

Knowledge management, organizational innovativeness, business competitiveness and potential operations of electrics and electronics businesses in Thailand

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Abstract

Knowledge is an important topic in modern management. Knowledge considers the new wealth of organizations by which superior business performance and a competitive advantage can be achieved. The primary objective of this research aims to investigate the influence of knowledge management to organizational innovativeness, business competitiveness and potential operation via competitive intensity and market turbulence as a moderator. Data were collected from 104 electrics and electronics businesses in Thailand. Multiple linear regression was performed in this study. The results indicated that the dimensions of knowledge management, namely, knowledge transfer affect product innovativeness and knowledge application affect product innovativeness, process innovativeness, and potential operation. While the competitive intensity and market turbulence not shown moderator effect. The implications of the results of the study are discussed.

Introduction

In the last decade, knowledge is considered the new wealth of organizations by which superior business performance and a competitive advantage can be achieved. Knowledge has become one of the most important trends in business because organizations are trying to achieve greater value from the knowledge they possess (Abesonand Taku, 2009). Knowledge is an important topic in modern management. Both scholars and practitioners recognize the importance of knowledge to organizations in achieving and maintaining a competitive advantage and business competitiveness. According to Nonaka (1991), knowledge is an enduring source of competitive advantage. Some scholars believe that knowledge is the most valuable and important resource possessed by an organization and critical to an organization's survival (Chang and Lee, 2007; Alaviand Leidner, 2001).

In an extensive competitive pressure and rapid technological change environment, have led to firms use of knowledge as the strategic factor to create organizational innovativeness and business competitiveness (Mehrdadand Abdolrahim, 2010). In this competitive pressure and market turbulence situation, the complexity of organizational innovation has also been increased by growth in the amount of knowledge available to organizations as the basis for innovation in a firm (Mehrdadand Abdolrahim, 2010). Now it is widely recognized that knowledge is an essential strategic resource for a firm to retain a sustainable competitiveness (Tsai and Yang, 2013). Knowledge management literature highlights this fact that, in the new economy, the achievement of innovation and a business competitive advantage depends on the firm's capacity to develop and deploy its knowledge-based resources. Knowledge management is an emerging set of organizational design and operational principles, processes, organizational structures, applications and technologies that help knowledge workers dramatically leverage their creativity and ability to deliver business value to the customer and the organization can get business competitiveness and potential operation.

The research questions of this paper are:

- 1) how does knowledge management affect on organizational innovativeness and potential operations?
- 2) how does the organizational innovativeness effect on business competitiveness and though potential operation?
- 3) how does the competitive intensity moderate affect the relationship between knowledge management and potential operation?
- 4) how does market turbulence moderate affect the relationship between organizational innovativeness and business competitiveness?

In this research the purpose are 1) to investigate the influence of knowledge management to organizational innovativeness and potential operation.

2) to investigate the impact of organizational innovativeness on business competitiveness and potential operation. 3) to examine the effect of competitive intensity and market turbulence moderated relationship antecedent of the potential operation.

1. Theoretical foundation and literature Review

Knowledge-based View of the Firm (KBV)

It is largely accepted that the knowledge-based (KBV) view of the firm is a recent extension of the resource-based view of the firm (RBV) of the firm (Grant, 1991; Hoskisson et al., 1999). Because it considers those organizations are heterogeneous entities loaded with knowledge (Hoskisson et al., 1999). The resource base of the organization increasingly consists of knowledge-based assets (Rouse and Dallenbach, 2002). Knowledge resources are particularly important to ensure that competitive advantages are sustainable, as these resources are difficult to imitate they are the foundation for sustainable differentiation (Curado and Bontis, 2006). Capabilities of knowledge management are considered to be the most strategically important ones to create and sustain competitive advantage. Superior talent is recognized to be the main creator of sustained competitive advantage in high-performance firms (Wernerfelt, 1984). The capacity to learn faster than competitors could turn out to be the only sustained competitive advantage. This research summarizes the ideas presented in figure 1. The framework depicts that the four dimensions of knowledge management on organizational innovativeness, business competitiveness, and potential operation while competitive intensity and market turbulence as a modulator.

