

THE EFFECT OF KNOWLEDGE MANAGEMENT ON THE STRATEGIC MANAGEMENT PROCESS MEDIATED BY COMPETITIVE INTELLIGENCE IN THE SMALL BUSINESS COMPANY

Didi Sundiman

Department of Management, Universitas Universal, Batam, Indonesia
Email: sundiman.didi@gmail.com

Abstract

The purpose of this study is to discuss the synergic and separate use of knowledge management and competitive intelligence in stage of strategic management process. This study presents two independent variables (knowledge management and competitive intelligence) and one dependent variable (strategic management process). 145 samples from Indonesia small businesses considered valid, thereby indicating 88.41% validity rate. The results show that the proposed variable, Knowledge management and competitive intelligence significantly influences strategic management process from the perspective of the small business in West Indonesia. This result implies a lack of mediation effect presented by the competitive intelligence. This finding clarifies the research question that knowledge management and competitive intelligence are associated with strategic management process.

Keywords: Small business, Indonesia, knowledge management, strategic management, competitive intelligence.

Introduction

Competition in the digital age brings organizations to be able to see the patterns of competition that build faster. The digital era provides an opportunity for organizations to explore their resources more efficiently and effectively. Excellence in the field of technology brings many facilities for organizations to gather a variety of information related to their business from internal or external organizations. Technology and knowledge in organization support the process of efficiency of time and other resources within the organization (Hung, Lien, Fang, & McLean, 2010; Zack, McKeen, & Singh, 2009). Organizations with knowledge mastery capabilities will have an advantage in resource management processes (Bogza & Zaharie, 2008; Nonaka & Takeuchi, 1995; Sook-Ling, Ismail, & Yee-Yen, 2015).

Knowledge is a very important part and should be involved in any decision making of the organization's strategy (Bartes, 2014; Giebels, van Buuren, & Edelenbos, 2015; Ma, 1999). Knowledge-based strategy decisions have demonstrated a significant role for improving the quality of organizational management (Chen & Huang, 2009; Sundiman & Idrus, 2015; Zack *et al.*, 2009). An organizational strategy formed from good knowledge management provides a great deal of evidence of success in more effective resource management within the organization (Sook-Ling *et al.*, 2015).

Small and medium enterprises (SMEs) have enormous challenges to survive and thrive in the digital age (Battisti, Deakins, & Perry, 2013; Cerchione, Esposito, & Spadaro, 2015; Sundiman, 2017; Verreynne & Meyer, 2010). Competition requires organizations to be able to see the possibilities in the marketplace. Strengths, weaknesses, opportunities and threat must be able accurately analyzed by the organization. Many data show how weak the ability of small businesses in creating their business advantage in the face of very rapid changes (Battisti *et al.*, 2013; Roxas, Battisti, & Deakins, 2013; Verreynne & Meyer, 2010). Resilient small businesses are those who can read and respond to market movements quickly. Small businesses capable of reading market needs will be able to respond to provide products needed by the market (Avlonitis & Salavou, 2007; March-Chordà, Gunasekaran, & Lloria-Aramburo, 2002; Adeniran, 2012).

Many studies show how small businesses lack the ability to manage knowledge for their organizations (Nunes, Annansingh, Eaglestone, & Wakefield, 2006; Desouza & Awazu, 2006; Harris, 2009; Purcarea, del Mar Benavides Espinosa, & Apetrei, 2013). Researchers also show how weak the ability of small businesses to collect information and data from their environment. Weaknesses in the process of collecting data and information is causing the weakness of the company's strategic decision-making process in responding to the market (Chan, Huff, Barclay, & Cope-

land 1997; Intezari & Gressel, 2017; Manoharan, Melitski, & Bromberg, 2015; Ogiela, 2015).

