Human Resource Management Practices as Predictors of Organisational Innovations: An Analysis of Manufacturing SMEs in Japan

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Abstract
Small and Medium Enterprises (SMEs) are prevalent across the Japanese economy, accounting for the lion’s share of its GDP. Their importance is indicated not only by the large share of GDP, but also by the number of companies, total number of employees, and value of shipments etc. However, since last two decades, this sector has no longer been a thriving source of growth. The business failure rate remains high while firm entry rate has slipped downward. One of the reasons for high rate of business failures in SMEs is the lack of attention they are paying to the Human Resource Management (HRM) practices of their businesses when compared with their large counter parts. Therefore, the broad aim of this study is to investigate HRM practices in SMEs in Japan. Specifically, this study aims to investigate whether HRM practices are significant predictors of innovations in SMEs, as measured by the number of new products, process and administrative developments which are crucial to face global competition. Further, this study attempts to examine the relationship between HRM practices and organizational innovations shedding some light on the link between the two. A structured questionnaire was developed and sent to 436 SMEs in Aichi Prefecture and 144 firms responded to the questionnaire resulting in 32 per cent response rate. Based on the data analysis, it was found that there is a strong positive relationship between HRM practices and organizational innovations in manufacturing SMEs in Japan.

1. Introduction
SMEs are prevalent across the Japanese economy, accounting for the lion’s share of GDP. Their importance is indicated not only by the large share of GDP, but also by the number of companies, total number of employees, and value of shipments etc. There are 4.69 million SMEs in Japan, constituting 99.7 per cent of all enterprises, accounting for 70 per cent of all employment (Small and Medium Enterprise Agency, 2013). Although their relative importance as a share of the number of enterprises and the number of employees is declining compared with the situation at the beginning of the 2000s, there is no change in

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the fact that the SME sector still accounts for the vast majority of enterprises and employees in Japan. The majority of products of large enterprises are still made up of parts produced by SME subcontractors, and therefore, the availability and reliability of Japanese products are supported by the underlying strength of SMEs. SMEs have been recognized as a key source of innovation and playing a major role in revitalizing its fragile economy (Sato, 2013).

However, over the last two decades, SMEs have no longer been a thriving source of growth. The profitability and investment of SMEs have declined significantly and new business registration of SMEs has been in the decline. The number of manufacturing establishments employing 04 to 299 people steadily declined from 434,754 in 1985 to 254,675 in 2007. The sharp decline in the number of establishments was caused not only by failure of enterprises but also by the lower number of enterprises entering the economy. As shown in Figure 1, the entry rate has experienced a prolonged decline since the 1970s while exit rate has trended upward in recent years, based on the number of enterprises. As a consequence, the firm exit rate has considerably exceeded the firm entry rate despite the slight upward swing in the entry rate in recent years (Ministry of Economy, Trade and Industry [METI], 2006).

Nevertheless, successful business management of SMEs largely depends on the quality of human resource that supports companies (Japan Small and Medium Enterprise Corporation [JASMEC], 2001). Proper management of a company’s human resources is the key to business survival in today’s competitive world. Securing and training of high quality personnel are, therefore, key factors for the growth of SMEs, which often have limited opportunities to utilize managerial resources. There is growing evidence to suggest that HR practices are important predictors of organisational performance. The organizational effectiveness of the firm (Huselid, 1995; Terpstra and Rozell, 1993) and its ability to create a sustainable competitive advantage (Prahalad, 1983; Pfeffer, 1994) hinge upon whether HRM practices are properly thought out and successfully implemented. However, it is argued that, in general, SMEs are paying less attention to HRM practices when compared with their counterparts of large enterprises (Kok, 2003; Wong et al, 1997; Gamage, 2007). Therefore, the prime objective of this study is to examine the applications of HRM practices in SMEs in Japan. Specifically, this study aims to investigate whether HRM practices are significant predictors of organisational innovations in SMEs, as measured by the number of new products, process and administrative developments which are very important to face global competition. Further, this study attempts to examine the relationship between HRM practices and organisational innovations shedding some light on the link between the two.
2. Literature Review

An overview of research which has been conducted so far on HRM in SMEs is presented in this section. Subsequently, it briefly presents main conclusions of studies on the relationship between HRM practices and organisational innovations within SME business context.

