Human Resource Management Practices Affecting Employee Retention Using Interpretive Structural Modelling Technique

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Abstract

The study examined the relationships between the factors of human resource management practice relating to employee retention of the manufacturing industry in Thailand. The model was developed utilizing interpretive structural modelling technique. Data were collected with an interview using the Delphi method from the eight experts from academia and industry. The remarkableness of this paper is a new finding of the high significance of clear job description. It has a substantial power on employee retention, job engagement, and organizational citizenship behavior. The findings of the study will be beneficial to practitioners on how to improve and develop human resource management in an organization and effective strategies to improve employee retention.
Keywords: Interpretive Structural Modelling, Human Resource Management Practices, Employee Retention

Introduction

Human resource management (HRM) is a primary mechanism in an organization to achieve its goals (Deadrick and Stone, 2014). Effective HRM system focusing on the impact of the individual performance (Paauwe, 2009) is therefore essential to help an organization overcome these challenges and provide a sustainable competitive advantage (Chinachoti, 2018; Ertemsir and Bal, 2012).

Human resource management practice (HRMP) - a part of the HRM system (Boxall and Macky, 2009) - are a complex relationship and may vary from organization to organization. Generally, these practices include training, performance appraisal, and employee participation (Patel and Conklin, 2012; Tremblay et al., 2010; Wu et al., 2015), which aim to develop employees' skills, knowledge, and capabilities, as well as to enhance the levels of motivation, satisfaction, and engagement (Jiang and Liu, 2015; Way, 2002).

Nowadays, HRM problems in the workplace are the lack of employees' knowledge, skills, abilities, engagement, and attitudes (Chutchawanchanchanakij, 2017). Moreover, there is a little consensus about the HRMP affecting employee retention (Takeuchi, Lepak, Wang, and Takeuchi, 2007). This study employed interpretive structural modelling (ISM) which is a

technique used to understand factors with complicated relations. The model structure can identify the relational hierarchy of the factors (Sushil, 2012).

Therefore, this study was to explore how HRMP influencing employee retention using ISM technique and MICMAC analysis because the combination results of the ISM technique and the MICMAC analysis can provide an obvious of the interactive relationships among specific factors for certain issues.

The objective of this study examined the relationships between the factors of HRMP relating to employee retention of the manufacturing industry in Thailand. The findings would help to improve the HRMP of an organization.

Literature Review

Theoretical background

Social exchange theory (SET) is used to describe many processes and behaviors in organizations. Basically, the pattern of exchange between organizations and employees are an economic exchange. However, social exchanges are based on the interrelationship of individuals such as managers, supervisors, and employees, which lead to obligation, trust, and loyalty of employees (Cropanzano and Mitchell, 2005; Saks, 2006; Snape and Redman, 2010). Employees have a positive attitude toward the organization and better behaviors, which lead to organizational effectiveness (Karatepe and Olugbade, 2016).

The social exchange between an organization and its employees impacts the employees' competence, particularly in the field of HRM. The said effect will be on employees' reception of their existence and sense of belonging. For example, compensation and reward also enhance the sense of belonging, as the employees feel supported by the organization, employees will intention to stay. Employee participation is the employees' involvement in an organization's key activities, then employee feels themselves an important of the organization's success. Then, they will increase organization engagement and have the employee ownership to dedicate to work. It is obvious that this type of exchange brings positive results to an organization. Therefore, organizations are trying to promote their relationship with the employees through these social exchanges (Allen, Shore, and Griffeth, 2003; Hussain and Rehman, 2013; Snape and Redman, 2010).

The SET suggests that motivational processes facilitate positive responses that employees give towards HRMP and job engagement - contributing to improved work performance (Karatepe and Olugbade, 2016). The finding of previous studies that found a positive relationship between HRMP (training, performance appraisal, compensation and reward, participation, and clear job description) and job engagement. (Karatepe, 2013; Mihail and Kloutsiniotis, 2016; Zhong, Wayne, and Liden, 2016).

