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Assessing the Moderating Effect of Competition Intensity on HRM Practices and Organizational Performance Link: The Experience of Malaysian R&D Companies.

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Abstract

Nowadays, firms in R&D sector face many challenges in enhancing performance. To perform, these firms need to develop strong internal workforce to address increasing environmental challenges. Based on the contingency theory, this paper examined the moderating effect of competition intensity on the relationship between human resource management (HRM) practices and organizational performance. Using data from 64 R&D companies, the hierarchical regression analysis however failed to show significant moderating effect of competition intensity on such relationship. Several plausible causes are discussed. Given that, this study offers good insights about the practice of HRM in this sector

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Keywords: Competition intensity; HRM practices; Organizational performance

1. Introduction

Since 1996 the R&D sector in Malaysia has been continuously received attention. Several fiscal and non fiscal incentives are provided to support the growth of this sector. These incentives have allowed more local start-ups to grow and more entrepreneurs to enter the sector. Today, Malaysian R&D sector has become more intensified with

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various types and sizes of players. The move that each player presents in order to win the game has created intense competition. This intense competition, unfortunately, has impeded firm's ability to implement its strategic action effectively. Accordingly, to maximize performance, managers need to pursue internal organizational activities that best match the conditions of their firms' external environment. This implies that effective people management is crucial to develop internal strength that can help organization to encounter any possibilities imposed by the environment. The role of environment as a crucial contingency factor has been long advocated by organizational researcher (Dess and Beard, 1984). Environment has been frequently discussed as moderating impact in the strategy – organizational performance relationships (Chang & Huang, 2005; Guthrie, 2001; Hoque, 1999; Khatri, 1999; Liao, 2005; and Shih & Chiang, 2005). In the HRM literature, there are studies which have shown that the relationship between HRM practices and organizational performance is contingent upon environment (Chandler, Keller and Lyon's, 2000; Lundvall and Kristensen, 1997). However, such empirical studies are still limited. As a result, the present study intends to deepen the existing knowledge on such relationship.

2. Literature Review

Studies have shown that the success and probability of survival for a business can be linked to the intensity of competition in a given industry environment (Lichthenthaler, 2009; Ramaswamy, 2001). Competitive intensity refers to the degree of competition a firm faces in terms of competitors' actions and reactions in its attempt to generate returns (Pecotich, Hattie & Peng Low, 1999). High competition is characterized by aggressive competitors that attack each other on promotion, product development and distribution to satisfy various customers' needs. Under greater competition, a firm aggressively seeks for more environmental resources to exceed other competitors (Jaworski & Kohli, 1993). Lichthenthaler (2009) asserted that competitive intensity strengthens the positive effects of outbound open innovation on firm performance. Ramaswamy's (2001) findings indicated that private ownerships enterprises tend to experience better performance than state ownerships during high competitive rivalry due to their ability to be flexible in adjusting to the requirement of a market economy. Payne, Kennedy and Davis. (2009) recommended that to increase performance in high rivalry environment, a firm needs to be more specialized.

Previous studies also have shown that environment influences the practice of human resource management in enhancing firm performance (Chandler, Keller and Lyon's, 2000; Lundvall and Kristensen, 1997). Different environments pose different impacts on the people management. Effective management of human resources is important to develop internal strength that can facilitate organization to deal with intense competition. Lundvall and Kristensen (1997) stressed that the competitive environment has shifted the demand for workforce towards more skilled workers who have the ability to learn to absorb change and can communicate as well as cooperate with individuals with different kinds of expertise. They also asserted that competitive intensified firms tend to focus more on building learning organizations than investing in formal training programs. In other study, Chandler et al. (2000) found that in a competitive environment, formalized HR practices tend to affect financial performance negatively as the implementation of formal HR practices gives negative influence on employee perceptions of innovation supportive culture.

It is expected that managing and retaining R&D people such as scientists and engineers become more challenging in intensified environment. In environment where competition intensity is high, competitors' actions are usually aggressive in all aspects from acquiring and retaining the best employees to attracting and maintaining customers. In this situation, scientists and engineers have a lot of options to choose where they want to work. Unfortunately for R&D companies however, this situation has created a big challenge for them to obtain, manage and retain these R&D professionals. This is because different R&D professional prefer different types of rewards (Kim and Oh, 2002; Lee & Wong, 2006), ways of performing works (Treen, 2001) and types of development programs (Lee, Wong and Chong, 2005; Wang and Horng, 2002).