2.1 HRM in SMEs

Given the importance of SMEs employees to the national economy, it is disheartening to note that scant attention is given in SMEs research to the study of human resource management practices. No matter where you look, in surveys (e.g., Hornsby and Kuratko, 1990), in reviews of literature (e.g., Good, 1998), and in empirical studies (Heneman and Berkley, 1999), scholars are lamenting over the dearth of information about human resource management practices in SMEs. Proper management of a company’s human resources is the key to business survival in today’s world. The organizational effectiveness of the firm (Huselid, 1995; Terpstra and Rozell, 1993) and its ability to create a sustainable competitive advantage (Prahalad, 1983; Pfeffer, 1994) can hinge upon whether HRM practices are properly thought out and successfully implemented. The human potentials in a company are generally much more difficult for competitors to duplicate than the plant, equipment or even products that a company produces (Flanagan and Despanade, 1996). Consequently, the nature and well being of a company’s employees can become its main strength in carving out a profitable existence in the industry. HRM practices can be particularly important for small firms (Marlow and Patton, 1993) since they tend to be so dependent on human capital. Research indicates that inadequate and insufficient management of employees in small firms has resulted in low
productivity and high turnover rates (Mathis and Jackson, 1991) and is one of the leading causes of small business failures (McEvoy, 1984).

The overall goal of human resource management is to ensure that the company will be able to achieve success through people. HRM aims to increase the effectiveness and organizational skills, which means the ability of an organization to achieve its goals using the available resources in the best way possible. There are growing numbers of research that link HRM practices to organizational performances. Some authors in their studies have found that HRM systems can be the source of firms' new product developments that allow one to face with severe global competition. The organizations’ ability to innovate is seen as a key factor to ensure their success within an ever increasing globally competitive business environment (Cohen and Levinthal, 1990; Brown and Eisenhardt, 1998; McGrath, 2001; Tsai, 2001). While researchers have accumulated a lot of knowledge about the relationship between HR activities and organisational performance measured in financial terms (Dyer and Reeves, 1995; Huselid, 1995; Macduffie, 1995), the knowledge about the extent to which HRM promotes organisational innovation especially in SMEs context is still relatively scarce.

2.2 HRM Practices and Organizational Innovations

Innovation is the process of translating an idea or invention into a good or service that creates value for which customers will pay. To be called an innovation, an idea must be replicable at an economical cost and must satisfy a specific need. Innovation involves deliberate application of information, imagination and initiative in deriving greater or different values from resources, and includes all processes by which new ideas are generated and converted into useful products. In business, innovation often results when ideas are applied by the company in order to further satisfy the needs and expectations of the customers.

Organizational innovation has been widely defined as the creation of new ideas and new behaviour for the organization (Damanpour and Gopalakrishnan, 2001). Organizational innovation can be divided into three main dimensions; product innovation, process innovation and administrative innovation (Chuang, 2005; Tan and Nasurddin, 2010). Product innovation is defined as the development and commercialization of a new product to create value and meet the needs of the external user or the needs of the market (Damanpour and Gopalakrishnan, 2001). Process innovation is viewed as a creation of a new process or improvement to an existing process (Leonard and Waldman, 2007). On the other hand, administrative innovation is viewed as performance derived from the changes to organizational structure and administrative process, reward and information system, and it encompasses basic work activities within the organization which is directly related to management (Chew, 2000; Damanpour and Evan, 1984). Given the importance of product innovation, process innovation and administrative innovation in
enhancing performance in a manufacturing firm, this study operationalizes organizational innovations as to be multidimensional comprising of all these three types of organizational innovations.

The literature on the relation between HRM practices and organisational innovation is vast and not easily identifiable, as relevant papers are not necessarily published in HRM journals and may primarily focus on other issues. Until 2000s, the innovation literature was characterized by relatively scant attention being paid to HRM practices and how they influence innovation performance (Laursen and Foss, 2003). According to Wang (2005), innovative firms treat HRM practices as the organization’s strategy to encourage team responsibilities, enhance organizational culture, and build up customer relationships through participation and empowerment. In turn, it will help create and market new products and services (Gupta and Singhal, 1993). In order for firms to develop and introduce new products, new processes and new administrative practices, they require innovative and creative employees, who are flexible, risk taking, and tolerant of uncertainty and ambiguity (Chen and Huang, 2009). These employees are highly recognized in manufacturing industries as they contribute to the firm on the basis of market responsiveness. Therefore, it is important for a firm to implement supportive HRM practices that can motivate and stimulate employees to be innovative and creative.