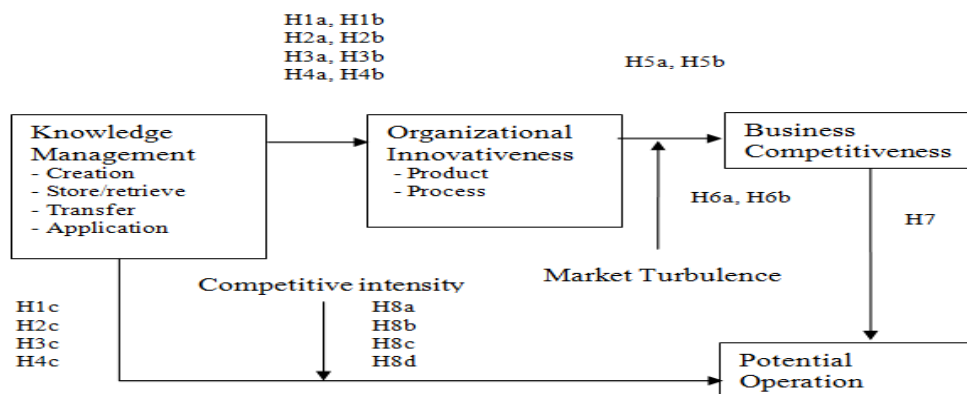


Figure 1 Model of knowledge management and consequence

Knowledge Management

Knowledge management is a systemic and organizationally specified process for acquiring, organizing, and communicating both tacit and explicit knowledge of employees so that other employees may make use of it to be more effective and productive in their work (Alavi and Leidner, 2001). Knowledge management encompasses a broad range of tools, technologies, and practices intended to make better use of a firm's intellectual resources (Davenport and Prusak, 1998). Abeson and Taku (2009) argues that knowledge management is about sharing knowledge

qualitatively and about saving time quantitatively. According to Abesonand Taku (2009) found that knowledge creation acquired by the owners of the firm from colleagues, salesperson, trade publication family members and social contact are a positive effect on competitiveness. Knowledge management includes many activities. Alavi and Lediner (2001) classify four issues in their research - knowledge creation, storage/retrieval, transfer, and application.

Knowledge creation

Knowledge creation is activities for developing new content or replacing existing content within the interactions of tacit and explicit knowledge. Nonaka (1994) presents four modes of knowledge creation through the interactions of tacit and explicit knowledge: (1) socialization, (2) externalization, (3) internalization, and (4) combination. Knowledge creation may be viewed as an upward spiral process, starting at the individual level moving up to the collective level, and then to the organizational level, sometimes reaching out to the inter-organizational level. Knowledge creation might lead to new designs of production and work process. Successful of innovation means more than research and development must create new ideas and transformed into product, process and services that will be sold in the market. According to Merx-Chermin et al., (2004) found that knowledge creation is a factor influence the innovation process. Thus, the hypotheses are proposed as below:

Hypothesis 1a: Knowledge creation will have a positive relationship to product innovativeness.

Hypothesis 1b: Knowledge creation will have a positive relationship to process innovativeness.

Hypothesis 1c: Knowledge creation will have a positive relationship to potential operation.

Knowledge Storage/Retrieve

When knowledge workers resign or retire from a firm without the proper storage of the knowledge they have obtained, customer relationships or performance may be impaired. Knowledge storage is an activity obtaining knowledge inside and outside firms and coding it store in the database easily accessible for everyone. An important consideration with knowledge storage is how much context to include (Alaviand Leidner, 2001). Knowledge is context-specific and thus, without sufficient contextual details, it will not result in effective use. Alavi and Leidner (2001) present two conceptual models in regard to knowledge retrieval - pull and push. The pull model of knowledge retrieval involves the search for knowledge based on specific user queries. In the push model, knowledge is automatically retrieved and delivered to potential users based on predetermined actions. It formalizes knowledge store can provide the possibility of utilizing it later. Knowledge store is similar to organizational memory, in which it enables an individual to store, integrate, and retrieve the information for improving product or service to market (Lee et al., 2013). Thus, the hypotheses are proposed as below:

Hypothesis 2a: Knowledge store/retrieve will have a positive relationship to product innovativeness.