In addition, employees who have been perceived organizational support (POS) tend to build healthy relationships with their organization. This will encourage employee retention and promote their intention to stay (Perryer, Jordan, Firns, and Travaglione, 2010). This is in line with previous studies that found a positive influence of HRMP on organizational citizenship behavior (OCB) (Gong, Chang, and Cheung, 2010) and employee retention (Combs, Liu, Hall, and Ketchen, 2006) and POS (Hussain and Asif, 2012).

Moreover, Tufail et al. (2017) pointed out that trust is essential for employees working beyond their responsibilities. A similar study on job engagement done by Schaufeli, Taris, and Bakker (2006) and Sulea et al. (2012) revealed that job engagement is positively influential on employee behavior both in-role and extra-role behavior. Employees tend to actively contribute to the work that they have been assigned as they can feel confident to work beyond their assigned scope, thereby enhancing an organization's performance (Chinachoti, 2018). Furthermore, employees that obviously exhibit job engagement are likely

to retention positive relationships with the organization by intention to stay (Takeuchi et al., 2007).

When an employee possesses OCB, it is highly likely that he or she will stay in the organization. This signifies a clear link between OCB and employee retention. This is in accordance with the findings of previous research which indicated that employee retention increases when the degree of OCB increases (Chinomona, 2017; Iftikhar et al., 2016). Employees with OCB also tend to improve their work capabilities and effectively utilize organizational resources Moreover, an increased rate of employee retention signifies the security of an organization as well as the sustainability of its competitiveness (Becton, Carr, Mossholder, and Walker, 2017).

Based on literature review and empirical studies, the current study examined 11 factors affecting employee retention of the manufacturing industry in Thailand. Identification of factors affecting the modeling as follows:

Training (R1) is an activity or process of management aiming to enhance knowledge, skills, and abilities of employees leading to improve the performance (Chow, 2005; Zacharatos, Barling, and Iverson, 2005; Zhang, Di Fan, and Zhu, 2014).

Performance appraisal (R2) is an activity or process of evaluating the performance of employees at the individual or group level (Albrecht et al., 2015). The objective is to provide feedback to employees for them to perform more effectively and efficiently. Performance appraisal helps executives to recognize the capabilities of employees and helps the employee understand their abilities (Erdogan, 2003; Lee, Lee, and Wu, 2010).

Compensation and reward (R3) are the expenses that the organization yields to employees for their work or the values that they contribute to their organization. The compensation and reward can be of two types - financial and non-financial (Ismail, 2012; Zhang et al., 2014).

Employee participation (R4) is a process designed to involve employees in decision-making processes so that they can govern their operations to meet an organization's goals (Pfeffer, 1995, 1998). In addition, employees also have the role to share ideas and solve a problem (Jiang and Liu, 2015). The purpose of employee participation is to empower and create opportunities for employees to share norm, information, ideas, and others within the organization (Lines, 2004).

Clear job description (R5) is the definition of the scope of duties, responsibilities and working conditions and the determination of the skills and qualifications of individuals required in each job.

Job engagement is a characteristic of physical, emotional and exhaustion related to work, which consists of three components (Schaufeli, Salanova, González-Romá, and Bakker, 2002), namely vigor (R6) is the willingness to devote strength at work, high levels of energy to working, and perseverance even in the case of difficulties, dedication (R7) is the sense of willingness, pride, inspiration, and duty to work, and absorption (R8) is the sense of commitment, concentration, and happiness at work which make it difficult to withdraw from the job (Schaufeli and Bakker, 2004).

OCB (R9) is a voluntary behavior of an employee who assists the organization both in-role and extra-role performance without reward (Organ, 1988).

Employee retention (R10) is the attitude or thinking of the person who shows a decision-making behavior that does not leave the job (Elangovan, 2001).

POS (R11) is the confidence of employees that they are valuable to the organization. They also receive support, concern, and well-being of the organization (Eisenberger, Huntington, Hutchison, and Sowa, 1986).

Interpretive Structural Modelling

In 1973, Warfield initially used ISM for analyzing economic and social systems which were highly complicated (George and Pramod, 2014; Rehman and Shrivastava, 2011). In recent

years, ISM has been used for management research. (Kumar, Luthra, and Haleem, 2013). ISM refers to the systematic application of the basic notions of theoretical, conceptual, and computational power is employed to efficiently construct a directed graph, or linkage illustration, of the complex form of the contextual relationship among the various factors of the system (Sindhwani and Malhotra, 2017).

