

Human Resource Management Practices as Predictors of Innovation among Johor SMEs

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Abstract— SMEs have been recognized as a key source of innovation in many developed and developing countries. However, much of existing research on predictors of innovation was aimed at identifying the effects of structural and external factors that are more appropriate for larger firms. Fewer studies have considered the role of HRM practices on SMEs innovativeness. Furthermore, empirical evidence in existing studies draws mainly from samples in developed countries which limit their external validity. Therefore, this study aimed to investigate whether HRM practices are significant predictors of innovation, as measured by the number of new products, products improvements as well as manufacturing improvements among Johor SMEs. Forty-four SMEs in the food and beverages sector in Batu Pahat district participated in the cross sectional survey. It is found that HRMPs explained 57% variance in innovation among SMEs. However, only recruitment and selection and job security were significant predictors. In the face of limited resources, SMEs' owner managers tend to opt for immediate measure to promote innovation through recruitment of innovative employees.

Keywords- HRM practices; innovation; SMEs; Johor

I. INTRODUCTION (

SMEs have been recognized as a key source of innovation [1-4] despite their limited resources [5]. According to Acs, et al. [2], Moha Asri [6] and Bollard [7], most of large firms that dominate the global economy start as SMEs. In many cases, the rise of these firms is due to their founders developing radical new skills, knowledge and information or innovations [8-9]. Acs, et al. [2] contended that in the modern economy, innovation remains largely the work of smaller firms compared to large firms. This trend might be attributed to increased call for internationalization among SMEs [10] and increased agility in larger organizations which pose threats to SME niche markets [11]. Furthermore, the ability to innovate is increasingly viewed as the single most important factor in sustaining competitive advantage [12]. As SMEs continue to be the driving force of Malaysian economic growth, there is strong need for understanding on how condition of HRM practices affecting the innovative capability.

Recognizing the importance of innovation, there are numerous studies on predictors of innovation being conducted, ranging from firm-specific characteristics [13] to the effects of external environment [14]. Much of these studies were drawn mainly from samples of large firms in developed countries. This poses significant limitation in terms of external validity of

the findings and thus its applicability. In fact, Hosfede and Janssens et al. [15-16] claimed that cultural differences might influence the dynamics of innovation predictors in organizations. Furthermore, SMEs have unique characteristic such as limited financial resource to fund production and provide incentives, which necessitate factors influencing innovation such as HRM practices to be further investigated.

Although human resource management practices (HRMP) have been claimed to have positive influence on organizational performance [17] and development [18], they received limited attention in relation to innovation among SMEs, especially in Malaysian context [19].

Thus, this study focuses on the influence of HRMP on organizational innovation among SMEs in Malaysia.

The dominance of SMEs in Malaysia (more than 95 percent of the business units are classified as SMEs) [10], presents an interesting case especially when it is a developing country with one of the most comprehensive technology policies and innovation systems [20]. Thus, it is necessary to investigate whether HRMPs have significant influence on organizational innovation. This investigation of HRMPs and innovation proceeds as follows: the literature review; methodology; results; discussion and conclusion; and implications and limitations.

II. LITERATURE REVIEW

According to Damanpour [21], organizational innovation refers to the creation or adoption of an idea or behavior new to the organization. Despite a diverse literature on innovation, they are not well integrated into a coherent theoretical framework [22]. According to Lam [22], there are three major approaches in studying innovation. Organizational design theories focus on the influence of structural forms and the propensity of an organization to innovation while organizational cognition and learning theories tend to focus on the micro level process of how organizations develop new ideas for problem solving. A third approach is organizational change theories which consider innovation as a capacity to respond to changes in the external environment. Consequently, this study draws from the organizational design approach by arguing that innovation of SMEs is significantly influenced by the structural forms (e.g. HRMPs) as SMEs are labor intensive in nature [23-24]. Furthermore, HRMPs are seen as critical management issues in the mist of ongoing restructuring of

management and organizational practices designed to cope with an increasing complex and rapidly changing knowledge-based economy [25]. Such changes include formation of various types of teams in organizations, continuous learning, decentralization of decisions to encourage empowerment, and emphasis on internal knowledge dissemination. Similarly, Barney [26] argued that HRMPs should be central strategy to sustain competitive advantage of organizations in the present existing dynamic business environment.

