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BEST PRACTICES: SYNCHRONIZING THE CORPORATE CULTURE WITH THE SPIRIT OF INNOVATION, SUSTAINABILITY, AND GOOD GOVERNANCE

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PREFACE

Transformation into digitalization has taken over all aspects of business in year 2019. Success in converting to transformation requires careful co-operation, planning and participation. Over the years, we have seen a change in a role of traditional leadership workplace. Innovation and sustainability are becoming the driving engines for corporations to strive in the more complex globalized market. As businesses are moving across national and cultural borders, good corporate governance is then playing an important role to ensure the sustainability of the business.

With this current situation, The Business Management Program of Petra Christian University cooperation with The Business Management Program of Phuket Rajabhat University conducts the third international conference on management and entrepreneurship (the 3rd i-CoME) to address the issues on innovation, sustainability, and governance. This conference is made possible with the support of Jurnal Manajemen dan Kewirausahaan (Journal of Management & Entrepreneurship), an accredited scientific journal, and several other accredited journals. The conference will present six keynote speakers from six different countries such as USA, UK-China, Mexico, and India.

This conference is also calling for research articles and papers from scholars, researchers, and students from all over the world. There are six sub-themes with various topics covering on management and entrepreneurship that are ready to be explored and discussed. The conference will be a forum where fellow academics share experiences, exchange knowledge, work hand-in-hand, utilize a new technology, and find managerial solutions for a better business world. The detailed information is available in the i-CoME 2019 website: i-come.petra.ac.id.

Indonesia, August 9, 2019

Editor

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THE EFFECT OF ENTERPRISE RESOURCE PLANNING ON COMPETITIVE ADVANTAGE THROUGH SUPPLIER RELATIONSHIP MANAGEMENT

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ABSTRACT

This study examines the effect of enterprise resource planning (ERP) system on the competitive advantage with the mediating role of supplier relationship management. The study used 59 samples from the executive level of the export-oriented manufacturer in the region of East Java, Indonesia. Data collection used questionnaires designed with a five-point Likert scale. Data analysis used the partial least square technique with smartPLS software. The empirical study result revealed that the ERP system used by the corporate affects the improvement of the supplier relationship management significantly. The ERP system used by the company has a direct impact on strengthening its competitive advantage. Furthermore, supplier relationship management also affects the competitive advantage directly and significantly. To sum up, the ERP system significantly influences the competitive advantage, directly and indirectly, as indicated by the path coefficient of 0.865. A new finding suggests that supplier relationship management mediates the effect of ERP on a competitive advantage. These results provide a significant contribution to the supply chain theory and practice. The export-oriented manufacturer, therefore, may refer to this result in enhancing the competitive advantage.

Keywords: *Enterprise resource planning, competitive advantage, supplier relationship management.*

INTRODUCTION

In recent years, there has been an increasing interest in the role of supply chain management in enhancing the competitive advantage of an organization. The reason is that the organization should go international for either acquiring raw materials or selling their finished product. The supply chain management, consequently, plays an essential role in achieving superior competitive advantages in terms of lower cost, shorter lead-time, and higher quality. The supply chain management also becomes more complicated due to the broader coverage regarding the geographical location and the culture of the organization involved in the network. The export-oriented manufacturer domiciled in the region of East Java, Indonesia, are also facing the same constraint as they are looking for imported raw materials. In the context of the supply chain management, many studies suggested several factors which contributed to enhancing the competitive advantages of an organization such as the implementation of enterprise resource planning (ERP) system and the establishment of the supplier relationship management (SRM).

Many researchers have examined that ERP system has an impact on the competitive advantage (Abdelghaffar, 2012; Bin Che Rose, 2009; Egdair, Rajemi, & Nadarajan, 2015; Hidayat & Akhmad, 2016; Hsu & Chen, 2004; Li & Lin, 2006; Prasajo, 2015). The ERP system can provide integrated information and a more efficient administrative system for the company. ERP system enables the organization to integrate the related units in such a way that the process becomes more efficient and has a shorter lead-time and faster new products development than that carried out by the competitor. The studies also have been conducted over a different sector of industry and countries, and they have a conclusion in common that ERP creates and enhances the competitive advantage.