ISM method depends on the interpretation and judgment of experts and practitioners from industry and academic or those involved in the underlying context. The factors are investigated whether they are related to the underlying context or not and how so (Luthra, Kumar, Kumar, and Haleem, 2011). The complicated relations of the model structure are classified. The completed process gives an overall picture of the model structure and a diagram showing the relations among the factors (George and Pramod, 2014; Sushil, 2012).

Research Methodology

Data used in the research were collected with interview using the Delphi method from the eight experts from academia and industry of manufacturing industry in Thailand. The five experts from industry consisted of human resource manager and three experts from academia were consulted. Each qualified expert has over 15 years of experience and is well conversant with human resource management issues. Each organization has less than 200 employees. The Delphi method is extensively used and accepted for collecting data from expertise. The definition Delphi technique is a decision-making method of well-known group relating a structured collaboration a panel of experts that anonymously tries to reach a mutual consensus on important features of a certain topic area. In addition, the process continues until experts come to a mutual agreement (Bhosale and Kant, 2016).

Data analysis using ISM technique. This technique involves eight steps (Rehman and Shrivastava, 2011; Sindhwani and Malhotra, 2017). The detail is as follows.

Step 1: Assigning and defining factors. This first step requires a literature review of grounded theory, idea generation, and brainstorm of the experts from academia or industry (Poduval and Pramod, 2015; Sushil, 2012).

Step 2: Defining the relations among the factors according to the context. Since the underlying factors involved complicated relations, in this second step the relations needed to be defined by comparing each pair of the factors in both directions.

Step 3: Developing structural self-interaction matrix. Structural self-interaction matrix (SSIM) is a matrix that shows the directions of the relations between the factors (i and j). These relations are represented by V, A, X, and O under the following conditions:

When i affects j, the relation is represented by V

When j affects i, the relation is represented by A

When i and j affect each other, the relation is represented by X

When i and j do not affect each other, the relation is represented by O

Step 4: Developing a reachability matrix. Reachability matrix illustrates the relationship between the factors in a binary matrix form from Step 3, which is replaced by 1 and 0 under the following conditions.

When it shows V, reachability matrix of i and j is 1 and that of j and i is 0.

When it shows A, reachability matrix of i and j is 0 and that of j and i is 1.

When it shows X, reachability matrix of i and j is 1 and that of j and i is 1.

When it shows O, reachability matrix of i and j is 0 and that of j and i is 0.

Then, transitivity of the relations between the factors was conducted according to the hypothesis. That is when A relates to B, and B relates to C, A inevitably relates to C. Though both factors do not initially relate to each other, the relation will be built when the transitivity is conducted. The transitive factors are represented by 1 which often called final reachability matrix.

Step 5: Partitioning reachability matrix into levels. In this step, reachability set, antecedent set, and intersection set were created based on information in the final reachability matrix. The reachability set consisted of the factors in the horizontal rows, while those in the vertical columns were included in the antecedent set. The factors that fell into both reachability and antecedent sets were to be in the intersection set and was put at the top level of the ISM, meaning that they were factors that did not have any effects on other factors at other levels. After that, the same factors at the top level were to be deleted from the reachability set, antecedent set, and intersection set (Sindhwani and Malhotra, 2017). The same process was repeated to identify factors at other levels until more could not be identified.

Step 6: Developing the diagram. The development of the diagram began withdrawing the top level is positioned at the top of the diagram and second level is placed at the second position and so on, until the bottom of the diagram is placed at the lowest position. This diagram presents the relations of the underlying factors.

Step 7: Developing the ISM model. In this step, the diagram in Step 6 was transcribed into the ISM model by replacing the nodes with the name of the factors.

Step 8: MICMAC Analyzing. The MICMAC analysis was performed with driving power and dependence power of each factor shown in final reachability matrix. The factors can be divided into four groups according to their driving power and dependence power. They are an autonomous factor, dependent factor, linkage factor, and independent factor (Mandal and Deshmukh, 1994; Singh and Kant, 2008).