Several studies in developing countries also show how the important role of small businesses in the economy (Abor & Quartey, 2010; Jamali, Lund-Thomsen, & Jeppesen, 2017; Tambunan, 2008; Teima *et al.*, 2010). The ability and flexibility that small businesses have in supporting the adaptation process in every environmental change quickly, so that small businesses can make the right decisions (Pak, Ra, & Lee, 2015; Spithoven, Vanhaverbeke, & Roijakkers, 2013; Villa & Taurino, 2017; Whyman & Petrescu, 2015). The mechanism of small businesses in the process of collecting data and information and then processing the existing data and information into this knowledge becomes an interesting research topic studied, especially in developing countries (Linton & Solomon, 2017; Nguyen, Newby, & Macaulay, 2015; Street & Meister, 2004; Sundiman, Mursidi, & Putra, 2016; Wong & Aspinwall, 2004). This study attempts to answer the questions of how small businesses develop their processing mechanisms and their surrounding environmental information, how small businesses process existing knowledge, and its influence in organizational strategy management processes.

Knowledge Management in Organizations

The definition of organizational resources has changed over the last few decades. Finance and physical material decades ago are the main resources, but the last one to two decades, knowledge has become one of the major resources for the organization (Nonaka & Takeuchi, 1995; Shujahat *et al.*, 2017; Sundiman *et al.*, 2016; Zack *et al.*, 2009). Nonaka divides knowledge into two large groups of tacit and explicit knowledge (Nonaka, 1994; Nonaka & Takeuchi, 1995). The management of these two knowledge groups requires a different pattern. The organization's ability to create, collect, store, share and apply knowledge is an important part of the organization's current success. Research shows how the important role of good knowledge management contributes significantly to improving organizational performance (Cohen & Olsen, 2015; Donate & dePablo, 2015; Reich, Gemino, & Sauer, 2014).

The efficiency of knowledge management provides a direct impact on the efficiency of other resource management (Cohen & Olsen, 2015; Fidel, Schlesinger, & Cervera, 2015; Wipawayangkool & Teng, 2016a). The quality of knowledge management also determines how the quality of human resource management in general (Figueiredo, Pais, Monteiro,

& Mónico, 2016; Sundiman, 2017). Good knowledge management supports the organization in reading every environmental change appropriately (Giebels *et al.*, 2015; Revilla, Prieto, & Prado, 2010). This is certainly very beneficial to the organization in the face of the rapid changes that occur with adaptation.

Upright knowledge management processes will create competitive advantage in the organization (Danskin, Englis, Solomon, Goldsmith, & Davey, 2005; Davenport & Prusak, 1997; Jennex, 2008; Ndlela & DuToit, 2001; Newman, 1997; Nonaka & Takeuchi, 1995; Rahimli, 2012; Shujahat *et al.*, 2017). These competitive advantages make organizations able to deal with any emerging competition to satisfy consumers. Organizations continue to create new knowledge to read patterns of market changes (Darroch & McNaughton, 2003; Jamil, 2013; Kamyra, Ntayi, & Ahiauzu, 2010; Teece, Pisano, & Shuen, 1997; Tidd, 2003). New knowledge of market conditions provides a clear picture for the organization in every decision of their decisions. The knowledge that been created within the organization must be well stored. The process of storing knowledge within organizations supports the sustainability of knowledge management processes within organizations (Bogza & Zaharie, 2008; Cvitanovic, Hobday, vanKerkhoff, & Marshall, 2015). The process of sharing knowledge in an organization is a phase in which the stored knowledge must be immediately distributed to various parties as a supporter of the decision-making process. The process of sharing quality knowledge supports a fast and timely decision-making process (Boden, Avram, Bannon, & Wulf, 2012; Ford, Myrden, & Jones, 2015; Liang, Liu, & Wu, 2008; Nesheim & Gressgård, 2014; Vajjhala, 2013; Werner, Dickson, & Hyde, 2015). The latest knowledge applications in organizational operations and the latest decisive success of policy execution in today's organizations (Cerchione *et al.*, 2015; Kraaijenbrink, 2012; Liao, 2003; Plessis, 2007; Revilla *et al.*, 2010).