Other researchers also reveal that supplier relationship management (SRM) affects the competitive advantage of an organization (Cousineau, Lauer, & Peacock, 2004; Jap, 2001; Thatte, 2007). Those researchers indicate that SRM plays an essential role in cost reduction and creates a competitive advantage for the companies. The manufacturer enjoys the benefits from the relationship, such as having a shorter lead time, lower cost, and higher quality. Therefore, it is essential for a manufacturer to establish an excellent relationship with suppliers.

Furthermore, it is also found from the literature review that the ERP system also influences the SRM. The use of ERP in SRM can lower production costs and produce higher product quality. An appropriate relationship with suppliers supported by ERP systems will be highly helpful in improving the competitive advantage (Al-Abdallah, Abdallah, & Hamdan, 2014; Larson & Kulchitsky, 2000). All previous studies have primarily concentrated on the direct impact of the ERP system and SRM on the competitive advantage of an organization. However, to the best of the author's knowledge, there is no study presenting the mediating role of the SRM over ERP system and

competitive advantage relationship. This study is intended to fill this gap, i.e., to examine the influence of ERP on the competitive advantage with the mediating role of the SRM. This paper consequently raises four research questions as follows: first, whether ERP system affects competitive advantage; second, whether SRM influences competitive advantage; third, whether ERP system affects SRM; and fourth, whether SRM has a mediating effect on ERP system and competitive advantage relationship.

LITERATURE REVIEW AND HYPOTHESIS

ERP and Competitive Advantage

The use of ERP system aims to integrate business processes through the support of integrated computer information systems. This system allows companies to standardize the flow of management information. The ERP system used internet technology, which enables the integration of the internal information flows and business process as well as external information from customers and suppliers. In the case of large manufacturing companies, ERP implementation requires the integration of many short of data to allow quick and proper decision-making. Competitive advantage is defined as the application of the strategy that creates a superior value not owned by current competitors or potential competitors (Saeidi *et al.*, 2019). Other study defines the competitive advantages of an organization as the extent to which a company can create a superior sustainable position against its competitors (McGinnis & Vallopra, 1999). A company has a competitive advantage if the company implements the appropriate strategy that creates value that is not owned by anyone else, including its competitors (Clulow, Gerstman, & Barry, 2003). The indicators of competitive advantage (Li, Ragu-Nathan, Ragu-Nathan, & Subba Rao, 2006) consist of price, quality, delivery capability, product innovation, and time to market. The ERP system aims to integrate business processes through the support of an integrated computer information system (O'Brien, & Marakas, 2007). ERP uses internet technology to integrate information flows and internal business functions as well as information from customers and suppliers. The ERP system adoption by large manufacturing companies needs integration of work practices and information systems (Tarigan, Lianto & Basana, 2019). The ERP is measured in term of the accuracy of the information, quality of the information, easiness to use, easiness to understand, user satisfaction, frequent usage, and enhancement in overall efficiency (Jenatabadi, Hui, Ismail, Binti Mohd Satar, & bt Wan Mohamed Radzi, 2013).

Research by Egdair *et al.* (2015) proves that the ERP system affects the current organization performance in the Middle East and South Africa, notably Libya, where competitive advantage becomes one dimension of the organization performance. The other study conducted by Abdelghaffar, (2012) focuses on the success factors for ERP implementation in large organizations in Egypt which indicate that the implementation of the ERP system has a direct influence in increasing the competitive advantage. For the company which wants to create a competitive advantage; it is necessary to use the ERP system in the business process (Prasojo, 2015). According to Bin Che Rose (2009), an ERP system produces accurate information and can help companies adapt to existing changes and create competitive advantage. According to Hsu & Chen (2004), ERP systems can help improve overall business performance that results in a competitive advantage and increase long-term profitability. The first hypotheses, therefore, is proposed as follows:

H_1 : ERP system influence the competitive advantage

ERP and SRM

The use of ERP in SRM can lower production costs and produce higher product quality (Al-Abdallah *et al.*, 2014). An appropriate relationship with suppliers supported by ERP systems is highly helpful for export-oriented manufacturing. Supply chain practices may involve two or more partners from different countries, and they need proper information sharing among parties. This sharing of information is not affordable to implement without ERP in place. Reference (Yu, Yan, & Edwin Cheng, 2001) argues that the benefits of SRM depend on the extent to which the information is shared. Another research by (Larson & Kulchitsky, 2000) explains that lead-time, which is one of the dimensions of SRM, is influenced by the quality of information generated by the ERP. According to (Al-Abdallah *et al.*, 2014), the use of ERP in SRM can lower production costs and produce higher product quality. Based on this review, the second hypothesis is as follows:

H_2 : ERP system affects SRM

SRM and Competitive Advantage

SRM is a systematic process to monitor and access the capabilities of suppliers in supporting the company's overall business strategy, particularly in creating the value for the company. The company establishes the SRM for the reason of enhancing the efficiency of the process and enforcement of the company policy through the purchasing

strategy in cooperation with the supplier. SRM provides access to the supplier base to help companies improve the business value that ultimately enhances the company's competitiveness. SRM has long-term goals and short-term goals. Long-term goals include creating value for customers, increasing profits, improving the efficiency of production operations, and increasing markets (Williams, 2006). On the other hand, short-term goals include increasing productivity, reducing cycle times, and reducing inventories (Wisner & Tan, 2000). According to Al-Abdallah *et al.*, (2014), the SRM indicator is divided into five dimensions, namely: supplier quality improvement, supplier-based trust, production time reduction, supplier collaboration in new product development, and partnership or development with suppliers. SRM can also influence the competitive advantage of export companies. The firm needs to establish a proper relationship with suppliers. It is also supported by Cousineau *et al.* (2004) who mentioned that the relationship of cooperation between suppliers and companies could be a strategy for increasing the competitive advantage of a company. Thatte (2007) also explained that supplier relationships with companies create competitive advantages that result in profitability and differentiation for the company. Thus, the third hypothesis is as follow:

H₃: Supplier relationship management affects competitive advantage

The Mediating Role of SRM over the ERP System and Competitive Advantage Relationship

SRM allows both parties, buyer, and supplier, to cooperate in a mutually beneficial way. They gain benefits because they support each other in term of their respective goals. The cooperation between buyer and supplier need information sharing, which enables both parties to understand their partner requirement. As discussed previously, the ERP system supports the establishment of supplier relationship by connecting both sides to the same information, which means that the ERP system affects the SRM (Al-Abdallah *et al.*, 2014; Larson & Kulchitsky, 2000; Yu *et al.*, 2001). Similarly, SRM provides the benefit to a buyer in term of lower cost, better quality, and shorter time delivery, which at the end enhances a competitive advantage of the organization. By looking at these two relationships together, it can be concluded that ERP influences the SRM and subsequently affects the competitive advantage. Concerning this discussion, it can be postulated that SRM mediates the relationship between ERP system and competitive advantage. The following last hypotheses are proposed:

H₄: SRM mediates the effect of ERP on competitive advantage

RESEARCH METHOD

Sampling and Data Collection

The population of this study is 63 export-oriented manufacturers located in the region of East Java, Indonesia. Of the 63, 43 manufacturers are public or listed, while the rest, 20 firms, are private or unlisted. Those firms were interviewed by using a self-administered questionnaire, and each firm was represented by one respondent from top management levels, such as CEO or General Manager as they are considered to be the most knowledgeable persons of their firm. An interview and discussion were conducted with particular respondents when considered necessary. The questionnaire was designed using subjective assessment with a five-point Likert scale. From 63 firms, 59 have correctly completed the questionnaires representing a response rate of 93.6%. Data were analyzed using Partial least square (PLS) technique using smartPLS software ver.3.0 to analyze the data. PLS is an appropriate tool for analyzing the data mainly in the case of small sample size [21, 22] and limited theoretical knowledge (Moreno & Casillas, 2008).

Operational Definition of the Constructs

This study assesses three constructs using the definition proposed by previous researchers. The ERP measures the extent to which the system provides the information to the user. Seven indicators are used, i.e., 1) accuracy of information, 2) quality of information, 3) easiness to use, 4) frequency used to retrieve the information, and 5) satisfaction of the user in respect to the information obtained, 6) easiness to understand the information received, and 7) increased overall efficiency. SRM measures the extent to which the supplier gives benefits to the firm by assessing whether supplier: 1) participates in increasing productivity, 2) reduces the production cost, 3) believes the firm upon what has been promised; 4) delivers the part quickly, 5) engages in new product development, and 6) has a mutually beneficial long-term relationship. Finally, competitive advantage measures the competitiveness of the manufacturer by assessing the extent to which the firm: 1) provides products at competitive prices, 2) produces products with superior quality, 3) delivers products promptly, 4) introduces new products to the customer's needs, and 5) introduces new products faster than competitors.