Group 1: autonomous factor is a factor having weak driving power and weak dependence power; thus, it can be deleted from the structure for its rare relations to other factors and no effect on the model structure (Poduval and Pramod, 2015; Rehman and Shrivastava, 2011).

Group 2: dependent factor is a factor having weak driving power and strong dependence power, meaning that it is highly influenced by the model structure.

Group 3: linkage factor is a factor having strong driving power and strong dependence power. The linkage factor brings about the instability of the model structure as it can simultaneously affect and be affected by other factors, causing fluctuation in the model structure (Poduval and Pramod, 2015).

Group 4: independent factor is a factor having strong driving power and weak dependence power. With its extremely strong driving power, this factor is considered significant as it is the first factor having an effect on others and can be grouped as a linkage factor (Rehman and Shrivastava, 2011).

Research Results

ISM model, factors are model structure into the eight iterations with experts from academia and industry. Table 1 presents the SSIM. Table 2 shows the initial reachability matrix and the transitive factors as shown in Table 3. In this study, there were eight iterations as shown in Table 4.

Table 1 SSIM

	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11
R1	1	A	O	O	O	O	O	O	O	O	O
R2		1	V	O	A	V	V	V	O	O	O
R3			1	O	O	V	V	A	O	V	O
R4				1	O	V	V	O	X	A	O
R5					1	V	V	O	O	V	O
R6						1	V	A	V	V	A
R7							1	X	V	V	A
R8								1	V	V	O

Table 1 (Con.)

	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11
R9									1	V	A
R10										1	A
R11											1

Table 2 **Initial Reachability Matrix**

	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11
R1	1	0	0	0	0	0	0	0	0	0	0
R2	1	1	1	0	0	1	1	1	0	0	0
R3	0	0	1	0	0	1	1	0	0	1	0
R4	0	0	0	1	0	1	1	0	1	0	0
R5	0	1	0	0	1	1	1	0	0	1	0
R6	0	0	0	0	0	1	1	0	1	1	0
R7	0	0	0	0	0	0	1	1	1	1	0
R8	0	0	1	0	0	1	1	1	1	1	0
R9	0	0	0	1	0	0	0	0	1	1	0
R10	0	0	0	1	0	0	0	0	0	1	0
R11	0	0	0	0	0	1	1	0	1	1	1

Table 3 Final Reachability Matrix

	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	Driving Power
R1	1	0	0	0	0	0	0	0	0	0	0	1
R2	1	1	1	0	0	1	1	1	0	1	0	7
R3	0	0	1	0	0	1	1	0	1	1	0	5
R4	0	0	0	1	0	1	1	0	1	1	0	5
R5	0	1	0	0	1	1	1	1	1	1	0	7
R6	0	0	0	0	0	1	1	1	1	1	0	5
R7	0	0	0	0	0	0	1	1	1	1	0	4
R8	0	0	1	0	0	1	1	1	1	1	0	6
R9	0	0	0	1	0	1	1	0	1	1	0	5
R10	0	0	0	1	0	1	1	0	1	1	0	5
R11	0	0	0	0	0	1	1	1	1	1	1	6
Dependent Power	2	2	3	3	1	9	10	6	9	10	1	56

Table 4 Iterations-1-8

Factors	Reachability set	Antecedent set	Intersection set	Level
(a): Iteration-1				
R1	1	1,2	1	I
R2	1,2,3,6,7,8,10	2,5	2	
R3	3,6,7,9,10	2,3,8	3	
R4	4,6,7,9,10	4,9,10	4,9,10	
R5	2,5,6,7,8,9,10	5	5	
R6	6,7,8,9,10	2,3,4,5,6,8,9,10,11	6,8,9,10	
R7	7,8,9,10	2,3,4,5,6,7,8,9,10,11	7,8,9,10	I
R8	3,6,7,8,9,10	2,5,7,8,11	7,8	

Table 4 (Con.)