Hypothesis 2b: Knowledge store/retrieve will have a positive relationship to process innovativeness.

Hypothesis 2c: Knowledge store/retrieve will have a positive relationship to potential operation.

Knowledge Transfer

Knowledge, once captured, must be disseminated throughout a firm to foster productivity and innovation (Lee et al., 2013). Knowledge transfer is readily dissemination knowledge and information inside the organization. Knowledge transfer occurs at various levels: between individuals, from individuals to groups, between groups, across groups, and from groups to a firm (Alaviand Leidner, 2001). However, researchers find that knowledge transfer is difficult. The tacitness of knowledge is a widely recognized barrier to its transfer. Motivational depositions and absorptive capacity also make knowledge transfer hard. Gupta and Govindarajan (2000) address five factors to escalate knowledge transfer: (1) value of knowledge, (2) willingness to share knowledge, (3) existence and richness of transmission channels, (4) willingness to acquire knowledge from the

source, and (5) absorptive capacity of the target units. Information technology may enhance the transfer of explicit knowledge by extending people's reach beyond formal communication lines (Alavi and Leidner, 2001). Knowledge management transfer can support innovation, the individual generation of new ideas and transfer to the organization created new product and service (Plessis, 2007). Thus, the hypotheses are proposed as below:

Hypothesis 3a: Knowledge transfer will have a positive relationship to product innovativeness.

Hypothesis 3b: Knowledge transfer will have a positive relationship to process innovativeness.

Hypothesis 3c: Knowledge transfer will have a positive relationship to potential operation.

Knowledge Application

Knowledge creation, knowledge storage/retrieve, and knowledge transfer do not enough to improve the performance of a firm. Knowledge application is responding to knowledge about customer, competitors and technology. It is the effective application of knowledge that reduces costs, improves productivity, generates a new product and new service (Aberson and Taku, 2009). Alavi and Leidner (2001) suggest that firm should pay more attention to the cognitive processes of people for effective knowledge application to generate new product and firm competitiveness. Knowledge application is a strategic competitive asset for modern businesses (Lee et al., 2013). Knowledge application is useful for promoting organization innovativeness, allows organization expertise and used knowledge to be translated into products or process produced. Thus, the hypotheses are proposed as below:

Hypothesis 4a: Knowledge application will have a positive relationship to product innovativeness.

Hypothesis 4b: Knowledge application will have a positive relationship to process innovativeness.

Hypothesis 4c: Knowledge application will have a positive relationship to potential operation.

Organizational Innovativeness

The concept of innovativeness was initially utilized to describe individual consumers' attitudes and acceptance of new products in the literature of communication and diffusion of innovations (Rogers, 1983). Organizational innovativeness can be defined as an organization's overall innovative capability of introducing new products to the market, or opening up new markets, through combining strategic orientation with innovative behavior and improve the business process (Wang and Ahmed, 2004). Consumers with a characteristic of innovativeness are more likely to try and accept new products in the market than other individuals. Many innovations, however, maximize utility in the organizational context, or must be adopted by a collective before they are accepted by individual members (Rogers, 1983). Organizational innovativeness thus becomes an indication of the degree to which an organization is willing to accept and implement innovations. The literature on innovativeness can identify many areas that are components of an organization's overall innovative capability. These dimensions can divide into two groups include product or services innovation and process innovativeness (Wang and Ahmed, 2004). Organizational innovativeness has received to be the key to securing a sustainable competitive in the marketplace (Lee et al., 20013; Hurley and Hult, 1998; Lumpkin and Dess, 1996). Thus, the hypotheses are proposed as below:

Hypothesis 5a: Product innovativeness will have a positive effect to business competitiveness.