Competitive Intelligence within the Organization

Organizations must be able to collect data and information quickly and accurately. Rapid changes due to the support of digital technology make the flow of data and information undergoes a very dynamic change (Intezari & Gressel, 2017; Sook-Ling *et al.*, 2015). The business operational pattern is changing very fast, it is driving the dynamic pattern of business competition (Verreynne & Meyer, 2010). Organizations must be able to collect the best data and information from highly dynamic markets. Each organization continues to develop their ability to capture

information and data circulating in the market. With the help of information technology and the latest management pattern, the organization builds the best competitive intelligence to address every dynamic change in the marketplace (Jamil, 2013; Marin & Poulter, 2004; Pargaonkar, 2016; Vriens, 2004).

Quality of data and information becomes very important in determining the organization's strategic decision-making process (Malakooti, 2012; Oppenheimer & Kelso, 2015). Many distortions happen in dynamic markets. Organizations must be able to sort and select good quality data according to the organization's need to cope with market changes (Bogza & Zaharie, 2008). Technological developments and the progress of organizational governance generate large amounts of data and information. Not all data and information is useful for organizational operations. The organization's ability to select and retrieve appropriate data and information has a significant positive impact on the organization's strategy development process (Drnevich & Croson, 2013; Zammuto, Griffith, Majchrzak, Dougherty, & Faraj, 2007). The data and information gathered by the organization processed further in order to generate meaningful abusing for the organization. Any policy that taken by the organization using the basic results of data and information (Vriens, 2004; Zammuto *et al.*, 2007).

Organizational intelligence in reading environmental conditions becomes an important part of strategic policymaking process (Akgün, Byrne, & Keskin, 2007; Burton, Geishecker, Hostmann, Friedman, & Newman, 2006; Davenport, 2010; Miner, 2002). Organizations that have competitive intelligence and use their optimally will be better able to read every opportunity and challenge that will arise. The rapidly changing market competition forces organizations to continue to improve their competitive intelligence (April & Bessa, 2006; Calof & Wright, 2008; Calof & Smith, 2010; Ettore, 1995; Jamil, 2013; Petrisor & Strain, 2013; Rouach & Santi, 2001; Shujahat *et al.*, 2017; Trim & Lee, 2008).

The organization analyzes every data and information that goes in accurately. The analysis process usually done by re-filtering data and information (Zammuto *et al.*, 2007). Screening results used in the next analysis process to obtain useful information as a decision-making guide. The competitive intelligence in the organization includes the organizational ability to collect and then analyze the data and information obtained (Wolf, Just, & Zilberman, 2001; Zammuto *et al.*, 2007). As part of the competitive intelligence, the analysis process is an ongoing process that is not separate after the process of collecting data and information. Organizations capable of managing this

sustainable process demonstrate significantly the benefits of operational quality improvement.

The next important step in competitive intelligence is the process of using data and information that has been collected and analyzed before. The accuracy of the process of applying data and information in the organization's operations will maximize the process of utilizing all of the organization's resources (Bergeron & Hiller, 2005; Ettore, 1995; Håkansson & Nelke, 2015; Marin & Poulter, 2004; Rouach & Santi, 2001; Vriens, 2004). The efficiency of resources from the utilization of competitive intelligence can improve the operational efficiency of the organization (Bose, 2008; Marin & Poulter, 2004; Rouach & Santi, 2001).

Knowledge Management and Competitive Intelligence in Organizational Strategic Management

Organizations continue to refine their strategy policies. Rapid market changes due to globalization and technological advances encourage organizations to be able to adapt quickly (Cvitanovic *et al.*, 2015). The strategy policy will determine whether the organization is on the right track to face any competition. Many studies show a significant role of knowledge management in the organization's strategic policy determination process (Nunes *et al.*, 2006; Cohen & Olsen, 2015; Shujahat *et al.*, 2017; Teece *et al.*, 1997; Wipawayangkool & Teng, 2016b). Organizational strategic policies based on knowledge management show a significant positive role (Bollinger & Smith, 2001; Donate & dePablo, 2015; Roxas *et al.*, 2013; Teece *et al.*, 1997). The more qualified knowledge management in the organization will support the policy-making process and implementation of organizational strategies that support performance improvement (Birasnav, 2014; Zack *et al.*, 2009). Integration of knowledge management in the policy making process of organizational strategy provides the ability for the organization to evaluate ongoing strategies and improve organizational strategy in the future. Previous studies show a significant role of knowledge management in the process of developing and enhancing the reliability of organizational strategy in the face of dynamic markets (Birasnav, 2014; Reich *et al.*, 2014; Zack *et al.*, 2009), so that we can form a research hypothesis that,