FINDINGS

The first analysis is to assess the measurement model by evaluating the convergent and discriminant validity of each indicator and the reliability of the block indicators of each variable

Table 1
Measurement model assessment

Construct and Indicator	Factor loading	Cross loading			C/R	Remark	
		ERP	SRM	CA			
Enterprise Resource Planning (ERP)							
The accuracy of information (ERP1)	0.684		0.449	0.603			
Quality of information (ERP2)	0.712		0.511	0.639			
Easy to use (ERP3)	0.718		0.646	0.653			
Frequent usage (ERP4)	0.779		0.540	0.697	0.844	Valid and reliable	
The satisfaction of user (ERP5)	0.633		0.507	0.507			
Easy to understand (ERP6)	0.634		0.586	0.575			
Increase overall efficiency (ERP7)	0.886		0.682	0.694			
Supplier Relationship Management (SRM)							
Increase productivity (SRM1)	0.838	0.506		0.560			
Reduce the production cost (SRM2)	0.655	0.590		0.615			
Believe upon the manufacturer promise (SRM3)	0.682	0.611		0.575	0.885	Valid and reliable	
Deliver the order quickly (SRM4)	0.766	0.571		0.575			
Engage in new product development (SRM5)	0.702	0.544		0.572			
Competitive Advantage (CA)							
Provide product at competitive prices (CA1)	0.627	0.694	0.560				
Produce product with superior quality (CA2)	0.673	0.580	0.615				
Deliver product promptly (CA3)	0.780	0.620	0.575		0.881	Valid and reliable	
Introduce product to customer need (CA4)	0.813	0.591	0.575				
Introduce new product faster than competitor (CA5)	0.699	0.608	0.572				

Table 1 shows the result of measurement model assessment. All indicators are considered valid concerning convergent validity as the factor loading of each indicator exceeds the acceptable minimum value of 0.50 (Hair, Sarstedt, Hopkins, & Kuppelweiser, 2014). The indicators are also considered valid in respect of discriminant validity as the cross-loadings indicate that the loading of each indicator with its construct is higher than that with other constructs. Furtherly, those three constructs are considered reliable as the composite reliability (C/R) exceeds the minimum recommended value of 0.7 (Hair *et al.*, 2014).

As noted, PLS is a non-parametric estimation procedure. Hence, the bootstrapping method is used to extract *t-value* to ascertain the significance level of each path coefficient to examine the hypotheses. The primary method used to assess the inner model is by examining the variance explained R^2 . The result of the analysis indicates the variance explained (R^2) for Supplier relationship management (SRM) and the Competitive advantage is $R_1^2 = 0.788$ and $R_2^2 = 0.607$, respectively. Another measurement used to assess the inner model is its predictive relevance, which is denoted as $Q^2 = 1 - (1 - R_1^2)(1 - R_2^2)$. The result of Q^2 in this study equals to 0.916, which means the ERP has an excellent performance in predicting the competitive advantage.

Furthermore, four hypotheses were tested by assessing the path coefficient and the *t-value* obtained from the PLS result. Table 2 lists the path coefficient (β), and *t-value* for each relationship. Based on the significance level of 5% or *t-value* of 1.96, the results demonstrate that all path coefficients are positive and significant.

Table 2
Path Coefficient and *t-value*

Hypotheses	Original Estimate(β)	Mean of subsamples	Standard deviation	<i>t-value</i>
ERP \rightarrow CA (H1)	0.617	0.626	0.113	5.439
ERP \rightarrow SRM(H2)	0.779	0.785	0.045	17.123
SRM \rightarrow CA (H3)	0.318	0.311	0.126	2.525
ERP \rightarrow SRM \rightarrow CA (H4)	0.248	0.244	0.101	2.445

As expected ERP influences competitive advantage ($\beta = 0.617$ and $t\text{-value} = 5.439$). This finding supports the hypothesis H_1 and confirms the previous research that ERP has an impact on the competitive advantage (Abdelghaffar, 2012; Bin Che Rose, 2009; Egdair *et al.*, 2015; Hsu & Chen, 2004; Li & Lin, 2006). The result shows that the ERP system influences the competitive advantage of export companies in East Java. In today rapidly changing technological era, the export companies must be able to adapt to the existing technology. In the current, technology is also beneficial to create a competitive advantage. The implementation of the ERP system in the export company provides various benefits, such as the integration of functions and quality information. The ERP system improves the supply chain performance and ultimately creates a competitive advantage, and increase profits for the company. Export companies generally have a large variety of competitors scattered around the world, so it is not easy for export companies in maintaining their superiority. The requirement of a technology or ERP system is mandatory in maintaining or creating a competitive advantage for the export companies in East Java.