Hypothesis 5b: Process innovativeness will have a positive effect to business competitiveness.

Business competitiveness

Competitiveness of a firm can view as a capability has to be realized in a firm everyday operation (Cetindamarand Kilitcioglu, 2013). Companies today are immersed in highly dynamic markets, where the goal to satisfy the customer is no longer sufficient for long-term success and the best business performance. Thus, companies seek to develop mechanisms to obtain business

competitiveness by generating and used knowledge about customers, markets and competitors (Banalesand Andrade, 2011). Business competitiveness can be defined as the capability to provide product and services in the same or more efficient way, than a competitor does in business (Dima et al., 2014). The business competitiveness was mainly the quality and price of goods or services. A firm can then raise the level of its productivity and competitiveness by upgrading its image and developing its unique characteristics for best potential operation (Chuang and Chuang, 2015). Therefore, the aforementioned relationships are hypothesized as shown below.

Hypothesis 7: Business competitiveness will have a positive potential to affect operation.

Potential Operational

The potential operation is defined as an ability of the firm to reach an organizational goal and continuous growth in business. According to Baney (1991) indicated that if a firm can successfully prevent latent competitors from copying and simultaneously executing the same operating value and continues business operation, the firm can be considered as having a competitive advantage and potential operation (Chuang and Chuang, 2015). The degree of potential operation can measure by both financial indicators and non-financial indicators. Similarly, Hult et al. (2004) argued that strengthening their organization innovativeness and business competitiveness assists the organization to reach the organization's goal and superior business performance. In their study, Hult et al., (2004) found that organizational innovativeness to be important positively affect firm performance in term profitability, growth in sales and market share.

Moderating Effect

Market Turbulence

Market turbulence refers to the rate of change in customer preferences in an industry (Jaworskiand Kohli, 1993). Market turbulence reflects the degree of change in customer preferences for products in an industry and it is a major source of environmental turbulence. An organization must clear understanding of their customers need and want by monitoring and analyze the industry environment (Hanvanich et al., 2006; Hult et al., 2004; Santos-Vijandeand Alvarez-Gonzalez, 2007).

According to the theoretical perspectives, market turbulence may moderate the effect of organization innovativeness on business competitiveness. Changing customer demands require that firms rely on creativity to continuously modify their products and services and to adjust their operations (Tsai and Yang, 2013). Innovative organizations are likely to develop new product and service to exploit rapidly changing customer demands and to capture new product-market niches. Under the conditions of high market turbulence, a firm's innovativeness is particularly important to satisfy the evolving needs of customers (Santos-Vijandeand Alvarez-Gonzalez, 2007). Innovativeness enables firms to combine and reconfigure their intangible and tangible assets in new ways and thereby build the capabilities that they can use to neutralize threats and exploit opportunities in turbulent markets (Tsai and Yang, 2013). In sum, Organizations with high innovativeness can take better opportunities and advantage of rapidly change, customer needs, create new solutions to customer problems, thus, organization innovativeness may produce greater business competitive, Therefore, the aforementioned relationships are hypothesized as shown below.

Hypothesis 6: Market turbulence has a positive moderating effect on the relationship (a) product innovativeness (b) process innovativeness and business competitiveness.

Competitive Intensity

Competitive intensity refers to the degree of market competition faced by a firm (Tsai and Hsu, 2014; Jaworskiand Kohli, 1993). Under conditions of greater environmental business change and is often viewed as a useful mechanism for responding to new competitive forces (Tsai and Hsu, 2014). Specifically, firms that operate in dynamic environments are likely to be more innovative, less risk-averse, and more proactive than those facing less uncertainty and fewer external pressures (Tsai and Yang, 2013). Environmental change captures the perceived instability of the firm's market due to ongoing changes, and for some firms, such dynamism brings new business opportunities (Chen et

al., 2015). In highly intensive competition, firms tend to pay more attention to their competitors, firm use their knowledge and invest in R&D, new product/service to market for continuous growth in business. Therefore, the aforementioned relationships are hypothesized as shown below.