Studies in the past also have highlighted that the performance of an organization depends on the environment where the organization operates. Richardo and Wade (2001) defined organizational performance as the organization's ability to achieve its goals and objectives. Daft (2000) identified organizational performance as the ability of the organization to attain its goals by using resources in an efficient and effective way. Financial performance is desirable in order to prove the companies' immediate outcomes to fund its activity and attract investors. Profitability has been considered as a measure of improved internal efficiency and value added. This is because in the beginning firms may not enjoy higher net profits to repay investment or fund further investment.

However, internal efficiency gained later may lead to reduced costs, at the same time; improved product performance may increase the price of the product in the market (Geroski & Machin, 1992).

The behavioral approach which has its roots in contingency theory is the most widely used perspective that can be utilized to enhance understanding of how strategic alignment can affect organizational performance (Wright & McMahan, 1992; Venkatraman, 1989). The contribution of HRM practices in developing the right behavior of employees relies on the environmental condition. Different environment requires different approach to develop the right human resource behaviors that can facilitate in attaining better performance. Innovation is the core activity of R&D firms. Developing the right behavior to enhance innovation is very crucial especially during high competition. HRM practices are expected to have strong influence on performance in high competitive intensity surroundings. The aforementioned discussion imply that the higher the competitive intensity of a firm's environment, the stronger the contribution of HRM practices through facilitating firm to adapt to the environment and this, in turn, improve firm's performance. Thus, the following hypothesis is postulated:

Competition intensity positively moderates the relationship between HRM practices and firm performance.

3. Methodology

The companies were selected through a systematic sampling method from a list of R&D companies provided by the Companies Commission of Malaysia (CCM, 2008). The population for this study consisted of all R&D organizations in Malaysia. Organizations involved in R&D can be categorized in two: government agencies and non-government agencies. For the purpose of the present study, only non-government agencies are included. This is because the HRM practices for all government agencies are regulated by the Public Service Department (PSD) or *Jabatan Perkhidmatan Awam (JPA)* and consequently, there may not be much variation in the practices of human resource management. R&D organizations, in this study, refer to those whose core activity is conducting research for the development of new products and/or processes. Each company was given a set of questionnaires to be completed by the R&D manager and HR manager. This study received 64 responses giving a 36 percent response rate.

The predictor (HRM practices) was defined as people related practices employed by an organization to attract, deploy, develop and reward their R&D professionals. Respondents were asked to state how accurately the statements described their company's HRM practices. The measurement items for HRM practices were drawn from the existing literature (e.g. Delery and Doty, 1996; Ramlall, 2003; Schuler and Jackson, 1987) All together, the SHRM practices were measured using a 49 items with a seven-point Likert scale, ranging from 1 = "very inaccurate" to 7 = "very accurate". The moderating variable, competition intensity was conceptualized as the degree of competition a firm faces in terms of competitors' actions and reactions as well as price competition in its attempt to generate returns (Pecotich et al., 1999). Competition intensity was assessed using four items adapted from Pecotich et al. (1999). The respondents were requested to respond to each item using a seven-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree". The degree of satisfaction on the statement given is used as proxies to indicate to what extent external factors have impacts on their organizations. The higher the satisfaction rated on each statement by the respondent, the more it reflects the external factor has impact on the respondent's organization and vice versa. The dependent variable, firm performance was examined using profitability or return on sales (ROS). In this study, ROS is considered a good indicator of the extent to which R&D firms have been able to generate profits from sales in order to allow firms to fund further R&D activities later on.

In order to confirm on the dimensionality of HRM practices and competition intensity, principal component factor analyses with varimax rotation were used. The analyses produced 4 factors with eigenvalues greater than 1 and explained 77.49% of the variance for HRM practices while 1 factor for competition intensity with 68.44% variance explained. Cronbach's Alpha for the four HRM practices (teamwork, development, reward & participation) and competition intensity were all above the suggested threshold of 0.7 (Hair, Black, Babin, Anderson and Tatham, 2006).

