 respondents possessed the tertiary level qualifications (24.5% degree, 5.7% master and 2.5% PhD). The remaining 67.3% (n=268) held the academic qualification at the secondary level. Most of the respondents were civil servants from the ministry which contribute 18%, and 82% were from the ministry's departments and agencies. 75.4% (n=301) of the respondents were from management and professional group (grade 41-54, KHAS), and 24.6% were from supporting group (grade 11-40).

3.2 Research Procedure

The study was conducted at one of the federal ministries and its agencies in Putrajaya. The data was collected by using questionnaire and it was administered and collected via online (using google form). This would eradicate bias and

respondents could answer the questionnaire at their own time and space. Respondents should complete and return the questionnaire within a week. Researcher distributed 1000 copies of questionnaires with 50 copies for each agency. Out of the total questionnaires distributed, the researcher only received 399 completed questionnaires which represent 40% of the response rate. Respondents were chosen based on convenience sampling method because we only approached the most accessible respondents.

3.3 Measures

This study consisted of two independent variables including innovation climate and participative leadership, and the dependent variable, which is innovation performance. Each variable was measured through a questionnaire which is divided into four sections. All questions were measured by six-level Likert scale which consists of strongly disagree, disagree, slightly disagree, slightly agree, agree, and strongly agree. There were 6 items for Innovative Climate, 10 items for Participative Leadership and 5 items for Innovative Performance.

3.4 Data Analysis

In testing reliability, all variables achieved at least 0.7 for Cronbach Alpha. In testing the hypotheses, the researcher tested the first three hypotheses using the Pearson Correlation. The third hypothesis was tested by using multiple linear regressions. The following shows the general linear model for this study :

$$I = \alpha_0 + \beta_1 IC + \beta_2 PL + s$$

Note:

I: Innovation; β_1 , β_2 , β_3 , β_4 : Coefficient; IWB: Innovative work behaviour; IC: Innovation climate; PL: Participative leadership; s: Error.

3.5 Results

The relationship between variables was investigated by using Pearson correlation. The confidence level used in this hypothesis testing is *95% confidence interval*, which is the level of significant is 0.05 ($\alpha = 0.05$).

H₁: Innovation climate has a positive relationship with innovation in Malaysian public sector.

The result shows that innovation climate is positively correlated with innovation and the correlation strength is strong ($r = .694$). It shows that innovation climate has a strong correlation towards innovation. This is because innovation climate signifies that the organizational culture can encourage and motivate employees to be creative and innovative in an organization.

H₂: Participative leadership has a positive relationship with innovation in Malaysian public sector.

In defining the relationship between participative leadership and innovation, the table above shows that there is a strong and also positive correlation relationship ($r = .647$) between these variables. This shows that participative leadership can influence individual innovation, particularly when it involves the exchange of information and task coordination. Therefore, by using Pearson correlation to test the hypotheses, the result shows a positive and significant correlation relationship between the dependent and independent variables. It means that, innovative work behaviour, innovation climate, and participative leadership contribute to the innovation in Malaysian public sector.

H₃: Combination of innovation climate, and participative leadership has a positive relationship with innovation in Malaysian public sector.

Based on the output in Table 1, it shows that the R value is 0.234 which means only 23.4% of independent variables are related with dependent variables. R-squared above explains that only 5.5% of the variability of dependent variable could be explained by the variability of an independent variable. Thus, there is a significant relationship between the combination of innovation climate and participative leadership towards innovation in Malaysian public sector. To examine which dimension contributes to the higher scores in innovation, the standard multiple regression analysis was performed. In evaluating each of the independent variables, the variables were compared according to the standardized coefficients. The beta values were used in comparing the contribution of each independent variable. The beta with highest values indicate the strongest contribution of the independent variable to explain the dependent variable.

Table 1 - Result of multiple regressions analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.234 ^a	.055	.050	2.48874

a. Predictors: (Constant), PARTICIPATIVE LEADER, INNOVATIVE CLIMATE
 b. Dependent Variable: INNOVATIVE PERFORMANCE

Table 2 below shows beta values of the independent variables. It shows that innovation climate has the highest value of beta compare to participative leadership. It means that innovation climate makes the strongest unique contribution in explaining the dependent variable. If the significance value of the independent variables is less than 0.05, it explains that the variables are making a significant unique contribution to the prediction of the dependent variable. The significance value of innovation climate and participative leadership shows the significant unique contribution to the prediction of the dependent variable as all these variables are less than 0.05.