A. Innovation in SMEs

Malaysian SMEs in the manufacturing sector use a common definition by the Small and Medium Industries Development Corporation (SMIDEC) [10] as follows;

Micro-enterprise : Sales turnover of less than RM250,000 OR full time employees less than 5

Small enterprise : Sales turnover between RM250,000

and less than RM10 million OR full time employees between 5 and 50

Medium enterprise: Sales turnover between RM10

million and RM25 million OR full time employees between 51 and 150

Given this definition, more than 95 percent of business establishments in Malaysia are considered small business [10].

Since there are no universally accepted characteristics or features of small business or SMEs, particularly in the Malaysian context, international literatures are used as point of reference when appropriate. Bridge et al. [27] and Wong and Aspinwall [28] identified several common characteristics of small business which include ownership, resource, informal systems and procedures, control, management, organization structure, and organizational culture.

In terms of ownership, Malaysian small businesses are usually privately owned by individual or partners, typically registered as sole proprietorship, partnership or private limited company where the management of the business resides with the owners [29]. The entrepreneur or founder of the business directs the company, and acts as both manager and worker, leading to the term owner-managers [30].

A small business often has limited resources compared with larger firms [31] and more vulnerable to changes in the external environment [32]. Thus, they are highly dependent on the ability of the owner-managers to generate resources and manage business risks [27].

The structure of small business is often flat and informal [28] which leads to greater flexibility in work but with limited or less clear division of responsibilities. The operations are also less complex where processes are more fluid and adaptable to various situations [28]. The strategy of business would also correspond to that of the SMEs' owner-managers due to their dominant position [27]. In terms of organizational culture, SMEs usually have an informal, organic and unified culture where the behavior of employees is more easily influenced by the owner-managers' philosophy and beliefs [33, 28].

As evident from the discussion on the characteristics of small business, the owner-managers are the 'heart' and the 'brain' of the organization. They have significant influence on the decision-making processes [31], knowledge management initiatives [28], and product innovation [34]. This is because, surviving on a small scale, SMEs tend to be creative, aggressive in exploiting the opportunity and produce more products compared to their competitors [35].

Generally, studies on innovation in SMEs are relatively limited although there are several attempts to study SMEs' innovation comprehensively [36-38]. However, most of these studies were aimed to study innovation in SMEs in developed countries such as the United Kingdom and Italy with very limited studies on developing countries [39]. Massa and Testa [40] contended that although there have been efforts to study the effect of organizational size on innovation, the results are inconclusive. For example, Acs et al. [2] found that smaller firms are more innovative compared to large firms while Hausman [41] found that limited resources and capabilities for conducting in-house R&D activities limit SMEs' innovative capabilities. However, these difficulties can be offset by their flexibility and ability to decide quickly on matters concerning innovation because the organizations' slim structure.

B. Human Resource Management Practices (HRMPs) in SMEs

Human resource management is the utilization of individuals to achieve organizational objectives whereas human resource management practices (HRMPs) are defined as activities covered by at least five functional areas which include recruitment and selection, human resource development, compensation, safety and health and employee and labor relations [25]. The role of HRM in organizations is becoming increasingly critical due to the unprecedented challenges of rapidly changing business environments, coupled with often volatile and unpredictable human behaviors at workplace. Consequently, good HRMPs have shown to have positive influence on organizational performance [42], growth [43], productivity [44] and many other organizational outcomes [45].

Recognizing its importance, there has been an increasing interest in HRM activities in smaller and medium sized firms (for example [36-38]) which is partly attributed to the unique nature of SMEs. Small firms are characterized by informal HRM although some suggest that once the firms grow, there is a greater sophistication in HRM practices [46]. Furthermore, Reid and Adams [47] claimed that most SMEs do not have HR or personnel managers and in cases where there are, HR or personnel managers are not generally involved in matters of strategic importance. On the other hand, Anderson [48] found that there is a strong link between status of the HR-activities and the status of the person in charge of them. Thus, if the HR managed is assumed by the SMEs' owner-managers, the HRMPs tend to be more structured and well-managed.

There are also differences in terms of HRM practices of growth-oriented versus non-growing SMEs [49] and family-owned versus non-family owned SMEs [47]. Growth oriented

and non family owned SMEs are more likely to have structured HRM practices.

Staffing and reward practices remain important HRM issues for SMEs due to high turnover among SMEs [50]. Nevertheless, major HRM practices, recruitment and selection remain areas where SMEs exhibit poor HRM practice [51-52]. They also tend to be lacking in terms of providing formal training for their employees [53]. There is strong evidence that the smaller the firm, the less the provision of structured training [54]. However, the lack of formalized training structures may, to some extent be compensated for by informal training activities.