Hypothesis 8: Competitive intensity has a positive moderating effect on the relationship with (a) knowledge creation (b) knowledge store/retrieve (c) knowledge transfer (d) knowledge transfer and potential operation.

Research Method

Data Collection

The population and sample are the 355 electrics and electronics businesses in Thailand. A mail survey procedure via the questionnaire was used for data collection. The key participants in this study were managers or general managers. The questionnaire was sent to 355 general managers 'electrics and electronics businesses. With regard to the questionnaire mailing, 20 surveys were undeliverable because some firms were moved to the unknown locations. The valid mailing was 335 surveys, from which 108 responses were received. Of the surveys completed, only 104 were usable. The effective response rate was approximately 30.04%. According to Aaker, Kumar and Day (2001), the response rate for a mail survey, without an appropriate follow-up procedure, is greater than 20% is considered acceptable.

Variables measurement

This research employs questionnaires as the instrument for collecting data. The questionnaire design was developed from a wide review of the literatures, reviewed by academic improved and chosen the best possible scale of measure.

Dependent Variable

The potential operation is the ability of a firm to reach the organizational goal and continuous growth in business, a continuous incremental growth which focuses on both profit and non-profit success. The measure is created as a new scale with 5 items and anchored by 5-point Likert scale developed from definition and literature review.

Independent Variable

The main construct of this research is knowledge management, organization innovativeness business competitiveness worth of a firm's resources that leading to potential operation. This variable measurement depends on its definition of which construct are briefly explained.

Knowledge management is a systematic process and activities for acquiring, organizing, and communicating both tacit and explicit knowledge of employees so that other employees may make use of it to be more effective and productive in their work comprise four aspects. The measure is created as a new scale with 5 items and anchored by 5-point Likert scale developed from Alavi and Leidner (2001).

Knowledge creation activities for developing new content or replacing existing content within the interactions of tacit and explicit knowledge

Knowledge store/retrieve activities for obtaining knowledge inside and outside firms and coding it.

Knowledge transfer activities transfer of knowledge between individuals, from individuals to groups, between groups, across groups, and from groups to a firm.

Knowledge application the effective application of knowledge that reduces costs, improves productivity, generate new product and new service.

Organizational innovativeness is the organization's overall innovative capability of introducing new products to the market, or opening up new markets, through combining strategic orientation with innovative behavior and improves business process. The measure is created as a new scale with 5 items and anchored by 5-point Likert scale adapted from Wang and Ahmed (2004).

Business competitiveness is the capability to provide product and services in the same or more efficient way than a competitor does in business. The measure is created as a new scale with 5 items and anchored by 5-point Likert scale.

Modulator variables

Competitive intensity is the degree of market competition faced by a firm. The measure is created as a new scale with 5 items and anchored by 5-point Likert scale adapted from Tsai and Hsu, (2014); Jaworski and Kohli, (1993).

Market turbulence is the rate of change in customer preferences in an industry. The measure is created as a new scale with 5 items and anchored by 5-point Likert scale adapted from Tsai and Hsu, (2014); Jaworski and Kohli, (1993).

Validity and reliability

Table 1 presents the results factor loadings of each construct that presents a value higher than 0.4 which is the cut-off point as recommended by Nunnally and Bernstein (1994) which is accepted. In addition, Cronbach's Alpha coefficient is 0.785 - 0.957 as being greater than 0.70 the cut-off point recommends by Nunnally and Bernstein (1994). Thus, there is internal consistency of the measures used in this research can be considered good for all variables.