The contention that certain HRM practices impact different aspects of innovation has been conceptualized by Leede and Looise (2005) and Jorgensen et al (2008). Their findings contribute substantially to the understanding of the relationship between HRM and innovation, but they are also limited by having been conducted exclusively in manufacturing firms in large organisations. According to contingency theory models developed by Miles and Snow (1984), characteristics of the organization (e.g. size, external market, industry) are critical factors in determining the appropriate HRM practices for an innovation strategy. Thus, this research aimed at explaining and describing the relationship between HRM practices and organisational innovations in manufacturing SMEs is clearly warranted.

3. Operationalisation of Variables
3.1 Human Resource Management Practices

HRM is the function within an organization that focuses on recruitment of, management of, and providing direction for the people who work in the organization. It is the effective and efficient utilization of human resources to achieve organizational objectives (Opatha, 2010). HRM is the human side of the organizational management. It is mostly responsible for the attraction, selection, training, assessment, and rewarding of employees for getting maximum contribution toward the organizational success. Stone (2005) defined human resource management as productive use of people in achieving the organization’s strategic business objectives and the satisfaction of individual employees. This definition clearly indicates that the organizations’ objectives
are dependent on their work force productivity. The effective use of HRM practices is able to link these practices with organization’s goals and objectives. In order to accurately measure ‘human resource practices’, a number of HR functions may need to be evaluated. The importance of these practices may differ from firm to firm. One of the most comprehensive and widely used measures for human resource practice was presented by Dessler (2008) and Fisher et al (2006). In their studies, human resource management practices are characterized as multidimensional, and it has four major facets namely, staffing, training and development, employee performance evaluation, and compensation of employees.

3.1.1 Staffing

Staffing is the process of acquiring, deploying, and retaining a workforce of sufficient quantity and quality to create positive impacts on the organization’s effectiveness. It involves recruitment, selection, hiring and induction of potential employees. Recruitment is the process of finding and attracting suitably qualified people to apply for job vacancies in the organization. It is a set of activities an organization uses to attract job candidates who have needed abilities and attitudes. Selection is the process of making the choice of the most appropriate person from the pool of applicants recruited to fill the relevant job vacancy. Hiring is the process of appointing selected candidates to the posts which are vacant. Induction is the HRM function that systematically and formally introduces the new employee to the organization, to the job, to the work group to which new employee will belong and the work environment where the new comer will work. Various tools and techniques are used by firms for the improvement of staffing process to avoid the loss in terms of time, money and potential employees.

3.1.2 Training and Development

Training and development is another dimension of human resource practices where firms invest on development of their employees’ knowledge, skills ability and other required skills to improve the productivity of employees. Training and development is the HRM function that formally and systematically provides new learning to increase employees’ capabilities. The primary purpose of training and development is to increase organizational performance by increasing employee performance. Training and development can transform human resource to human capital where skilled employee would better perform in the success of organization as compared with none or less - trained employees.
3.1.3 Performance Evaluation

Performance evaluation is defined as the systematic process of identifying, measuring, influencing, and developing job performance of the employees in the organization in relation to the set of norms and standards for a particular period of time in order to achieve various purposes (Opatha, 2010). This aspect of human resource practices generally involves the activities of various evaluation designs, both formal and informal, and different evaluation periodicities (Shub and Stonebraker, 2009). It is a means of getting better results by understanding and managing performance within an agreed framework of planned goals, standards and competency requirements. It functions as a continuous and evolutionary process, in which performance improves over time. Moreover, it provides the basis for regular and frequent dialogues between managers and individuals about performance and development needs (Armstrong, 2006).

3.1.4 Compensation Management

Compensation is the total amount of the monetary and non-monetary pay provided to an employee by an employer in return for work performed as required. It is one of the most extrinsic practices of human resource function in an organizational setting. Compensation may include payments such as salary and wages, bonuses, profit sharing, overtime pay, recognition rewards, and sales commissions etc. Compensation can also include non-monetary perks such as a company-paid car, stock options in certain instances, company-paid housing, and other non-monetary items. This dimension determines the level of job of an employee on the basis of their perceived knowledge and experience. Moreover, the matching of their job knowledge with the pay or compensation provided to them must demonstrate the market level competitive packages. Good compensation plan would therefore, inevitably influence on employees’ performance. However, the extent to which an employee who is getting the good compensation package will perform well would also depend on his or her overall assessment of various factors like the compensation package in other organizations in relation to the work load and the possibility of getting better compensation packages (Purani and Sahadev, 2008).

