

Innovation in Small and Medium Enterprises in Vietnam: The Role of Human Resource Management

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Abstract: This study aims to analyze the impact of human resource management practices on innovation of Small and Medium Enterprises (SMEs) in Vietnam in the dynamic and competitive environment. The study uses the data collected by Central Institute for Economic Management (CIEM) in 2011, 2013 and 2015. By using the Tobit model, the results show that Human Resource Management (HRM) practices positively influence innovation of SMEs, and the most significant relation to innovation is training. Based on the findings, small and medium firms in Vietnam need to manage human resource effectively by some activities such as training, union, wage and job rotation in order to promote innovation output, including new products, new process and modified product.

Keywords: HRM practices, innovation, SMEs in Vietnam

I. Introduction

Nowadays, organizations are facing a competitive and continuously changing environment. In this context, the performance and even the survival of firms depend on their ability to achieve a competitive position, on their flexibility, adaptability and responsiveness than ever. Consequently, there is an increasing interest in innovation as a strategy that allows the firm to improve its flexibility, competitive position and performance (Dalota, Marius-Dan, 2013).

Human factors in general and human resource management (HRM) in particular are considered as key elements of successful innovation in today's world because the human element is involved in the whole innovation process (Dalota, Marius-Dan, 2013). Bamber et al. (2017) said that this is because people, who are at the heart of creativity and innovation of organizations, would develop new ideas and also put them into practice. Similarly, Shipton et al. (2005) suggested that effective human resource management practices of a firm would promote innovation by enabling employees to create, transfer and institutionalize knowledge.

The purpose of this study is to examine the impact of HRM practices on innovation of Small and Medium Enterprises (SMEs) in Vietnam. Because evidence on the HRM practices role in SMEs, especially in innovation, is a research gap from the developing countries because almost existing studies focus on the large-sized organizations in developed countries (Ogunyomi and Bruning, 2016). On top of that, SMEs play considerable roles in the national economic (Hung, 2007; Trung et al., 2009). Furthermore, innovation and HRM play an increasingly important role in sustaining competitiveness for enterprises in the dynamic and changing environment (Dalota and Marius-Dan, 2013).

The paper is divided into 6 parts as follow. We first provide a brief literature review of HRM, innovation and how HRM practices have effect on innovation. Second part describes data source, the sample and measurement of dependent, independent and control variables. Section 3 reports the results while section 4 makes some discussions.

II. Literature review and hypothesis

2.1. HRM practices

In 1995, Jackson and Schuler suggested that HRM practices can be almost everything associated with management of employment relations in organization. According to Delery and Doty (1996), HRM practices is defined as a set of internal policies and practices designed and implemented to ensure that human resources contribute to the goals of firms. Specifically, HRM practices consist of the hiring of employees, job and work design, training, and compensation policies that have incentives and motivation in order for employees to meet organizational goals (Jiang et al., 2012).

Chowhan (2016) also looked at the relationship between HRM practices, including skill-enhancing, motivation-enhancing practices, and organizational outcomes, such as innovation.

2.2. Innovation

At firm level, innovation is a widely discussed topic in the literature, especially when there is increasing concern of the world economy toward the knowledge economy (Rodil et al., 2015). The first definition was coined by Schumpeter in the late 1920s. After that, innovation was defined in many ways. According to Hansen and Wakonen (1997), innovation is reflected in novel outputs: a new good or a new quality of a good; a new method of production; a new market; a new source of supply; or a new organizational structure, which can be summarized as “doing things differently”. In 2015, Fay et al. suggested that innovation is related to new products and services, new methods and process, new technology as well as the changing in administration in organizations. But perhaps the most commonly used definition of innovation and is chosen in this study is that provided by the Organization Economic Cooperation and Development (OECD, 2005, p.46) suggesting that “Innovation is the implementation of a new or significantly improved product (good or service), process, new marketing method, or a new organizational method in business practices, workplace organization, or external relations” (Laforet, 2011, p.46).