C. *The Relationship between HRMPs and Innovation*

Human resource management is considered as key element of successful innovation since human element is involved in the whole innovation process [55]. This perspective is rooted in contingent perspective of HRM where effective human resource management practices are those that are consistent with organizational aspects and strategies [56]. In fact, studies on the relationship between HRMPs and innovation showed that good human resource practices have significant effect on innovation performance of organizations [57-60]. Organizations focusing on training and development employ extensive recruitment and selection, employment security, incentives rewards systems and innovative work practices tend to enhance innovative activities in organizations. Laursen and Foss [61] further argued that HRMPs are more effective in influencing innovation performance when applied together than when applied alone.

Hashim et al. [19] examined the relationship between human resource practices and innovation activity in Malaysian SMEs. They found that reward, training, skills sharing, people-oriented approach, innovation capabilities development, recruitment, hiring, continuous training and job security have significant relationships with improved services and new services but not with new or improved products. However, this finding, similar to most cross sectional survey studies, suffers from small return rate (22%) which might affect the generalization of the finding.

Ngah and Ibrahim [35] found that the SMEs which are investing in good employees relations by creating a friendly atmosphere, and have a close network to nurture cooperation of the employees have positive effect on the innovation activities and organizational performance. The current study aims to extend Hashim et al [19] by including the job security dimension as part of HRM practices in SMEs..

D. *Conceptual Framework and Hypotheses*

The basic premise of this study is that the ability of organization to innovate is closely linked to how it organizes its human resources management practices. The human resource management practices (HRMPs) in this study were focused on employees' participation, team-based practices, compensation, training and development, job security and recruitment and selection. These HRMPs practices were chosen based on their recurrence in innovation literatures. Job security was examined as a predictor in this study because job security

and employees' participation increase employees' commitment towards their organization, which in turns would stimulate the level of innovativeness in an organization. Similarly, compensation, training and development could be perceived as incentives that would motivate creativity among employees and thus spur organizational innovation. Recruitment and selection is imperative in terms of selecting high performing and innovative employees. Team-based practices would encourage empowerment and thus stimulate innovative ideas. In the context of this study, innovation was defined as numbers of new products, products improvements since product and operation improvement are important indicator of SMEs' performance as a whole. Based on this conceptual framework, hypotheses for this research were proposed as follows;

H_a: Employees' participation, team-based practices, compensation, training and development, recruitment and selection and job security are significant predictors of organizational innovation.

III. METHODOLOGY

The research design for this study was a cross sectional survey. The selection of the research design was based on the nature of the research objectives that involved hypothesis testing and the need to observe the phenomenon in its natural setting.

Descriptive and basic statistical analyses of the data were performed using SPSS 16 computer software. Multiple Linear Regression (MLR) were used to test the hypotheses. Prior to using the MLR, testing of assumptions which include establishing linear relationship between independent and dependent variables, homoscedasticity and independence of error terms were conducted.

SMEs categorized under Food and Beverages Sector located in the Batu Pahat district, were identified with the assistance from the District Agricultural Office. Johor was selected as the sample for this study as the majority of the Food and Beverage sector are concentrated in this state. Simple random sampling was employed since the sampling frame was accessible. The size of sample taken was based on Krejcie and Morgan's [62] sampling size table. A sample size of 44 was derived to get 95% confidence level and 5% error from a population of 50 SMEs. The questionnaires were answered either by the SMEs' owner-managers or person in charged of the administration. The return rate of was 100%. The questionnaires consisted of two major sections. Section A consisted twenty questions on HRMPs while Section B contained six questions on the organizational innovation. The questionnaire used 5-point Likert scale (from 1 to 5) with 1 indicating that respondents strongly disagree with the statement and 5 indicating that they strongly agree with the statement.

Descriptive statistics were used to describe the participating SMEs in terms of their number of workers. About 4.5 percent of the participating SMEs had employees less than 5, 31.8 percent had employees 5 to 50, 11.4 percent had 51 to 150 employees and 52.3 percent had more than 150 employees.

IV. RESULTS

The reliability coefficients for all instruments are above 0.7. HRMPs' Cronbach's Alpha of 0.724, and Innovation's Alpha of 0.877. The actual reliability estimates (Cronbach's Alpha) were higher than 0.7, indicating acceptable internal consistency of instruments used in this study.

TABLE 1: DESCRIPTIVE STATISTICS

Variables	Mean	SD.
Employees' Participation	4.053	0.635
Team-based Practices	3.992	0.545
Compensation	4.127	0.467
Training and Development	4.068	0.340
Recruitment and Selection	3.977	0.731
Job Security	4.171	0.560
Innovation	4.186	0.503

Table 1 shows that innovation among participating SMEs in terms of new products, products improvement and operation improvements was rather high (M=4.186, SD=0.503). Among the human resource management practices, compensation had the highest mean (M=4.127, SD=0.467) followed by job security, training and development, employees' participation, team-based practices and recruitment and development.