Factors	Reachability set	Antecedent set	Intersection set	Level
R9	4,6,7,9,10	3,4,5,6,7,8,9,10,11	4,6,7,9,10	I
R10	4,6,7,9,10	3,4,5,6,7,8,9,10,11	6,9,10	
R11	6,7,8,9,10,11	11	11	
(b): Iteration-2				
R2	2,3,6,8,10	2,5	2	
R3	3,6,10	2,3,8	3	
R4	4,6,10	4,10	4,10	
R5	2,5,6,8,10	5	5	
R6	6,8,10	2,3,4,5,6,8,10,11	6,8,10	II
R8	3,6,8,10	2,5,8,11	8	
R10	4,6,10	3,4,5,6,8,10,11	6,10	
R11	6,8,10,11	11	11	
(c): Iteration-3				
R2	2,3,8,10	2,5	2	
R3	3,10	2,3,8	3	
R4	4,10	4,10	4,10	III
R5	2,5,8,10	5	5	
R8	3,8,10	2,5,8,11	8	
R10	4,10	3,4,5,8,10,11	10	
R11	8,10,11	11	11	
(d): Iteration-4				
R2	2,3,8,10	2,5	2	
R3	3,10	2,3,8	3	
R5	2,5,8,10	5	5	
R8	3,8,10	2,5,8,11	8	
R10	10	3,5,8,10,11	10	IV
R11	8,10,11	11	11	
(e): Iteration-5				
R2	2,3,8	2,5	2	
R3	3	2,3,8	3	V
R5	2,5,8	5	5	
R8	3,8	2,5,8,11	8	
R11	8,11	11	11	
(f): Iteration-6				
R2	2,8	2,5	2	
R5	2,5,8	5	5	
R8	8	2,5,8,11	8	VI
R11	8,11	11	11	
(g): Iteration-7				
R2	2	2,5	2	VII
R5	2,5	5	5	
R11	11	11	11	VII
(h): Iteration-8				
R5	5	5	5	VIII

The ISM model provided empirical evidence of the influence of clear job description on performance appraisal, and POS, which in turn affected absorption. In addition, this model also presented the hierarchical relationships between absorption, compensation and reward, employee retention, employee participation, vigor, training, dedication, and OCB as shown in Figure 1.
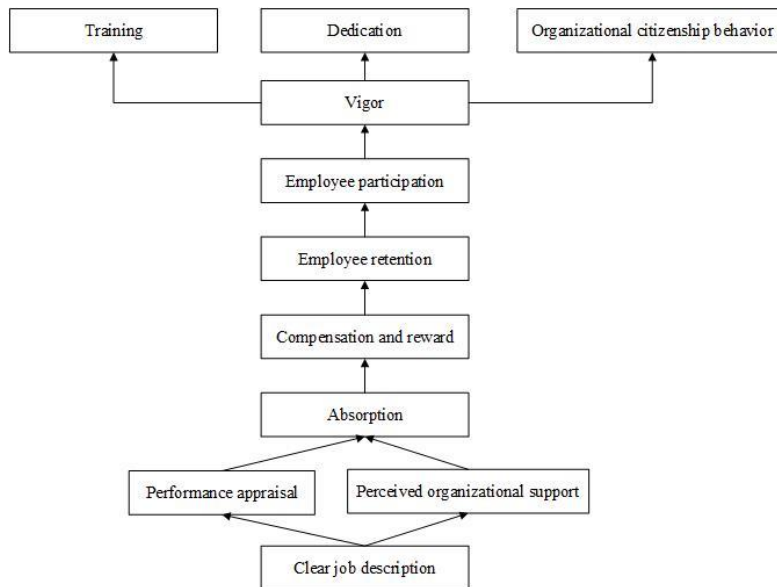