H₁: Knowledge management in the organization significantly positively influences the organization's strategy management process.

Whereas competitive intelligence can forecast potential problems in external environment and

provide their solutions (Bergeron & Hiller, 2005; Calof & Wright, 2008; Ettorre, 1995; Shujahat *et al.*, 2017). When organizations are able properly account for the various market possibilities, the organization is able to anticipate with various steps to deal with dynamic change. It also offers advantages in the strategic planning (Bartes, 2014; Calof, Richards, & Smith, 2015; Rouach & Santi, 2001). Therefore, these two evidences combined in the separate management and strategic synergic way in the strategic management process (April & Bessa, 2006). Knowledge management and competitive intelligence have crucial implications and impact on mission of the organization and vice versa. An organization aligns its knowledge management function and strategy with its vision and mission. Thus in this way they each drive (Akhter, 2003; Halawi, Aronson, & Mccarthy, 2005; Liebowitz, 2001; Oztemel & Arslankaya, 2012; Snyman & Kruger, 2004). This also referred to in the case of competitive intelligence, which drives the mission of the organization.

Previous studies have demonstrated the significant role of competitive intelligence in the process of developing and enhancing the reliability of organizational strategy in the face of any market changes, so that we can form a research hypothesis,

H₂: Competitive intelligence significantly positively affects the strategic management process within the organization.

H₃: Competitive intelligence mediates the indirect effect of knowledge management on the improvement of strategic management poses of organizations.

Research Method

Research Model

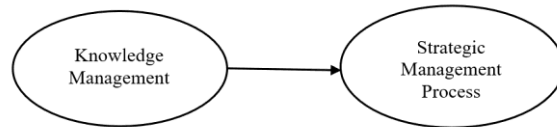
Previous studies have become the basis for the development of this research model. Figure 1. Illustrates the research model of the literature in general and research arguments in particular.

This study presents two independent variables (i.e., knowledge management and competitive intelligence) and one dependent variable (strategic management process). Competitive intelligence is the mediator between knowledge management and strategic management process. Details described as follows.

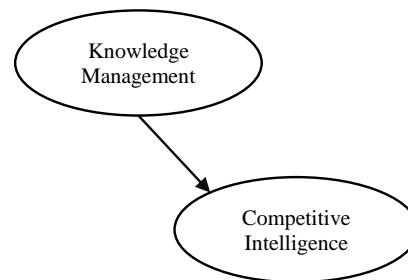
Measure and Sample

The questionnaire designed based on the literature and research arguments as the data collection instrument (see Table 2. in extracted form). This section describes the scales used to measure knowledge

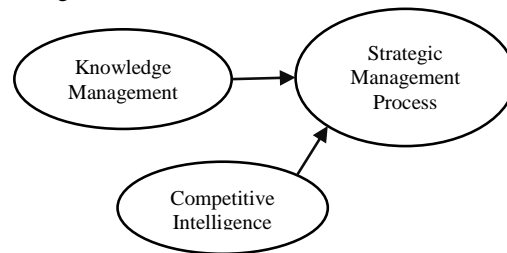
management processes, competitive intelligence and strategic management process. All the variables measured on six-point Likert scales ranging from one (1) - strongly disagree to six (6) - strongly agree.



