

แบบจำลองการแปลงเชิงโครงสร้างปัจจัยที่มีอิทธิพลต่อความผูกพันต่อองค์กร
ของพนักงานที่มีต่อผลการดำเนินงานในอุตสาหกรรมบริการประเภทโรงแรม

INTERPRETIVE STRUCTURAL MODELING OF ANTECEDENTS AFFECTING
EMPLOYEE ENGAGEMENT AND BUSINESS PERFORMANCE
IN HOTEL INDUSTRY

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การศึกษานี้ มีวัตถุประสงค์เพื่อตรวจสอบความสัมพันธ์ระหว่างปัจจัยที่มีอิทธิพลต่อความผูกพันต่อองค์กรของพนักงานที่มีต่อผลการดำเนินงานในอุตสาหกรรมบริการ ประเภทโรงแรมระดับ 3 ดาวขึ้นไป โดยการสัมภาษณ์ผู้เชี่ยวชาญ 5 คน เพื่อรวบรวมข้อมูลเชิงลึกเพื่อช่วยสร้างความสัมพันธ์ตามบริบทระหว่างปัจจัยสำหรับแบบจำลองการแปลงเชิงโครงสร้าง ผลจากการสร้างแบบจำลองการแปลงเชิงโครงสร้าง แสดงให้เห็นถึงความสัมพันธ์ระหว่างค่าตอบแทนและสวัสดิการ มีผลต่อการจัดเก็บและสืบค้นความรู้ และพฤติกรรม การเป็นสมาชิกที่ดีขององค์กร นอกจากนี้ผลการวิเคราะห์ MICMAC ยังแสดงให้เห็นว่า ความผูกพันต่อองค์กรของพนักงานและปัจจัยที่มีอิทธิพลต่อความผูกพันต่อองค์กรของพนักงานมีการเชื่อมโยงซึ่งกันและกัน

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Abstract

The study aimed to examine the relationships between antecedents and consequences of employee engagement in hotel industry. Five experts were interviewed to gather insights for creating contextual relationships between these variables. The findings from interpretive structural modeling indicated high interrelationship and interconnectivity results show compensation and benefits affect to knowledge storage and retrieval and organizational citizenship behavior. Additionally, MICMAC analysis results signified that employee engagement and its antecedents and consequences were classified as linkage drivers.

Keywords: Knowledge Management, Employee Engagement, Hotel Industry, Interpretive Structural Modeling

Introduction

Previous studies have identified an association between employee engagement and positive outcomes including effectiveness, innovation, and competitiveness (e.g., Gruman & Saks, 2011; Harter, Schmidt, & Hayes, 2002). When employees are engaged in work, they are alert, and emotionally connected to their tasks (Kahn, 1990). Hence, it is crucial for management to establish the right work environment in order to retain engaged employees. The current study aimed to investigate the relationships between antecedents and consequences of employee engagement in hotel industry in Thailand. The main objective was using Interpretive Structural Modeling (ISM) to illustrate these relationships. Employee engagement is a behavior of individual at work, such as an expression of perception or emotion literature, the study focused on the following antecedents of employee engagement in hotel industry during work (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002) and consists of three components - vigor, dedication and absorption (Schaufeli, & Bakker, 2004). Based on a review of literature, the study focused on the following antecedents of employee engagement in hotel industry, namely of knowledge management (Becerra-Fernandez, Gonzalez, & Sabherwal, 2004), working environment (Miles, 2001), job satisfaction (Radosevich, Radosevich, Riddle, & Hughes, 2008), compensation and benefits (Collins & Clark, 2003) and training and development (Alderfer, 1972), and examined the following consequences of employee engagement examined in this study were intention to turnover (Lu, Lu, Gursoy, & Neale, 2016), entrepreneurial orientation (Hernández-Perlines, 2016), and organizational citizenship behavior (Rich, Lepine, & Crawford, (2010).

Literature Review

Base on literature review and empirical studies, The current study examined antecedents and consequences of employee engagement as follows: Knowledge

management is collection and preparation of existing knowledge and diffusion within the organization to improve employee performance and organization performance (Chenhall & Langfield-Smith, 1998). The elements of Knowledge management consist of Knowledge Acquisition, Knowledge Creation, Knowledge Storage and Retrieval, and Knowledge Transfer and Utilization (Marquardt, 1996; Skyrme 2003).