Figure 1 ISM Model

MICMAC analysis, results also the classified group of an autonomous factor, dependent factor, linkage factor, and independent factor. Group 1: autonomous factor, we have one factor i.e., training (Factor 1). Group 2: dependent factor, we have four factors i.e., vigor, dedication, OCB, and employee retention (Factors 6, 7, 9 and 10). Group 3: linkage factor, we have one factor i.e., absorption (Factors 8). Group 4: independent factor, we have five factors i.e., performance appraisal, compensation and reward, employee participation, clear job description, and POS (Factors 2, 3, 4, 5, and 11) as shown in Figure 2.
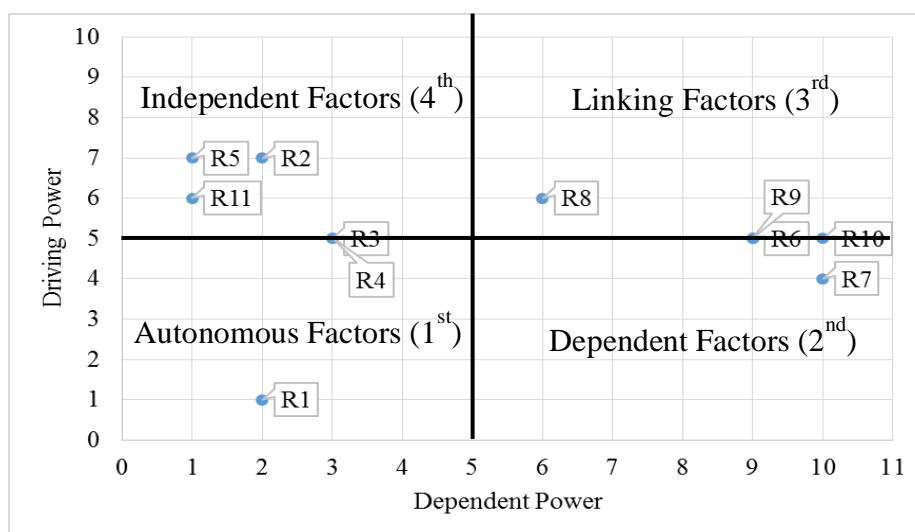

Figure 2 MICMAC

Discussion and Conclusion

Attracting and retaining employees is a challenge, which essential to help an organization lead to sustainable competitive advantage. The employees feel that effective HRMP have a positive relationship with employee retention. This study employed the ISM technique to investigate 11 factors affecting employee retention of the manufacturing industry in Thailand. The ISM model, the findings indicate that clear job description is related to performance appraisal and POS which will greatly improve employee efficiency. The clear job description is specific to each job, which influences the employee to use different skills of the individual, and affects employee motivation and employee satisfaction. Performance appraisal improves employee performance because employees can improve their performance consistent with organizational performance. An employee is the sense of POS that will affect employees' absorption and compensation and reward. Employees have a notion that compensation and reward lead to improving an employee's loyalty and retention toward the organization (Haider et al., 2015) Moreover, employee retention is an important process to decrease turnover and improve organizational performance. Therefore, if an organization increases employee investment, it will also increase employee retention or intention to stay that will lead to more employee participation, vigor, dedication, and OCB.

MICMAC analysis results also classified a group of independent or predictor factors consisted of performance appraisal, compensation and reward, employee participation, clear job description, and POS that clear job description is a factor having strong driving power and weak dependence power. Although vigor and dedication are a classified group of dependent factors but based on a literature review regarding the role of job engagement is a characteristic of physical, emotional and exhaustion related to work, which consists of three components; vigor, dedication, and absorption (Schaufeli et al, 2002). Moreover, the findings of previous research which indicated that employee retention increases when the degree of OCB increases (Chinomona, 2017) because if the organization is focused on the behavior of employees, those behaviors may become the real assets of the organization. The employees' behavior is important to make the employees have a commitment and retention toward the organization (Iftikhar et al., 2016). Therefore, linkage factors comprised vigor, dedication, absorption, and OCB.

Furthermore, the dependent factor is a factor having weak driving power and strong dependence power. In this group included employee retention. The results of this study are consistent with the SET concept that employees have an obligation, trust, and loyalty which lead to a positive attitude toward the organization and better behaviors (Cropanzano and Mitchell, 2005; Karatepe and Olugbade, 2016; Saks, 2006; Snape and Redman, 2010). Surprisingly, training was irrelevant to the model of employee retention. The findings of the study will be beneficial to practitioners on how to improve and develop HRM in an organization and effective strategies to improve employee retention.

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