2.3. The relationship between HRM practices and innovation

In the process of innovation and development, organizations need creative and innovative people who are flexible as well as willing to take risks and withstand the change (Chen and Huang, 2007). Therefore, it is important for organizations to apply effective HRM practices to support, promote and encourage creative and innovative employees (Ling and Nasurdin, 2010). A potential worker will inspire the imagination in the organization (Gupta and Singhal, 1993), which helps innovation activities to be conducted more effectively and quickly. In fact, HRM practices of a company is one of the factors which decide innovative input components, the emergence of innovation and the innovative performance (Arulrajah, 2014). According to Mumford (2000), this phenomenon occurs because an organization's innovation capacity depends on the intelligence, imagination and employee creativity of the input of innovation. Therefore, it is important to realize that companies well performing should implement human resource management practices, thereby building a solid foundation for innovation.

Specifically, factors in HRM practices affect the efficiency of enterprise innovation. According to Tan and Nasurdin (2011), performance evaluations increase employee satisfaction because they have the opportunity to discuss and evaluate their own performance as well as colleague performance. Thereby it makes them strengthen the innovation activities and improve their qualifications. Training helps employees master their knowledge and their skills that contribute to product innovation, processes innovation and management practices in daily operations (Schuler and Jackson, 1987). Therefore, training develop the knowledge, skills and abilities of employees to perform effectively in their work will lead to higher organizational innovation. Research of Tan and Nasurdin (2011) showed that the reward system encourages workers to become motivated and enhance their participation in contributing innovative ideas. Therefore, it can be seen that between HRM practices and innovation have an intimate relationship.

We hypothesize the following:

Hypothesis: The HRM practices is positively related to innovation

III. Method

3.1. Measures

Prior researchers have measured innovation in different ways. Lee and Choi (2003) measured innovation by 2 items, first, the number of new or improved products launched to the market is superior to the average in your industry second, the number of new or improved processes superior to the average in your industry. Kostopoulos et al. (2011) used a dummy variable that equals 1 if the firm has introduced a product or process innovation over the period 1998–2000 and 0 otherwise.

Arcimoles (1997) used employment, wages and training to measure HRM practices while HRM practices are measured by employment security and training expenses (Diaz-Fernandez et al.,2015).

In our study, variables are measured as table 1.

Table 1. Variable measurements

Variable	Measurement	
<i>Dependent variable:</i> Innovation	Innovation is a dummy variable which equals 1 if firm has one of innovative activities including: introduce new product, improve existing product, apply new manufacturing process, equals 0 if the company has none of those.	
<i>Independent variables</i>	Wage	Mean of wage of production workers (1000 VND)
	Union	Whether the firm has company union (1= Yes, 0= No)
	Job rotation	Whether operators rotate across jobs or tasks on the line (1= Yes, 0= No)
	Training	Whether the company provided regular training activities for at least 50% of new recruited workers (1=Yes, 0= No)
<i>Control variables</i>	Export	Whether the firm exports their goods (1=Yes, 0= No)
	Firmsize	Firmsize include 3 levels: micro (the number of labors <10), small (10 =<the number of labors <50), medium (the number of labors >=50). Firmsize (firmsize_small and firmsize_medium) is divided into 2 dummy variables, Firmsize_micro is comparative variable

3.2. Data

The data source of this study is from SMEs surveys. SMEs surveys are jointly carried out for every two years by University of Copenhagen, General Statistics Office (GSO) of Vietnam, Vietnamese Institute of Labor Science and Social Affairs (ILSSA), and Central Institute for Economic Management (CIEM) of Vietnamese Ministry of Investment and Planning. The sample includes about 2600 firms located in 10 Vietnamese provinces including Ha Noi, Phu Tho, Ha Tay, Hai Phong, Nghe An, Quang Nam, Khanh Hoa, Lam Dong, Ho Chi Minh City and Long An. For example, the 2011 survey consists of 2552 firms while the figures for 2013 and 2015 surveys are 2575 and 2649 firms, respectively.