Knowledge acquisition (C1) refers to a process of storing knowledge that is systematically searchable (Shafee, Qaderzade, & Lavee, 2010).

Knowledge creation (C2) refers to the ability to continuously transfer, combine, and convert different types of knowledge as users practice, interact, and learn (Lee, Leong, Hew, & Ooi, 2013).

Knowledge storage and retrieval (C3) refers to the organizational retention development process, in which knowledge is correctly stored in physical memory systems and informally retained as values (Garcia-Morales, Llorens-Montes, & Verdu-Jover, 2007).

Knowledge transfer and utilization (C4) refers to knowledge exchange between individuals or the application of knowledge gained from actual work. (Darroch, 2003).

Working environment (C5) refers to the surrounding conditions in which an employee works (Ahmad & Schroeder, 2003).

Job satisfaction (C6) refers to the amount to which persons satisfaction or dissatisfaction their works (Harter, et al. 2002).

Compensation and benefits (C7) refers to the compensation or salary and other monetary and non-monetary benefits approved by a firm to its employees (Saks, 2006).

Training and development (C8) refers to encouraging employees to have better opportunities and development which leads to promotion in their field of work (Alderfer, 1972).

Kahn (1990) is the first person that has presented have referred to the concept of employee engagement is the behavior that has shown from the personnel during of working such as, the perception or the feeling during of working, when employee has the participation in working, they are aware of their work.

The employee engagement is determined to be the response that is related to the working of the awareness with vigor, absorption and dedication (Schaufeli et al., 2002).

Vigor (C9) refers to highlights of high energy and mental flexibility while working (Schaufeli & Bakker, 2004).

Absorption (C10) refers to participation in people's work and enthusiasm (Schaufeli & Bakker, 2004).

Dedication (C11) refers to appreciate the work and solves the problem of work (Schaufeli & Bakker, 2004).

Intention to turnover (C12) refers to the behavior of employees to leave their organization (Aydogdu & Asikgil, 2011).

Entrepreneurial orientation (C13) refers to the multidimensional concept, useful at the organizational level, which typifies organization's entrepreneurial behavior (Miller, 1983). Organizational citizenship behavior (C14) refers to behavior in addition to work responsibilities (George & Jones 1999).

Research Methodology

Interpretive Structural Model (ISM) was first introduced by Warfield in 1973 (Warfield, 1974) and developed into more complex structural model (Malhotra, 2014) by using drawings and mathematical equations to solve complex problems (Singh & Khamba 2011; Talib, Rahman, Qureshi, 2011). The purpose of the ISM is to help people to understand what they believe and realize what they do not know (Jain & Raj 2015). The ISM is a set of direct and indirect related components, with an interactive and structured learning process (Attri, Dev, & Sharma, 2013). The ISM process starts with identifying factors affecting other variables (Mittal & Sangwan, 2011). The relationship of the variables is then converted into a structure. After creating the structural-self interactive matrix (SSIM), the reachability matrix (RM) is developed from SSIM and the matrices will be checked for transitivity. Then the partitioning of the SSIMs will be drawn as a digraph which will then be converted to the ISM. Finally, the developed ISM model will be reviewed for the validation and might be modified if needed (Talib et al. 2011; Raj, Shankar, Suhaib, 2008; Malhotra, 2014; Jagannathan, 2014).

The current study investigated the relationship between antecedents and consequences of employee engagement in hotel with size 3 stars and upwards. ISM was used to describe the meaning of each variable's link. The structured interviews were conducted to collect the insights of five experts selecting from the position of human resource manager in the hotel industry for creating contextual relationships between factors for ISM. ISM of the current study has the following steps (Sindhwani & Malhotra, 2017).