3.2 Operational Performance (OP)

Operational performances are those related to the goals of an organizational operation, including productivity, product quality, customer satisfaction and organizational innovations. However, in this study, organizational innovation is considered as the operational performance. Drawing upon the conclusions made by previous scholars (i.e., Gupta and Singhal, 1993; Laursen and Foss 2003; Shipton et al, 2005), it is expected that HRM practices to be positively related to organizational innovation of manufacturing SMEs in Japan.
4. Conceptual Framework

For the purpose of this study, four (4) HRM practices namely; employee staffing, training & development, performance management, and compensation management were selected. Then, the relationship between HRM practices and organizational innovation was examined exploring the mediating relationship of HR outcomes. Based on the above theoretical underpinning, a conceptual frame for the study was constructed as in Figure 2. According to the model in Figure 2, HRM practices are linking with organizational innovations and this relation is mediated by HR outcomes.

5. Methodology

A structured questionnaire was developed as the main data collection instrument. Four (04) HRM practices were selected for the study. There were; employee staffing, training and development, performance management, and compensation management. These four HRM practices were the most widely discussed HRM practices in the literature. In order to examine the HRM intensification, forty (40) items (employee staffing, 10; training and development, 12; and performance management, 10, and Compensation management, 8) were included in the questionnaire. Nine (9) HR outcomes; knowledge quality (KQ), occupational health and safety (OHS), job satisfaction (JS), employee commitment (EC), employee attitudes (EA) employee motivation (EM), employee loyalty (EL), employee involvement (EI), and workplace cooperation (WC) were considered for the study. Three (3) items for each HR outcome variables were included in the questionnaire. Four items in the scale were used to measure organizational innovations. The questionnaire was first developed in English and then translated into Japanese to make respondents better understand it.

Four hundred thirty six (436) questionnaires were distributed to a randomly selected sample of manufacturing SMEs in Nagoya in Aichi Prefecture. An electronic data file maintained by the Nagoya Chamber of Commerce was used to draw the sample. One hundred five (105), equivalents to thirty two per cent (32 per cent), responded to the survey. Data was analyzed by using SPSS version 16. Descriptive statistics were used to understand the characteristics of firms and Pearson product movement correlation coefficient was used to examine the relationships among variables.
In order to measure the reliability of instruments, Cronbach’s alpha coefficient is widely used. According to Sekaran (2005), if the alpha value is greater than 0.7, the instrument is said to be acceptable. The internal consistency reliability coefficients (Cronbach’s alpha) for the scales used in this study are well above the level of 0.7. Table 1 shows coefficients for all variables. According to table 1, each variable has got more than 0.8 alpha values which are well above the standards and thus are acceptable for the analysis purpose. Validation procedures involved initial consultations with subject matter experts about the questionnaire prepared. The experts also judged the face and content validity of the questionnaire and decided as adequate. Hence, the researcher was satisfied with the reliability and validity of the scale.

### Table 1: Reliability Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach Alpha</th>
</tr>
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<tbody>
<tr>
<td>Employee Staffing (10)</td>
<td>0.916</td>
</tr>
<tr>
<td>Training &amp; Development (12)</td>
<td>0.941</td>
</tr>
<tr>
<td>Performance Evaluation (10)</td>
<td>0.939</td>
</tr>
<tr>
<td>Compensation Management (8)</td>
<td>0.871</td>
</tr>
<tr>
<td>HRM Outcomes (18)</td>
<td>0.921</td>
</tr>
<tr>
<td>Product Innovations (4)</td>
<td>0.910</td>
</tr>
</tbody>
</table>

*Source: Survey Data, 2013*
6. Results of the Survey

Table 2 shows Pearson product movement correlation coefficients among HRM practices, HR outcomes and organizational innovations. According to Table 2, HRM practices are highly and positively correlated with organizational innovations.

First, employee staffing shows positive correlation with labour productivity. This relationship is strong and statistically significant ($r = .404$, $p<0.01$). Second, the correlation of training and development with organizational innovation is also positive and very high ($r=.451$, $p< 0.01$). The link between training and development and organizational innovation is strong and it is statistically significant. Third, performance evaluation function also establishes strong correlation with organizational innovations ($r= .587$, $p< 0.01$). This relation is also positive and statistically significant. Finally, the relationship between compensation management and organizational innovation also seems positive ($r=.336$, $p< 0.01$).