Table 2. Descriptive statistics

Variable	Observations	Mean	Standard deviation
Innovation	4,812	.3534913	.4781032
Wage	4,812	2468.464	1852.178
Union	4,812	.1016209	.3021806
Job rotation	4,812	.0434331	.2038511
Training	4,812	.0931006	.2906035
Export	4,812	.0644223	.2455292
Firmsize_small	4,812	.247714	.4317297
Firmsize_medium	4,812	.0733583	.2607508

Resource: Calculation of authors

From the summary statistic of the sample represented in table 2, for training activities, only about 9.31% of firms from the whole sample provided the training for their new recruited employees. In addition, the figures for union and job rotation are 10.16% and 4.34% respectively. Regarding to export, there is just roughly 6.44% firms exported their goods to other countries. Finally, the mean of wage for production workers is approximately 2.468 million VND.

3.3. Data processing

Although, the data is generally structured as a cross-sectional structure for each year, a subgroup of SME firms is repeatedly interviewed from year to year. This advantage enables us to construct a panel sample of manufacturing firms from 2011 to 2015 for this study following these steps

- Firstly, the data was collected from three different SMEs surveys taken place in 2011, 2013 and 2015
- Secondly, we calculated and extracted necessary indicators for the study base on the given data sources
- Next, we eliminate observations which have insufficient information and negative value added (VA) (according to Clarke et al. (2011) proved that negative value added is to deviate model estimation results about effect of intellectual capital to innovation).
- Finally, due to the studied period from 2011 to 2015, we select companies have been working continuously during the given time

Therefore, the final data includes 1604 firms from each survey, which means there are 4812 researched organizations in total.

The regression equation is as follow:

$$\mathbf{Innovation}_{i,t} = \alpha_0 + \alpha_1\mathbf{HRM}_{i,t} + \alpha_2\mathbf{CONTROL}_{i,t} + \varepsilon_i$$

While **Innovation**_{i,t} measures the output of innovation activities for a firm i and a year t, the **HRM**_{i,t} denotes a HRM practices that are employed by a firm i, in a year t. HRM practices include a wide range of HRM practices that are carried out by a firm over the previous years. Additionally, the **CONTROL**_{i,t} is a vector of control variables for firm characteristics from the main specification. In particular, control variables include (1) whether a firm exports their product (2) the size of a firm.

IV. Results

To analyze the impact of HRM practices on innovation, to begin with, we run a correlation table (Table 3) to appraise the strength of the relations. In addition, to get further quantitative analysis, we use Tobit model as dependent variable is dummy; the results is indicated at table 4.

Table 3. Correlations between study variables

	Innovation	Wage	Union	Jobs rotation	Training	Export	Firmsize_small	Firmsize_medium
Innovation	1.0000							
Wage	0.0820	1.0000						
Union	0.1225	0.1741	1.0000					
Job rotation	0.0728	0.0776	0.2084	1.0000				
Training	0.1087	0.1824	0.2331	0.1598	1.0000			
Export	0.1141	0.1252	0.3628	0.1227	0.1461	1.0000		
Firmsize_small	0.0661	0.2445	0.1384	0.0903	0.1392	0.1102	1.0000	
Firmsize_medium	0.1187	0.1331	0.5570	0.2177	0.2116	0.3839	-0.1615	1.0000

Resource: Calculation of authors

Table 3 indicates the correlations between all variables in the study. It is clear that all of the correlations between innovation and HRM activities (include wage, union, job rotation, training) are positive. Which means, for example, the more wage a firm pays for their production labors, the more innovation activities within organization are implemented. It is noticeable that the correlation between union and innovation is the strongest one (the figure is 0.1225), while the weakest one is of job rotation (0.0728). Moreover, we also see the positive correlations between firmsize_small, firmsize_medium, export and innovation, the figures are 0.0661, 0.1187 and 0.1141 respectively.