Furthermore, ERP also has a direct impact on SRM ($\beta=0.779$ and $t\text{-value}=17.132$). This result is consistent with previous research on the relationship between ERP and SRM (Al-Abdallah *et al.*, 2014; Larson & Kulchitsky, 2000; Yu *et al.*, 2001). The ERP system, hence, influences the supplier relationship management. The ERP system used by manufacturing or company will support the long-term relationship with the suppliers. One of the benefits of supplier relationship management is information sharing. Sharing of quality information (Al-Abdallah *et al.*, 2014; Larson & Kulchitsky, 2000; Yu *et al.*, 2001), One dimension of the ERP system, is highly useful in improving relations among export companies.

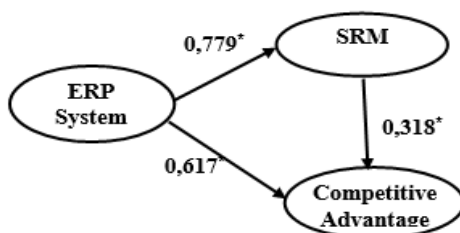


Figure 1. Research model

Figure 1 demonstrated the relationship of the constructs with its path coefficient, respectively. The result also indicates that SRM affects competitive advantage as shown by the path coefficient of 0.318 and the $t\text{-value}$ of 2.252. Supplier relationship management has a positive influence on the competitive advantage. An excellent relationship among companies and their suppliers create a competitive advantage for the export companies. With a good relationship, the supplier will seriously provide a higher quality product and of course, at a more affordable cost. It is not easy for an export company to launch a new product quickly if a flexible supplier does not support it.

This result is consistent with previous research by (Al-Abdallah *et al.*, 2014; Cousineau *et al.*, 2004; Thatte, 2007; Williams, 2006). The last finding is that SRM mediates the influence of ERP on the competitive advantage, as shown by the path coefficient of 0.248 and the $t\text{-value}$ of 2.445. This result indicates that supplier relationship management directly affects the competitive advantage and also mediates the relationship between ERP and competitive advantage. In summary, all hypotheses H_1 , H_2 , H_3 , H_4 are supported as expected.

The level of uncertainty faced by export companies in East Java is relatively high and diverse, such as the number of uncertain requests, and constantly changing prices. This situation is becoming more uncertain since the export companies are also selling their products overseas where the competitive environment is continuously changing. If the company is not flexible, it will be difficult for the company to maintain the existence or competitive advantage of the export company itself.

DISCUSSION

The present study was designed to examine the effect of ERP system on the competitive advantage and the mediating role of SRM in that relationship. The findings indicate that the results are in agreement with the previous study. ERP affects the competitive advantage directly and indirectly. This finding coincides with previous research arguing that the ERP system is a central system for integrating all related function within the supply chain network. Once a system is integrated, an organization will perform much better in terms of shorter lead time, reduced cost, and better quality. The ERP also affects the SRM, which means that with the integrated system in place, the

relationship between firm and supplier is getting better, and both parties will gain mutual benefit. The most interesting finding was that SRM mediates the influence of ERP system on the competitive advantage. When a relationship between supplier and company is well established, both parties will gain a higher mutual benefit from the indirect effect of the ERP system implementation. The result also demonstrated that the SRM, as expected, influences the competitive advantage. As the supplier support, the firm will be able to provide the product needs such as better quality, shorter lead time, and reduced cost, the relationship with the supplier, will improve the competitive advantage.

CONCLUSION

The primary aim of the present research is to examine the mediating role of the SRM in improving the competitive advantage. The study reveals that SRM mediates the influence of ERP on a competitive advantage. The findings also support the other three hypotheses. ERP influences the competitive advantage directly. An establishment in ERP system enables the firm to integrate all related function either externally or internally such that they can collaborate in a much better manner. This study, as expected, has also shown that the ERP influence the SRM directly and the competitive advantage indirectly. The firm, therefore, is necessary to invest in the ERP resources in the pursuit of superior competitive advantage. This work contributes to the current research in the supply chain management, particularly to the relationship of the ERP with the competitive advantage. This work also suggests an implication that managers should invest in an ERP system and establish an excellent SRM to enhance the competitive advantage of the firm

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