Table 2 - Assessing beta values coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	18.683	.753		24.805	.000		
1 INNO CLIMATE	-.089	.043	-.122	-2.091	.037	.697	1.436
PARTIC LEADER	.098	.021	.278	4.754	.000	.697	1.436

a. Dependent Variable: IP

4. Discussion

This research seeks to examine and understand the determinants, namely climate of innovation and participatory leadership that can stimulate innovative behaviour among public servants in a public sector in Malaysia. The results obtained from this study support the strong relation of these factors to innovation. From the correlation analysis, all factors at the significant $p < 0.05$ level show a positive relationship towards innovation. We will further discuss explanations on the analysis and findings below.

4.1 Innovation Climate

In this study, it was hypothesized that the innovation climate has an important relationship with innovation and from the analysis, it was found that the innovation climate has a strong relationship with innovation ($r = .694$). For the purposes of this study, innovation climate consists of three basic dimensions including participatory safety, excellence striving and innovation support. According to Edmondson (1999), participative safety concerns that employees should feel psychologically safe when they propose new ideas or break the status quo without imposing any punishment. Therefore, the more individuals in their work group perceive participatory safety; the more likely they are to be innovative. High participatory protection would thus allow for risk-taking and ability to present new ideas without fear of personal censorship. Another dimension of innovation climate that gives a significant interaction is striving for excellence. When individuals perceive that people in their work group strive for excellence, they are more likely to perceive being in control after a performance gap has been detected.

Another dimension of the climate of innovation that gives a significant interaction is pursuit of excellence. Such positive assessments are expected to lead to improved innovative work behaviour. This is consistent with previous studies indicating that striving for excellence indirectly communicates implicit or explicit expectations of role to individuals in the working group in which they should behave in such a way to achieve performance of excellence (Tesluk et al., 1997). Innovation funding is just another aspect of the atmosphere for innovation. As indicated in Amabile et al.'s (1996) study, the role of supporting group work in encouraging creativity and innovation cannot be denied. Workgroup support also offers a variety of roles for its members. In this study, it may be useful to consider that group work support gives employees the opportunity to receive constructive feedback from other members of the group and to share experience or knowledge among themselves. Trust and openness to new ideas and a good mix of skills are key ingredients in building a good project team.

4.2 Participative Leadership

This study found that participatory leadership plays a role in promoting employees' creative behaviour. The result has demonstrated a positive and significant correlation between participatory leadership and innovation ($r = 0.647$, $p < 0.01$). Participation is correlated with essential consultation, collaboration, and role assignment leader behaviours. Consulting includes efforts to promote and facilitate the involvement of workers in decision-making Yukl (2010). When individuals believe that they can take part in decision-making, their enthusiasm and interest will likely increase. This will sustain or improve their intrinsic motivation, thus it results in higher levels of creative activity (Amabile, 1988). The more employees can participate in decision-making, the more freedom they have to plan and act, as well as the more enthusiastic and committed they feel challenged by their tasks. Delegating is yet another dimension of participatory leadership in which leaders facilitate the participation of employees in the decision making process. When individuals believe they can take part in decision-making, their enthusiasm and interest will likely increase. This will motivate employees to experiment with new ways of making their work more intrinsically motivated as they see fit, and more likely to innovate. The object of task assignment, as stated in the early chapter, is to direct the work activity and make sure that people know what is expected of them (Jones, 2007). Hence, when work becomes more challenging, people tend to be curious, willing to take risks, and persistent when faced with obstacles. Their intrinsic motivation is enhanced, and the creation of new and potentially useful ideas and eagerness to implement them should be encouraged. According to Amabile et al. (2018), a potent way for leaders to stimulate innovation is to match people with the right assignments. Therefore, top-level government agency management needs to assign jobs to the civil servants that require their specific creative thinking expertise and skills to enhance their intrinsic motivation that will indirectly stimulate innovation.