Table 1: Measurement and validation

Variables	Factor Loadings	Cronbach's Alpha
Knowledge creation (KM1)	0.704 - 0.871	0.938
Knowledge store/retrieve (KM2)	0.808 - 0.865	0.932
Knowledge transfer (KM3)	0.805 - 0.940	0.957
Knowledge application (KM4)	0.924 - 0.951	0.926
Product innovativeness (INOP)	0.748 - 0.759	0.812
Process innovativeness (INOC)	0.744 - 0.830	0.847
Business competitiveness (BC)	0.763 - 0.881	0.894
Potential operation (PO)	0.898 - 0.959	0.940
Competitive intensity (CI)	0.802 - 0.869	0.785
Market turbulence (MT)	0.873 - 0.945	0.893

3.4 Statistic Technique

Regression analysis was employed to analyze the relationship between a dependent variable and independent variable. The Ordinary Least Squares (OLS) regression analysis is used to test the hypothesized. From the hypotheses and conceptual models, the following six equation models are proposed:

$$\begin{aligned} \text{Equation 1: INPO} &= \beta_0 + \beta_1 \text{KM1} + \beta_2 \text{KM2} + \beta_3 \text{KM3} + \beta_4 \text{KM4} + \beta_5 \text{FSI} + \beta_6 \text{FC} + \varepsilon_1 \\ \text{Equation 2: INOC} &= \beta_0 + \beta_7 \text{KM1} + \beta_8 \text{KM2} + \beta_9 \text{KM3} + \beta_{10} \text{KM4} + \beta_{11} \text{FSI} + \beta_{12} \text{FC} + \varepsilon_2 \\ \text{Equation 3: PO} &= \beta_0 + \beta_{13} \text{KM1} + \beta_{14} \text{KM2} + \beta_{15} \text{KM3} + \beta_{16} \text{KM4} + \beta_{17} \text{FSI} + \\ &\beta_{18} \text{FC} + \varepsilon_3 \\ \text{Equation 4: PO} &= \beta_0 + \beta_{19} \text{KM1} + \beta_{20} \text{KM2} + \beta_{21} \text{KM3} + \beta_{22} \text{KM4} + \beta_{23} \text{CI} + \\ &\beta_{24} \text{KM1} * \text{CI} + \beta_{25} \text{KM2} * \text{CI} + \beta_{26} \text{KM3} * \text{CI} + \beta_{27} \text{KM4} * \text{CI} + \\ &\beta_{28} \text{FSI} + \beta_{29} \text{FC} + \varepsilon_4 \\ \text{Equation 5: BC} &= \beta_0 + \beta_{30} \text{INOP} + \beta_{31} \text{INOC} + \beta_{33} \text{FSI} + \beta_{34} \text{FC} + \varepsilon_5 \\ \text{Equation 6: BC} &= \beta_0 + \beta_{35} \text{INOP} + \beta_{36} \text{INOC} + \beta_{37} \text{MK} + \beta_{38} \text{INOP} * \text{MK} + \\ &\beta_{39} \text{INOC} * \text{MK} + \beta_{40} \text{FSI} + \beta_{41} \text{FC} + \varepsilon_6 \\ \text{Equation 7: PO} &= \beta_0 + \beta_{42} \text{BC} + \beta_{43} \text{FSI} + \beta_{44} \text{FC} + \varepsilon_7 \end{aligned}$$

Where, KM1 is knowledge creation, KM2 is knowledge store/retrieve, KM3 is knowledge transfer, KM4 is knowledge application, INOP is product innovativeness, INOC is processed

innovativeness, BC is business competitiveness, PO is potential operational, CI is competitive intensity, MK is market turbulence, β_i is regression coefficients, ε_i is the error term.

4. Result and Discussion

Table 2 the descriptive statistics and correlation matrix for all variables is presented. With respect to potential problems relating to multicollinearity, variance inflation factors (VIF) were used to provide information on the extent to which non-orthogonality among independent variables inflates standard errors. The VIFs range from 2.00 - 3.90, well below the cut-off value of 10 as recommended by Hair et al., (2006), meaning the independent variables are not correlated with each other. Therefore, there are no substantial multicollinearity problems encountered in this study.