Step 1: Identification of factors affecting the organization

Knowledge acquisition (C1), Knowledge creation (C2), Knowledge storage and retrieval (C3), Knowledge transfer and utilization (C4), Working environment (C5), Job satisfaction (C6), Compensation and benefits (C7), Training and Development (C8), Vigor (C9), Absorption (C10), Dedication (C11), Intention to turnover (C12), Entrepreneurial Orientation (C13), Organizational citizenship behavior (C14)

Step 2: Development of structural-self interactive matrix (SSIM)

SSIM development uses the subsequent symbols to illustrate the way of the relationships between variables *i* and *j* as shown in Table 1.

V symbol is used when variable *i* affects variable *j*.

A symbol is used when the variable j affects variable i.

X symbol is used when the variables i and j affect each other.

O symbol is used when the variables i and j do not affect each other.

Table 1 Structural self-interaction matrix (SSIM)

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
C1		X	X	X	X	X	X	X	X	X	X	0	X	0
C2			X	X	X	X	0	X	X	X	X	0	A	A
C3				X	X	X	0	X	X	X	X	0	0	0
C4					X	0	X	X	X	X	X	0	A	0
C5						X	X	X	X	X	X	X	X	X
C6							X	X	X	X	X	X	X	X
C7								X	X	X	X	X	X	0
C8									X	X	X	X	X	X
C9										X	X	X	X	X
C10											X	X	X	X
C11												X	X	X
C12													X	X
C13														X
C14														

Table 1 shows the relationships among the 14 variables from SSIM using a symbol representing the associations between variables (i, j).

Step 3: Development of reachability matrix

The reachability matrix acquired from SSIM shows the connection between elements in the second form. The relationships represented by the symbols V, A, X, O in SSIM are replaced by binary symbols of 0 and 1 using the following directions.

If i, j in SSIM is V, then i, j entry in the reachability matrix converts 1 and j, i as 0.

If i, j in SSIM is A, then i, j entry in the reachability matrix converts 0 and j, i as 1.

If i, j in SSIM is X, then i, j entry in the reachability matrix converts 1 and j, as 1.

If i, j in SSIM is O, then i, j entry in the reachability matrix converts 0 and j, i as 0.

This reachability matrix is acknowledged as initial research ability matrix and it is shown in Table 2.

Table 2 Initial reachability matrix

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
C1	1	1	1	1	1	1	1	1	1	1	1	0	1	0
C2	1	1	1	1	1	1	0	1	1	1	1	0	0	0
C3	1	1	1	1	1	1	0	1	1	1	1	0	0	0
C4	1	1	1	1	1	0	1	1	1	1	1	0	0	0
C5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C6	1	1	1	0	1	1	1	1	1	1	1	1	1	1
C7	1	0	0	1	1	1	1	1	1	1	1	1	1	0
C8	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C9	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C10	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C11	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C12	0	0	0	0	1	1	1	1	1	1	1	1	1	1
C13	1	1	0	1	1	1	1	1	1	1	1	1	1	1
C14	0	1	0	0	1	1	0	1	1	1	1	1	1	1

Table 2 show that final reachability matrix is a matrix validation for transformation. Transition is a fundamental assumption in the ISM that determines the relationship of the variables. If variables A is associated to variables B, and variable B is linked to variable C, then variables A and C are also related.

Table 3 The transitivity

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
C1	1	1	1	1	1	1	1	1	1	1	1	0	1	0
C2	1	1	1	1	1	1	<u>0</u>	1	1	1	1	0	<u>0</u>	0
C3	1	1	1	1	1	1	<u>0</u>	1	1	1	1	0	<u>0</u>	0
C4	1	1	1	1	1	<u>0</u>	1	1	1	1	1	0	<u>0</u>	0
C5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C6	1	1	1	<u>0</u>	1	1	1	1	1	1	1	1	1	1
C7	1	<u>0</u>	<u>0</u>	1	1	1	1	1	1	1	1	1	1	<u>0</u>
C8	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C9	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C10	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C11	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C12	0	0	0	0	1	1	1	1	1	1	1	1	1	1
C13	1	1	0	1	1	1	1	1	1	1	1	1	1	1
C14	0	1	0	0	1	1	0	1	1	1	1	1	1	1

Table 3 shows that the transitivity is a matrix validation for transformation. Transition is a fundamental assumption in the ISM that determines the relationship of the variables. If variables A is associated to variables B, and variable B is linked to variable C, then variables A and C are also connected.