Finally, based on standard multiple regression analysis, the innovation climate is an independent variable that is positive and is strongly significant in determining innovation in the Malaysian public sector, followed by participatory leadership. This is because the organizational climate towards innovation is a vital role to foster employees' innovativeness and creativity in encouraging innovation. Participatory leadership has always shown itself to be a good indicator of the creative job actions of employees. Participatory leadership is the external influence that will improve the intrinsic motivation of workers, as well as their sense of duty, productivity and power. According to Woolfolk (1995), anyone with intrinsic motivation does not need any rewards to do work, whether in terms of recompense or punishment. This is important because it will motivate employees to experiment with new and more innovative ways of doing the work. In fact, it will facilitate the development of new and potentially useful ideas and the eagerness to implement them.

In conclusion, based on the findings, this research fits the purpose of this study, where it has identified two significant positive factors, namely innovation climate and participative leadership that are positively related to innovation. By enhancing these factors, it will help enhance the capacity and outcomes for innovation among Malaysian public sector civil servants.

5. Conclusion

In conclusion, IC and PL have become the most important factors for IP. Previous studies have been conducted to identify factors for successful implementation of innovation performance. However, there have been limited empirical studies tried to investigate the relationship between the IVs and innovation performance especially in Malaysian Public Sector. Based on proposed model and previous studies, research hypotheses are developed. The next step of this study is to design a questionnaire, which will be used for pilot study data collection in public sectors in Malaysia. Hopefully in future research agenda, the findings study can be benefited, used and contributed not only to academic but also to the industry, especially to the Malaysian Public Sector.

In view of increasing global competition, companies need to be more creative with their workers irrespective of mission obligation or level of organizational hierarchy. The results of this study have some significant implications for future practice. The creative conduct of individuals in the workforce is the basis of every high-performance organisation, even in the government sector. Government incentives are very important to inspire officials to think creatively and work innovatively. By implementing KPI, the public servants can look for more innovative ways and means to anticipate and respond to change faster and more effectively. In addition, employees should be rewarded for their creative ideas and consideration should be given to tolerance for errors so that employees do not shy away from taking risks.

The government also needs to provide an environment that is conducive to stimulate innovative behaviours among the employees because it is very important to inspire employees to think creatively and work innovatively. Participative safety is one of the elements that will encourage innovation because it will enable the civil servants to take a risk and demonstrate a willingness to suggest new ideas without fear of personal censure. Besides that, when individuals perceive that people in their work group strive for excellence, they are more likely to perceive to be under control and are expected to improve their innovative work behaviours. Innovation support will also enhance the innovative

behavior among civil servants because some research have shown that the role of group work support in stimulating creativity and innovation cannot be denied.

Other than that, effective leadership through participative leadership is also one of the most significant components. The leaders should be skilled in creating and maintaining a positive working environment and motivating, as well as inspiring the team members to take a positive approach to work and be highly committed. An effective leader must foster a high morale level and make them feel supported and valued. The leader must also have the capacity to consult which involves efforts to encourage and facilitate the participation of employees in a decision-making process. When individuals believe that they can take part in decision-making, their enthusiasm and interest will likely increase. In addition, task delegation within government agencies must be encouraged. This is because it will make the employees feel secure, knowledgeable and respected by giving them the opportunity to exercise self-direction and power. This will motivate employees to experiment with new ways of doing work and to innovate more. Task assignment also constitutes one of the most important components of participatory leadership. It will enhance their intrinsic motivation by matching people with the right tasks and promoting the creation of fresh and potentially useful ideas and eagerness to implement them. Therefore, the government agencies may use these findings as guidelines for them in developing a conducive work environment to promote creativity among public servants.

This study shows that the climate of innovation and participatory leadership are not the only factors determining innovation among the employees. There are several other considerations to be addressed as well, such as organizational structure and client expectation, which may be one of the determinants of creative behaviour. Despite that, these other elements need to be further investigated to clarify this assumption. The main theoretical contribution in this study is about the relationship between the environment for innovation and participatory leadership in Malaysian public sector innovation. It implies that these two factors contribute to fostering creativity among public servants among other elements.

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