Model 1a. The effect of knowledge management on strategic management process



Model 1b. The effect of knowledge management on competitive intelligence



Model 2. Mediation effect of competitive intelligence between knowledge management and strategic management process

Figure 1. Research model

Knowledge management processes, the scale of knowledge management made by Gold, Malhotra, & Segars (2001) and Zaim, Tatoglu, & Zaim (2007). Items for knowledge management built after the literature review and extensive discussions with academics and chief executives during the pre-testing phase of the questionnaire development. Competitive intelligence, this scale was adapted from Bose (2008) and Calof and Wright (2008) scale, and includes 3 (three) items to measure the variable. Strategic management process, 3 (three) items indicators used to measure strategic management process, previous strategy research has used similar indirect measures of firm strategic management process (Shujahat *et al.*, 2017). The respondents asked to indicate how the strategic management process was in their organization. A pilot test with multiple individuals conducted to understandability and readability. Eleven (11) items developed to describe the variables in the questionnaire.

The basic information of the subjects includes gender, age, company type (e.g., service industry), CEO / manager of education, and job seniority (years). The sample targeted in the small business in West of Indonesia (Sumatera and Java Island) which experienced in using social network. The current study did not limit the top N companies due to the concerns of wide range of creation in product, process, and management. Therefore, an online questionnaire was developed and released in online communities (e.g., E-mail, Facebook and LinkedIn). A small business for manufacturing, retailing and service industries.

Result and Discussion

The number of questionnaires that successfully distributed in this study were 220 questionnaires. 164 questionnaires were collected and 145 were considered valid, thereby indicating 88.41% validity rate. Any returned questionnaire considered invalid if it is incomplete, not within the domains, or comprising a single answer.

Descriptive Statistics

Descriptive statistic data indicate small medium enterprises (SMEs) manager dominated by male gender as much as 68.96% with almost equal education level between high-educated small businesses managers and small businesses low educated managers. Table 1 presents the sample statistics.

Table 1
Descriptive Statistics

Number of valid sample: 145

Basic data		Samples	Percentage
Gender of the coordinator	Male	100	68.96%
	Female	45	31.04%
Age of the small business (years)	Age ≤ 5	70	48.28%
	6 ≤ Age ≤ 10	41	28.28%
	11 ≤ Age ≤ 20	24	16.55%
	20 ≤ Age	10	6.90%
Company types	Manufacturing	19	13.10%
	Service	45	31.03%
	Retailing	81	55.86%
Education of the coordinator	Higher education	86	59.31%
	Non higher education	59	40.69%

Other descriptive data do not show significant things in the samples taken.

Reliability and Factor Analysis

Cronbach's Alpha used to confirm the internal consistency for the variables.

Table 2
Reliability and Factor Analyses Results

Question items	Item to total	Cronbach's α
KM		
Our business continues to create new knowledge in the future	0.814	0.894
Our business is committed to sharing knowledge equally to all parts	0.884	
Our business has facilities to support knowledge sharing process	0.868	
Our business is committed to applying new knowledge in daily operations	0.849	
Our business applies knowledge to solve every new problem that arises	0.781	
CI		
Our organization collects data and information regarding market conditions and competitors	0.900	0.886
Our organization analyzes data and information regarding market conditions and competition	0.914	
Our organization uses market-related data and information for decision-making	0.895	
SMP		
Our organization plans the strategy systematically	0.904	0.918
Our organization executes a strategy with commitment and consistency	0.942	
Our organization evaluates continuous improvement of strategy	0.934	

KM: Knowledge Management; CI: Competitive Intelligence; SMP: Strategic Management Process

Table 2 presents the results of the reliability and factor analyses. The Cronbach's Alpha value increases if any item that suited the criteria deleted. Exploratory factor analysis employed to derive the actual factors. In particular, the knowledge management, competitive intelligence and Strategic management process variables grouped into a single factor. The validity test results obtained satisfied the following requirements: (1) item loading above 0.35, which is not high but acceptable; (2) composite reliability (i.e., Cronbach's α) above 0.6.