Step 4: Partitioning the reachability matrix

The final reachability matrix is set consists of the horizontal factors, while the antecedent set consists of the vertical factors. The interception of these sets is derived for all the factors. The factors for which the reachability and the interception sets are the similar dominate the top level in the ISM hierarchy. The top-level factors in the hierarchy, after the top-level factors are identified and removed from the other factors, then the same process is repeated to find out the factors in the next level. This process will continue until the level of each factor is found. Level identification process of these factors is completed in three iterations. The identified levels help develop the diagraph and final model of ISM as show in Table 4 to Table 6.

Table 4 Final reachability matrix

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	Diving Power
C1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	12
C2	1	1	1	1	1	1	<u>1</u>	1	1	1	1	0	<u>1</u>	0	12
C3	1	1	1	1	1	1	<u>1</u>	1	1	1	1	0	<u>1</u>	0	12
C4	1	1	1	1	1	<u>1</u>	1	1	1	1	1	0	<u>1</u>	0	12
C5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
C6	1	1	1	<u>1</u>	1	1	1	1	1	1	1	1	1	1	14
C7	1	<u>1</u>	<u>1</u>	1	1	1	1	1	1	1	1	1	1	<u>1</u>	14
C8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
C9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
C10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
C11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
C12	0	0	0	0	1	1	1	1	1	1	1	1	1	1	10
C13	1	1	0	1	1	1	1	1	1	1	1	1	1	1	13
C14	0	1	0	0	1	1	0	1	1	1	1	1	1	1	10
Dependent Power	12	13	11	12	14	14	13	14	14	14	14	10	14	10	179

Table 4 shows that the factors for which the reachability and the interception sets are the similar dominate the top level in the ISM hierarchy. The top-level factors in the

hierarchy, after the top-level factors are identified and removed from the other factors, therefore Knowledge storage and retrieval (C3), Compensation and benefits (C7), and Organizational citizenship behavior (C14) were removed.

Table 5 Iteration 1

Factor	Reachability set	Antecedent set	Intersection set	Level
1	1,2,3,4,5,6,7,8,9,10,11,13	1,2,3,4,5,6,7,8,9,10,11,13	1,2,3,4,5,6,7,8,9,10,11,13	I
2	1,2,3,4,5,6,7,8,9,10,11,13	1,2,3,4,5,6,7,8,9,10,11,13,14	1,2,3,4,5,6,7,8,9,10,11,13	I
3	1,2,3,4,5,6,7,8,9,10,11,13	1,2,3,4,5,6,7,8,9,10,11	1,2,3,4,5,6,7,8,9,10,11	
4	1,2,3,4,5,6,7,8,9,10,11,13	1,2,3,4,5,6,7,8,9,10,11,13	1,2,3,4,5,6,7,8,9,10,11,13	I
5	1,2,3,4,5,6,7,8,9,10,11,12,13,14	1,2,3,4,5,6,7,8,9,10,11,12, 13,14	1,2,3,4,5,6,7,8,9,10,11,12 13,14	I
6	1,2,3,4,5,6,7,8,9,10,11,12,13, 14	1,2,3,4,5,6,7,8,9,10,11,12, 13,14	1,2,3,4,5,6,7,8,9,10,11,12 13,14	I
7	1,2,3,4,5,6,7,8,9,10,11,12,13, 14	1,2,3,4,5,6,7,8,9,10,11,12, 13	1,2,3,4,5,6,7,8,9,10,11,12 ,13	
8	1,2,3,4,5,6,7,8,9,10,11,12,13, 14	1,2,3,4,5,6,7,8,9,10,11,12, 13,14	1,2,3,4,5,6,7,8,9,10,11,12 13,14	I
9	1,2,3,4,5,6,7,8,9,10,11,12,13, 14	1,2,3,4,5,6,7,8,9,10,11,12, 13,14	1,2,3,4,5,6,7,8,9,10,11,12 13,14	I
10	1,2,3,4,5,6,7,8,9,10,11,12,13, 14	1,2,3,4,5,6,7,8,9,10,11,12, 13,14	1,2,3,4,5,6,7,8,9,10,11,12 13,14	I
11	1,2,3,4,5,6,7,8,9,10,11,12,13, 14	1,2,3,4,5,6,7,8,9,10,11,12, 13,14	1,2,3,4,5,6,7,8,9,10,11,12 13,14	I
12	5,6,7,8,9,10,11,12,13,14	5,6,7,8,9,10,11,12,13,14	5,6,7,8,9,10,11,12,13,14	I
13	1,2,4,5,6,7,8,9,10,11,12,13,14	1,2,3,4,5,6,7,8,9,10,11,12, 13,14	1,2,4,5,6,7,8,9,10,11,12, 13,14	I
14	2,5,6,8,9,10,11,12,13,14	5,6,7,8,9,10,11,12,13,14	5,6,8,9,10,11,12,13,14	