Table 4. Results of regression analysis between HRM practices and innovation

Independent variable	Innovation	
	Coefficients	P-value
Const	.2850237	0.000
Wage	9.28e-06	0.018
Union	.0562441	0.050
Job rotation	.06702	0.053
Training	.1018068	0.000
Export	.1088764	0.000
Firmsize_small	.0495874	0.005
Firmsize_medium	.1112455	0.001
Observations: 4812		
Prob > chi2 = 0.0074		

Resource: Calculation of authors

Table 4 shows that the $\text{Pro} > \chi^2 = 0.0074 < 0.05$ which means the Tobit regression result is suitable, the model is

$$\text{Innovation}_{i,t} = .2850237 + 9.28e-06 * \text{wage}_{i,t} + .0562441 * \text{union}_{i,t} + .06702 * \text{jobrotation}_{i,t} + .1018068 * \text{training}_{i,t} + .1088764 * \text{export}_{i,t} + .0495874 * \text{firmsize_small}_{i,t} + .1112455 * \text{firmsize_medium}_{i,t}$$

From table 4, we come to some conclusions:

Firstly, when it comes to wage, $\alpha_1 = 9.28e-06 > 0$ which means there is a positive relation between wage and innovation and the figure has statistical meaning at 5%. However, the coefficient is quite low when average wage of production workers increases by 1000 VND, the innovation is to improve around 0.000928%.

Secondly, union has a positive effect to innovation, in particular, when a firm has a company union the possibility it operates innovation activities is approximately 5.6% higher than that without a union. The conclusion has statistical mean at 10% ($p_value = 0.05$).

Thirdly, the same applied for job rotation while a firm rotates tasks for their operators, the likelihood innovation activities implemented in this organization is nearly 6.7% than that does not. In addition, the result has meaning at 10% when $p_value = 0.053$.

Fourthly, it is noticeable that the influence of the training to innovation not only positive but also is the strongest one in comparison with other practices in HRM. In this case, when a company operates training for their new hired employees, the capability it has innovation activities is around 10% higher than that without training activity. The conclusion has statistical mean at 1% because of $p_value = 0.000$.

Finally, control variables also have positive influence to innovation. In terms of export, because of the coefficient $\alpha_5 = .1088764$ means when a manufacturing firm exports their products to other countries, the feasibility it implements innovation is 10.88% higher than without exporting. Regard to firm size, when a small company has chance to occur innovation is 4.9% higher than micro one, the figure for medium is 11.12%. All of the results have statistical mean at 1%.

V. Discussion and Conclusion

In this study, we examine the effects of HRM practices on innovation in SMEs in Vietnam. The statistical results obtained in this study showed that wage, union, job rotation and training have positive effects on innovation, particularly, training has the most significant influence on innovation.

Peter Nientied and Corella Slob-Winterink (2018) concluded in their research that the company's HRM has effect on innovation, but the improvements can be made in cross-departmental teamwork based on team targets instead of individual tasks. In 2011, according to Cheng Ling Tan and Aizzat Mohd Nasurdin's study, HRM practices, including performance appraisal, career management, training, reward system, and recruitment have a positive relationship with organizational innovation (product innovation, process innovation, and administrative innovation). Bhumika Sharma et al. (2017) also pointed out that the role of theoretical and empirical status of HRM practices in development and retention of innovation potential and capacity of SMEs.

Our study provides several important implications. First, it is essential for firms to provide adequate training program for their employees, which enables employees to acquire different types of knowledge from both internal and external training programs. Managers should also establish a trail to enable knowledge to be shared and transferred from the organization to an individual, from an individual to an individual, and from an individual back to the organization. With proper facilitation, the employees will be able to use and apply the knowledge to improve efficiency, and solve problems. Second, organizations should provide suitable compensation, union and job rotation policies.

Innovations play an integral role for the innovation activities as well as performance of SMES in Vietnam. The finding of this study has showed some of the most important innovation factors which are wage of employees, union, job rotation and training, but the most substantial effect on innovation is training. Because of the limitation of data used in this research, the measurement of HRM practices are restricted. In other words, there are other things such as selection and recruit you can find out in the relationship between HRM practices and innovation, and different results may be revealed.

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