TABLE 2: MULTIPLE REGRESSION OF HRMPs ON INNOVATION

R-Square = 0.573 F = 6.911 , p < 0.001		
Predictors	Beta	p
Employees' Participation	0.069	0.558
Team-based Practices	0.095	0.447
Compensation	0.099	0.415
Training and Development	0.009	0.939
Recruitment and Selection	0.325	0.016
Job Security	0.526	0.001

Table 2 presents the MLR results of HRMPs and innovation. The results indicated that 57% of variance in innovation in SMEs was significantly been explained by HRMPs. However, among the HRMPs, only recruitment and selection and job security are significant predictors of innovation (p<0.01). Thus Ha was partially supported.

TABLE 3: MULTIPLE REGRESSION OF RECRUITMENT AND JOB SECURITY ON INNOVATION

R-Square = 0.553 F = 25.411 , p < 0.001		
Predictors	Beta	p
Recruitment and Selection	0.286	0.016
Job Security	0.580	0.001

Table 3 shows that when only recruitment and selection and job security were regressed against innovation, the explained variance dropped to 55%.

V. DISCUSSION AND CONCLUSIONS

The major finding of this study lends support on the influence of HRMPs on SMEs' innovation. However, it should be noted that not all human resource management practices are significant predictors of innovation. Only recruitment and selection and job security significantly predict organizational innovation. This might be attributed to the market-type HRM system most likely adopted by these SMEs. According to Miles and Snow [64], firms employing market-type HRM are characterized by the search for new products and market. In order to provide necessary abilities for a new market or product from the inside the company quickly, the SMEs search outside the organizations for these abilities whenever the need arises. In fact, literatures are quite consistent about the importance of using external sources of recruitment to achieve innovation strategy. Market-type HRM also explains why training and development is not perceived as having important effect on innovation. Since market-type HRM prefers to take necessary resources from external market, they also tend to provide limited training and development activities. This strategy is critical among SMEs who have limited resources and access to financing.

Job security is another predictor of innovation among SMEs. Prior to innovate, creative minds is one of the most important prerequisites. Creativity is usually stimulated by emotional stability such as the assurance of job stability across certain period of times. Furthermore, job security is an important antecedent of organizational involvement. The more involved the employees, the more likely they would become innovative [65-66].

Surprisingly, compensation does not influence innovation. Although there are several studies suggested the use of incentives and adoption of organic compensation system (for example Gomez-mijia et al. [67]) to stimulate innovation SMEs, the way forward is unclear. It is believed that SMEs' financial constraint is the major hindrance for SMEs to offer attractive compensation packages. Storey [68] reasoned that the high operating cost of SMEs causes the SMEs' owner managers to postpone the compensation schemes in order to maximize capital and maintain cash flow. Furthermore, since SMEs in food and beverages industry usually have low start-up costs; it limits their abilities to offer attractive compensation system as a viable strategy.

Similarly, employees' participation and team-based practices are not significant predictors possibly due to the informal interaction or communication system established in the SMEs. The informal communication system does not flow lines of authority and built around the social relationships of members of the organization. Thus, the comradeship takes precedence over the effects employees' participation and team-based practices. Thus, these practices were not perceived as having added values to organizational innovation.

VI. LIMITATIONS AND IMPLICATIONS

Although this study to certain extent has provided empirical support on the influence of human resource management practices on organizational innovation, it does have some limitations. The first major limitation of this study is the small sample size derived from a small SMEs concentration in Batu Pahat, Johor. Second limitation of this study is the ambiguity surrounding the term innovation. Questions measuring innovation were developed using 5-points Likert Scale, which heavily depended on SME's owner-managers perception of innovation. Such subjective measure of innovation (rather than number of products) might be misleading. Furthermore, studies on HRMPs and innovation have not been consistent in terms of what constitute human resource management practices. This has led to limited understanding of critical human resource management practices.

Despite these limitations, this study highlighted the importance of human resource practices among SMEs to promote innovation. It also adds to the limited number of studies on HRMPs and innovation in Malaysia. Although SMEs have limited resources, they still need to wisely utilize their human capital to gain the competitive advantage over the large firms. The Malaysian government should facilitate the SMEs in terms of providing the know-how in managing their human resources and also innovation activities.

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