Table 5 shows that the factors for which the reachability and the interception sets are the similar dominate the top level in the ISM hierarchy. The top-level factors in the hierarchy, after the top-level factors are identified and removed from the other factors, thus Compensation and benefits (C7) was removed.

Table 6 Iteration 2

Factor	Reachability set	Antecedent set	Intersection set	Level
3	3,7	3,7	3,7	II
7	3,7,14	3,7	3,7	
14	14	7,14	14	II

Table 6 shows that Compensation and benefits (C7) was the top-level factors in the hierarchy.

Step 5: Development of conical matrix

Canonical matrix is developed by linking the factors in the equal level across the rows and columns of the final reachability matrix. The drive power of each factor is derived from the sum of ones in the rows, and dependence power by sum of ones in the columns. Driving power and dependence power levels are calculated by giving highest levels to the factors that have the maximum number of ones in the rows and columns respectively as show in Table 7.

Table 7 Iteration 3

Factor	Reachability set	Antecedent set	Intersection set	Level
7	7	7	7	III

Table 7 shows that driving power and dependence power levels are calculated by giving highest levels to the factors that have the maximum number of ones in the rows and columns respectively.

Step 6: Development of digraph

This step is to convert the digraph, into an ISM model by replacing the variable name into a node. The elements are set in levels and the focused and significant links are presented as each the relationship observed in the digraph as shown in Figure 1.

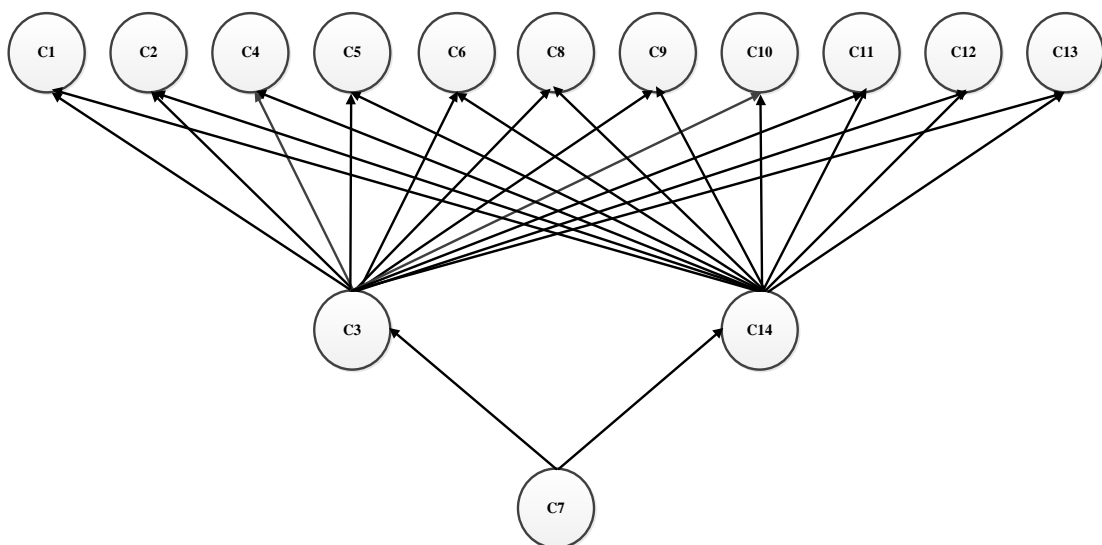


Figure 1 Digraph for factors

Step 7: Graphing to position variables

This step is to classify the variables based on their driving power and dependence power into four groups: autonomous barriers, dependent drivers, linkage drivers, and independent drivers as shown in Figure 2.