Table 2: Descriptive statistics and correlation matrix

	KM1	KM2	KM3	KM4	INOP	INOC	BC	PO	CI	MK
Mean	3.45	3.62	3.56	3.75	3.69	3.82	3.42	3.17	3.61	3.82
S.D.	0.89	0.93	0.98	0.84	0.79	0.77	0.77	0.72	0.74	0.68
KM1										
KM2	.86**									
KM3	.54**	.59**								
KM4	.41**	.49**	.72**							
INOP	.62**	.62**	.67**	.43**						
INOC	.53**	.51**	.67**	.24**	.77***					
BC	.40**	.52**	.59**	.40**	.66***	.41***				
PO	.48**	.20**	.62**	.42**	.65***	.77***	.52**			
CI	.27**	.23**	.29**	.20**	.46***	.51***	.66**	.73**		
MK	.29**	.23**	.30**	.19**	.61***	.73***	.26**	.21**	.37**	

** p < 0.05, *** p < 0.01

Table 3: Results of OLS regression analysis I

Independent variables	Models			
	1:INOP	2:INOC	3:PO	4:PO
KM1	0.27 (0.17)	0.17 (0.17)	0.07(0.19)	0.12 (0.22)
KM2	-0.11 (0.15)	-0.14 (0.15)	0.05 (0.17)	0.02 (0.20)
KM3	-0.10 (0.17)	0.32* (0.17)	0.12 (0.19)	0.11 (0.19)
KM4	0.69*** (0.80)	0.48*** (0.09)	0.48*** (0.09)	0.46*** (0.10)
CI				0.10 (0.09)
KM1*CI				-0.11 (0.25)
KM2*CI				-0.10 (0.28)
KM3*CI				0.15 (0.19)
KM4*CI				0.16 (0.11)
Adjusted R ²	0.51	0.50	0.40	0.39

*p < .10, ** p < .05, *** p < .01;

^aBeta coefficients with standard error is in parenthesis.

Table 3 presents the results of OLS regression of hypotheses 1a-4a,1b-4b, and hypotheses 1c-4c. The results of relationships among the four dimensions of knowledge management: creation, store/retrieve, transfer and application. Here, model 1 and model 2 knowledge transfer has a significant positive influence on process innovativeness ($\beta_9 = 0.32$, $p < 0.10$) while, knowledge application has a significant positive influence on product innovativeness and process innovativeness ($\beta_4 = 0.69$, $p < 0.01$; $\beta_{10} = 0.48$, $p < 0.01$). Thus, hypotheses 1a, 1b, 2b 2b and 3a are not supported, while 3b, 4a, 4b are supported. Next, model 3 knowledge application is significant to potential operation ($\beta_{16} = 0.48$, $p < 0.01$). Thus, hypotheses 1c, 2c, 3c are not supported, only hypotheses 4c is supported. Likewise, Lee at al., (2013) who found that knowledge application is useful for promoting organization innovativeness, allows organization expertise and used knowledge to be translated into new products or new process. While, knowledge creates and knowledge, retrieve/store not significant to organization innovativeness it might be firm's not able to use to create and retrieve knowledge stage. Next, in model 4 competitive intensity does not moderate relationship between knowledge management: creation, store/retrieve, transfer, application and potential operation statistical are not significant. Thus, hypotheses 8a, 8b, 8c and 8d are not supported. ($\beta_{13} = -0.11$, $p > 0.10$; $\beta_{14} = -0.10$, $p > 0.10$; $\beta_{15} = 0.15$, $p > 0.10$; $\beta_{16} = 0.16$, $p > 0.10$). The result of this study is contradictory to Tsai and Hsu (2014) were found complete intensity significant to new product performance. This result implied that competitive forces from competitors and environment change not significant enough to modulated relationship.