4. Results

A four step hierarchical regression was conducted to test the hypothesis. Table 1 shows the results of hierarchical multiple regressions evaluating the interaction effect of competition intensity on the relation between HRM practices and organizational performance. The set of the control variables entered at step 1 accounted for approximately 2% of the variance in organizational performance. The set of predictor variables of three HRM practices entered at step 2, accounting for approximately 24% of the variance in organizational performance. These variables accounted for the largest change in R square. Competition intensity was the moderator variable entered at step 3, contributing only 3% to R square change. The interactions (between competition intensity and the four HRM practices) entered at step 4 produced an R square change of 3.4%. Of the four set of variables (control, predictor, moderator and interactions) entered, only variable entered at step 2 or in model 2 (predictor) produced significant F-test, F (4,56) = 3.99, p<.01. This means that adding teamwork, development, reward and participation practices to the model resulted in accounting for significantly more variance in organizational performance. Given adding moderator and interaction variables in the model did not lead to a significant increase in the model R square value, hypothesis is not supported.

Table 1. Results of Hierarchical Regression of HRM Practices and Environment (Competition Intensity) on Organizational Performance

Predictors	Model 1		Model 2		Model 3		Model 4	
	Unstd	Std	Unstd	Std	Unstd	Std	Unstd	Std
Step 1: Control Variables								
Constant	.11		-.04		-.14		-.16	
Age	.00	.11	.00	.07	.00	.08	.00	.13
Size								
Small	-.01	-.06	.01	.08	.01	.05		.05
Medium	-.02	-.13	-.00	-.02	-.01	-.04	-.01	-.01
Step 2: HRM Practices								
Teamwork			.01	.09	.01	.12	.01	.14
Development			-.04	-.34***	-.03	.30	-.03	-.29
Reward			.02	.23*	.02	.22	.02	.18
Participation			.03	.26**	.03	.24	.03	.27
Step 3: Competition Intensity					.02	.18	.02	.17
Step 4:								
Competition Intensity x Teamwork							.01	.05
Competition Intensity x Development							-.04	-.21
Competition Intensity x Reward							.02	.12
Competition Intensity x Participation							.01	.05
R^2	.02		.24		.27		.30	

ΔR^2	.02	.21	.03	.03
ΔF	.45	3.99***	2.28	.63

Note: p<.10, **p<.05, ***p<.01.*

5. Discussion

The results from the hierarchical regression analysis indicated that environment did not moderate the relationship between HRM practices and organizational performance. These results are contradictory with the previous research findings (Chandler et al., 2000; Lundvall and Kristensen, 1997). The possible explanations to the lack of significant effect could probably due to R&D firms in Malaysia are too focused on implementing traditional administrative functions such as practicing T&D and reward, however, failed to incorporate business environment perspective in their process of managing human resources (Ulrich, 1998). In other words, they concentrate more on developing, changing and maintaining internal practices to enhance effectiveness rather than putting effort to link internal activities to the firm environment necessities. This is consistent with Rowley and Abdul Rahman's (2007) findings which noted that the management of people in Malaysian locally owned companies had not shifted far from the "personnel" management approach towards "Human Resource" management approach. According to Kaplan (1992), incorporating business perspective is equally important to building internal capability's effectiveness. In this regard, the failure to align HRM practices to environment makes it hard for firms to utilize their effective internal capability to deal with external pressures (e.g. intense competition, rapid technological change) which, in turn, hinder the possibility to realize financial business outcomes (Ulrich, 1998).

Another plausible explanation could be because these HR practices are not environment sensitive especially in a growing and an immature sector such as R&D sector in Malaysia since firm survival is more important than competition. This means that regardless of the condition of environment, the utilization of human resource mainly through implementing certain HRM practices effectively is more crucial to facilitate in enhancing performance of R&D organization than trying to align the practice with the environment.

Final justification could be attributed to the problem of power. The difficulty in the detection of moderating effect in the present study could have also resulted from the small number of total sample size which may have decreased the statistical power to produce significant results using multiple regressions analysis (Aguinis, 2004).

6. Conclusion

Empirically, the findings of this study fail to show the moderating effect of competition intensity on the relationship between HRM practices and firm performance. Nevertheless, this study provides good insights about the practice of HRM in this sector. Future studies should utilize a larger sample to validate these findings.

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