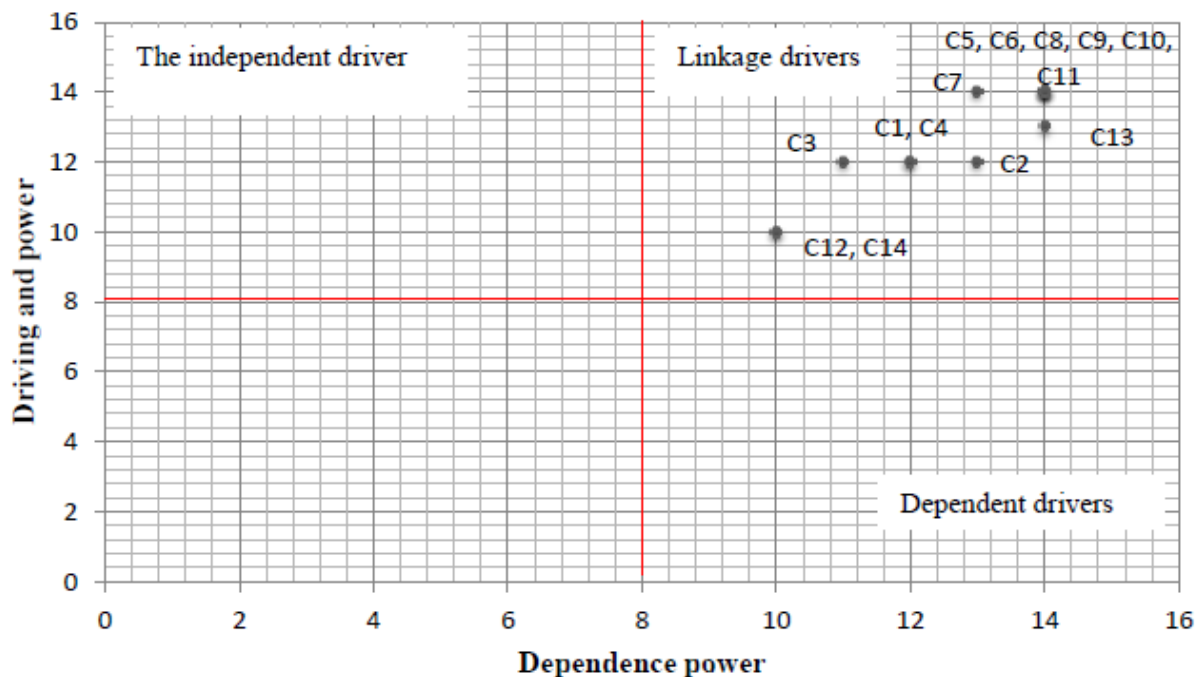


Figure 2 MICMAC Analysis by driving power and dependence power

Group 1 The independent variables are variables with strong driving power and weak dependence power. These variables obviously have high driving power which indicates that they are important variables (Chenhall & Langfield-Smith, 1998). In the present study, no variables belong to this group.

Group 2 Linkage drivers are variables that have strong driving power and strong dependence power. The intermediate variables cause system instability. They can also be grouped into independent variables or dependent variables (Chenhall & Langfield-Smith, 1998) because they have ability to affect other variables and can be influenced by other variables. In the present study, all variables belong of this group.

Group 3 Dependent drivers are variables with weak driving power and strong dependence power. It is a group that is profoundly influenced by the system (Chenhall & Langfield-Smith, 1998). In the present study, no variables belong to this group.

Group 4 Autonomous barriers are variables with weak driving power and weak dependence power. Therefore, these variables can be eliminated from the ISM. In the current study, no variables belong to this group.