Test Results

Table 3 presents the results of the hypothesis tests. In particular, the results show that the proposed variable (i.e., knowledge management) significantly

influences strategic management process from the perspective of the small business in West Indonesia (in Model (1)). Thus, H_1 ($t = 8.284$, $p = 0.000$) is supported. This finding indicates that knowledge management is associated with that of the strategic management process rule by the SME.

Table 3
Results of the Hypothesis Tests

		Strategic Management Process		Competitive Intelligence	
		Model (1)		Model (1b)	
Independent Knowledge Management	t	p -value	t	p -value	
	8.284	0.000	8.698	0.000	
R^2		0.324		0.346	
(H_1) supported					
Result for model (2)					
		Strategic Management Process			
		Model (2)			
Independent Knowledge Management	t		p -value		
	2.695		0.008		
Competitive Intelligence		10.622		0.000	
R^2				0.623	
(H_2) supported and (H_3) not supported					

Moreover, the effect of competitive intelligence on strategic management process is significant ($t = 8.698$, $p = 0.000$, $R^2 = 0.346$), H_2 are supported. However, when the mediator (i.e., structural exchange) is introduced into the model (Model (2)), the t value is reduced from 2.284 to 2.695 and R^2 is increased from 0.324 to 0.623, but its effect remains significant ($p = 0.008$). This result implies a lack of mediation effect presented by the competitive intelligence. Thus, H_3 not supported. This finding clarifies the research question that knowledge management and competitive intelligence are associated with strategic management process.

Conclusion and Implication

The current research confirms the significance of knowledge management, and competitive intelligence, have significant effect to strategic management process in small medium enterprises. However, this study does not confirm the significance of competitive intelligence as the mediator between knowledge management and strategic management process.

First, knowledge management has a positive and significant impact on the strategic management process (see Table 3). These results support the results of research from many researchers (Nunes *et al.*, 2006; Birasnav, 2014; Cohen & Olsen, 2015; Donate & dePablo, 2015; Shujahat *et al.*, 2017; Teece *et al.*, 1997; Wipawayangkool & Teng, 2016b; Zack *et al.*, 2009). Studies show a significant role of knowledge management in the organization's strategic policy determination process. Organizational strategic policies based on knowledge management show a significant positive role. Organizations continue to refine their strategy policies. Rapid market changes due to globalization and technological advances encourage organizations to be able to adapt quickly. The more qualified knowledge management in the organization will support the policy-making process and implementation of organizational strategies that support performance improvement. Integration of knowledge management in the policy making process of organizational strategy provides the ability for the organization to evaluate ongoing strategies and improve organizational strategy in the future. Previous studies show a significant role of knowledge management in the process of developing and enhancing the reliability of organizational strategy in the face of dynamic markets. The strategy policy will determine whether the organization is on the right track to face any competition.

Second, this research show that competitive intelligence significantly positively affects the strategic management process within the organization, as many studies have shown similar results (Bartes, 2014; Bergeron & Hiller, 2005; Calof & Wright, 2008; Calof *et al.*, 2015; Ettorre, 1995; Rouach & Santi, 2001; Shujahat *et al.*, 2017). Whereas competitive intelligence can forecast potential problems in external environment and provide their solutions. How organization collects data and information, how organization analyzes data and information regarding market conditions and competition and how organization uses market-related data and information for decision-making giving significant effect on how organization plans the strategy systematically, executes a strategy with commitment and consistency and evaluates continuous improvement of strategy. When organizations are able properly account for the various market possibilities, the organization is able to anticipate with various steps to deal with dynamic change. It also offers advantages in the strategic planning.

Finally, the knowledge management process in organizational competition mechanisms encourages every process of strategic management decision in

organization. On the one hand, competitive intelligence as an important part of the organization together with the KM process poses a significant positive impact on the quality of strategic management processes within the organization. The process in organization to create new knowledge in the future, commitment to sharing knowledge equally to all parts, the facilities to support knowledge sharing process significantly support organization to plans the strategy systematically. When organization application the new knowledge in daily operations to solve every new problem that arises will help organization to execute a strategy with commitment and consistency and evaluates continuous improvement of strategy better.

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