Although the magnitude of coefficient is somewhat lower than when compared with three other coefficients, it is also positive and statistically significant. Among all for variables, performance evaluation establishes very high correlation with organisational innovations. In order to examine the mediating relationship between HRM practices and organizational innovations, HR outcomes were studied. Based on the nine HR outcomes, a cumulative index that represents the aggregation of all nine HR outcomes was developed. The links between HRM practices and HR outcome index were examined. Not surprisingly with earlier studies, this study too establishes very strong correlations between all four HRM practices and HR outcomes, (Employee staffing, $r=.458$, $p< 0.01$; Training and development, $r=.462$, $p< 0.01$; performance evaluation, $r = .483$, $p< 0.01$; and compensation management, $r= .406$, $p< 0.01$). On the other hand, the correlations of HR outcomes and organizational innovations also cannot be undermined. HR outcome index shows very high and positive correlation with labor productivity which is $r= .503$ ($p< 0.01$). This link is also statistically significant highlighting the fact that the link has established not by chance but is worth further study.
7. Discussion of the Findings

7.1 HRM Practices and Organisational Innovations

In this study the four areas of HRM practices highlighted their role and relationship with organizational innovation. Similar to the findings of other studies in large organizations, this study also establishes very strong and statistically significant positive correlation of HRM practices with organizational innovations in manufacturing SMEs in Japan. According to the findings, all four HRM practices were highly and positively correlated with organizational innovations. It implies the idea that four HRM practices; employee staffing, training and development, performance management, and compensation management are having positive correlations with organizational innovations. This conveys the fact that effective HRM practices lead to organizational innovations even in SMEs. In other words, an increase in the usage of above HRM practices gives rise to organizational innovations. As all these relations are positive, with the increase of the usage of the said HRM practices, organizational innovations will increase. Therefore, the conclusion that can be drawn from this finding is that, SME owners/managers who are concerned about increasing organizational innovations and thereby to have new product developments should be prepared to apply effective and efficient utilizations of its human resource through HRM practices which best fit the organisation.
7.2 HRM Practices and HR Outcomes

Analysis of the data clearly establishes very high positive correlations of HR outcomes with organizational innovations. Therefore, it is intuitive to assume that HR outcomes are playing a mediating relationship between HRM practices and organizational innovations. With this correlation, it is reasonable to assume that an increase of the usage of above HRM practices gives rise to higher organizational innovations through HR outcomes. Drawing from these findings, it can be concluded again that those owners/managers in SMEs who are concerned about increasing their organizational innovations through HR outcomes should focus on effective use of HRM practices prescribed above. However, in order to examine the magnitude of the exact impact of mediating effect of HR outcomes, further analysis with sophisticated statistical techniques is needed.

8. Implications, Limitations, and Directions for Future Research

The results of this study offer several key theoretical and practical implications for SMEs owners and managers interested in improving business performance of their SMEs. Effective HRM practices lead to positive HR outcomes. The effective use of HR practices; employee staffing, training and development, performance management, and compensation management in SMEs was shown to be related to HR outcome index which represented knowledge quality, occupational health and safety, job satisfaction, employee commitment, employee attitudes employee motivation, employee loyalty, employee involvement and workplace cooperation. These positive HR outcomes in turn are translated into positive operational performance: increase in organizational innovations. This highlights the fact that employees do matter even for SMEs and are shown to be linked with organizational innovations in their businesses. Therefore, as the study highlights, when evaluating many options that are available to SMEs, it is very important to keep in mind not to discount the importance of human resource management and the related practices. Effective human resource management practices lead directly to positive outcomes on employees of the firm, which in turn lead to positive organisational performance.

This study was subject to certain limitations encountered in the research process. The study was based on the data collected only from 136 manufacturing SMEs in Aichi Prefecture Japan. Therefore, generalisability could have been increased if a sufficient number of manufacturing firms representing all the prefectures in Japan had been taken. Further, the study focused only on the relationship, not on the effect or impact, between HRM practices and organizational innovation. However, it is better if this study could focus on the effect of HRM practices on organizational innovations also. Further analysis with sophisticated statistical testing is very much sought to examine the impact of HRM practices on organizational innovations and mediating role of HR outcomes between these two. Therefore, future research
with relatively larger samples expanding to other sectors in SMEs will be very much useful in this direction.

References