Research Findings

Fourteen factors are recognized and analyzed the relationship between antecedents and consequences of employee engagement in hotel industry in Thailand. ISM modeling is completed to structure and analyze these factors. Compensation and benefits shows the strong driving power as these factors occupy the bottom levels of ISM based model. Compensation and benefits affect to knowledge storage and retrieval and organizational citizenship behavior and it's also affects other components. Therefore, the development of employee empowerment requires that the part of organization. Compensation and benefits are clearly and system that can drive the development of the organization better. MICMAC analysis remains categories the variables based on their driving power and dependence power into four groups: autonomous barriers, dependent drivers, linkage drivers, and independent drivers. In this study, All variable show in a group of linking driver. These factors can also be grouped into independent variables or dependent variables because they have ability to affect other variables and can be influenced by other variables.

Therefore, the independent variables in the conceptual framework are Knowledge Acquisition, Knowledge Creation, Knowledge Storage and Retrieval, Knowledge Transfer and Utilization, Work Environment, Job Satisfaction, Compensation and Benefits and Training and Career Development. The Mediator Variables are vigor, absorption, and dedication and the dependent Variable are Intention to Turnover, Entrepreneurial Orientation and Organizational Citizenship Behavior.

Conclusion and Discussion

Interpretive structural model (ISM) was developed into more complex structural model by using drawings and mathematical equations to solve complex problems. It is a set of direct and indirect related components, with an interactive and structured learning process and was used to describe the meaning of each variable's link. The study employed interpretive structural modeling technique and MICMAC analysis to investigate the relationship between antecedents and consequences of employee engagement in hotel industry in Thailand. The ISM showed high interrelationship and interconnectivity results show compensation and benefits affect to knowledge storage and retrieval and organizational citizenship behavior. MICMAC analysis results indicated that all variables were classified as linkage drivers.

This research shows that compensation and benefits affect to knowledge storage and retrieval and organizational citizenship behaviour and it's also affects other components and will be the new knowledge in human resource management and unique and effective in Thai hotel industry. According to Sabherwal and Becerra-Fernandez (2001) found that Knowledge transfer and utilization container support to contract the learning of employee to have the flexibility and determination create the new knowledge and this will help to

keep the knowledge of employee and motivation give the effect on the performance (Juan, Yao, Tamyez, & Ayodele, 2016). Although, Bedarkar and Pandita (2014) argue that the positive working environment supports to chance the requirements of the employees and enables them to be satisfied when they usual material and emotional benefits. Employees engagement tends to derived as good job satisfaction, require a significant relationship to their employees engagement (Lu & Gursoy, 2013; Rich et al., 2010; Ziegler, Hagen, and Diehl, 2012). Therefore, the development of employee empowerment requires that the part of organization. Compensation and benefits are clearly and system that can drive the development of the organization better. The employee engagement is determined to be the response that is related to the working of the awareness with vigor, dedication and absorption (Schaufeli et al., 2002). Consistent with Cernas Ortiz, Qin, and Lau. (2013) found that the employee engagement is the creation of the enthusiasm and the will for the staff. This will reduce the resignation problem and the employee engagement has the significance on the reduction of the resignation rate of employee (Maslach, Schaufeli, & Leiter, 2001; Saks, 2006). As this study suggests, today's employee engagement is a reflection of the relationship between employees and the organization. In order to make the employees have an engagement to the organization must create Compensation and benefits, Job Satisfaction since the importance of human resources to drive the organization. The entrepreneur or the executive to apply in the management related to the management of the human resource further.

Limitations and suggestions for the future research

1) The study result, Using Interpretive Structural Modeling to Factors influencing Employee Engagement to the performance in Hotel Industry in Thailand, it's only a part. There are also other factors that shall be brought to study further, such as, the leadership, team and co-worker relationship, compensation etc.

2) The study has been done in the Hotel Industry in Thailand; there are other industries in Thailand such as, the natural extracts industry, the manufacturing industry and the transportation industry, that each industry will have the different context. The service industry mayn't be the representative of all industries in Thailand. Therefore, the research in the future may study in other categories of industries such as, the manufacturing industry, the transportation industry etc.

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