Table 4: Results of OLS regression analysisII

Independent Variables	Model	
	5:BC	6:BC
INOP	0.27*** (0.12)	0.34** (0.11)
INOC	0.49*** (0.12)	0.51*** (0.11)
MK		-0.19** (0.81)
INOP*MK		0.08 (0.14)
INOC*MK		0.15 (0.13)
Adjusted R ²	0.50	0.59

* $p < .10$, ** $p < .05$, *** $p < .01$;

^aBeta coefficients with standard error is in parenthesis.

Table 4 presents the relationship organizational innovativeness and business competitiveness, the results of model 5 shown product innovativeness significant positive effect to business competitiveness ($\beta_{30} = 0.27$, $p < 0.05$) likewise process innovativeness significant positive effect to business competitive ($\beta_{31} = 0.49$, $p < 0.01$). Thus, hypotheses 5a, 5b are supported. According to Lee at all., (20013) organization innovativeness has received to be the key to securing a sustainable competitive in the marketplace. Next, model 6 market turbulence modulated the relationship organizational innovativeness: product innovativeness; process innovativeness and business competitiveness the results show that market turbulence does not moderate affect the relationship ($\beta_{38} = 0.08$, $p > 0.10$; $\beta_{39} = 0.15$, $p > 0.10$). Thus, hypotheses 6a, b are not supported. The result of this study is consistent to Tsai and Yang (2013) were found that positive relationship of firm innovativeness and business performance does not exist in the context of low market turbulence.

Table 5: Results from OLS regression analysisIII

	Model
Independent Variables	7:PO
BC	0.60*** (0.08)
Adjusted R ²	0.38

*** p <.01;

^aBeta coefficients with standard error is in parenthesis.

Table 5 present model 7 business competitiveness has a significant positive influence on the potential operation. Thus, hypotheses 7 is supported. ($\beta_{42} = 0.60$, $p < 0.01$). According to Barney (1991) indicated that if a firm can successfully prevent latent competitors from copying and simultaneously executing the same operating value and continues business operation, the firm can be considered as having competitive advantage, reach organizational goal and continuous growth in business.

Contributions

Theoretical Contribution

This research showed that knowledge management: knowledge transfer, and knowledge application are contributing the factor of product innovativeness, process innovativeness and potential operation. From this research, it can conclude that firm with knowledge transfer and knowledge application will improve business competitiveness thought organization innovativeness. Overall the finding conform to the literature resource-based view of the firm (RBV) (Wernefelt, 1984; Barney, 1991; Tsai and Yang, 2013) and knowledge-based view of the firm (KBV) (Grant, 1991; Hoskisson et al., 1999; Nonaka, 1994) as a basis for the competitive advantage.

Managerial Contribution

This research results have managerial implications for both practitioners and executive. The result and help managers understand the importance of knowledge management that makes firms meet organization innovativeness, business competitiveness and potential operation. The empirical result indicates that knowledge transfer, knowledge application can enhance the product innovativeness and process innovativeness, and potential operation. Therefore, an organization should pay attention to and emphasizing on knowledge transfer and knowledge application that are appropriate with the operational activities to attain success toward their goals.

Conclusion

This research is to test the relationships among knowledge management to organizational innovativeness, business competitiveness and potential operation via competitive intensity and market turbulence as a moderator. Data were collected from 104 managers of electric and electronics businesses in Thailand by using a questionnaire as the research instrument. This research has shown that the dimensions of knowledge management: knowledge transfer affect product innovativeness and knowledge application affect product, process innovativeness, and potential operation. While, competitive intensity and market turbulence not shown moderator effect.

Limitation and suggestion for future research

Although this research results have theoretical and managerial implications for researcher and executives, respectively, some a limiting factor in this study may be a sample size. While it was adequate to test a hypothesized effect, it may not have been adequate to detect the influence of the knowledge management process dimensions. A large sample size would offer more statistical power to detect relationships. Future research should continue to examine knowledge management with a new type of business such as hotel business. The second limitation of this research using of survey questionnaire it may lack of respondent awareness and response thus, future research may survey by field observations and interview with the full-time managers.

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