Industrial Estate Development: Challenges And Opportunities In Strengthening Competitiveness Of Manufacturing Industries

Sri Sarjana[1]
SMKN 1 Cikarang Barat - Bekasi - West Java - Indonesia
Nur Khayati[2]
SMAN 1 Cikarang Utara - Bekasi - West Java - Indonesia

Abstract

Competitive strategy is required by every business unit to win competition in uncertain and turbulent business environment especially in manufacturing industry. Development and distribution new industrial estates located in Java and outside Java by Indonesian government in an effort to win the global competition in manufacturing industry. This study empirically investigates role of human capital, infrastructure, supply chain, science and technology on competitive strategy in business units at industrial estates and its impact on strengthening the competitiveness of manufacturing industries. The author conducted survey on the best-performing industrial estate to test hypothesis and analyze the survey results using structural equation modeling. The results concluded that human capital, infrastructure, supply chain, science and technology have positive influence on competitive strategy and have positive impact on the competitiveness of manufacturing industries especially located in industrial estates. In addition, importance of choosing the right competitive strategy will greatly determine how big this business has superior competitiveness compared to its business competitors. This research is expected to be reference for business units and manufacturing industries to be used as one of the considerations in development of industrial estate that is being built and developed by current government in order to get the best competitiveness.

Keywords: *competitive strategy; competitiveness; infrastructure; human capital; supply chain.*

---

[1] Sri Sarjana is a Teacher in Study Program of Automotive Engineering in SMKN 1 Cikarang Barat - Bekasi - West Java - Indonesia, and doctoral degree holder in Strategic Management Padjadjaran University. Email: srisarjana@gmail.com

[2] Nur Khayati is a Teacher in SMAN 1 Cikarang Utara - Bekasi - West Java - Indonesia.

Industrial Estate Development: Challenges and Opportunities in Strengthening Competitiveness of Manufacturing Industries

Sri Sarjana, SMKN 1 Cikarang Barat - Bekasi - West Java - Indonesia
Nur Khayati, SMAN 1 Cikarang Utara - Bekasi - West Java - Indonesia

I. Introduction

Business to business provides many growth opportunities and benefits for firms (Fauska et al., 2013), carried out in dynamic environment and a lot of changes strategy, analyze the factors that might influence the competitive environment (Contreras & Silva, 2013). Strategy as method of analysis that allows to knew the general characteristics of particular market (Rocha, 1999). As today's dynamic and turbulent environment were maintained, technical infrastructure as well as people's knowledge and experience in many different fields and intimate conversations in the hallways (Kaveh et al., 2015). Industrial estates become one of benchmarks in development of national industry. The development of industrial estate is strategic effort to encourage the growth of industrial centers. The Ministry of Industry continuously strives to make distribution of industrial sector through development of industrial estate directed especially outside Java. This is in line with the issuance of Law no. 3 Year 2014 on industry where government encourages entrepreneurs to build factories within available industrial estates. Construction of 13 new industrial estates of 21 industrial zones planned by the Ministry of Industry was developed outside Java for distribution and development. The Association of Industrial Estates (HKI) presents data on the number of industrial estates. Industrial estates with the largest number exist in West Java province with 66 industrial estates. Industrial estates in Indonesia are uneven and tend to focus on island of Java. Some provinces outside Java do not have industrial estate, so industrial growth center and the spread of industrial estates in Indonesia are considered uneven.

The development of industrial estate is in harmony with prerequisites or ideal conditions required for purpose of industrial development to be achieved. The prerequisites required for the realization of leading industries, supporters and upstream, as well as in future resource utilization (Soerjono, 2017). The purpose of industrial estate development according to Government Regulation no. 24 year 2009 to control the utilization of space, to increase the effort of environmentally sound industrial development, to accelerate growth of industry in region, to increase industrial competitiveness, to increase investment competitiveness, to provide certainty of location in planning and development of coordinated infrastructure among related sectors. The purpose of industrial estate development is direction

of industrial estate development to encourage industrial development through development of industrial location in form of industrial estate (Sagala et al., 2004). Industrial development in Indonesia is still lagging behind compared to new industrialized countries such as South Korea and Thailand (Kwanda, 2000). The development of industrial estate is effective form of industrial activity in terms of ease of business world to obtain ready-built industry plot that has been equipped with various infrastructure and supporting facilities, obtaining legal certainty related to location of business, overcoming the spatial problems and simultaneously addressing the environmental impact problems caused by industrial activity. The development of industrial estate is intended to encourage growth of industrial sector more focused, integrated and provide more optimal results for area where industrial estate is located. Some of important aspects that form basis of the concept of industrial estate development are efficiency, layout and environment.

Indonesia is required to maintain competitiveness in international market (Susilowati, 2003). However, this is different from actual conditions in which Indonesia's competitiveness index in 2016-2017 is only ranked 41 or decreased four levels from previous according to World Economic Forum in 2017. The decline in Indonesia's competitiveness index is influenced by several things including condition stagnant competitiveness of Indonesia's infrastructure so that only ranked 60, decline in technological competitiveness that is ranked 91 or decreased six ratings. In addition, World Economic Forum also explained that due to stagnant infrastructure competitiveness and coupled with low infrastructure services as major problem that hampers business and investment in Indonesia. The decline in technological competitiveness is caused by the low availability of latest technology, information computer technology penetration and internet users only one fifth of the population.

Based on report of Logistic Performance Index (LPI) issued by World Bank in 2016 stated that rating of LPI Indonesia decreased from rank 53 with score of 3.08 in 2014 to rank 63 with score of 2.98 in 2016. This is marked by still high logistic cost in Indonesia which accounted for 24% of gross domestic product. Further described level of accessibility of Indonesia, where still low accessibility in Indonesia according to global competitiveness report in 2016-2017 compared with number of countries in Asia. Indicator of low accessibility of Indonesia among others is the value of ratio for railway double track to total network is only equal to 7.7% and expressway density value less of 0.1.

The existence of several companies that operate and run their business in industrial estate experienced decline in business and even eventually shut down com-

pany's operations due to less competitive then through this study as one means to fix the weaknesses and shortcomings for failure of previous company does not happen again. The purpose of this study is determine effect of human capital, infrastructure, supply chain, science and technology on competitive strategy and its impact on competitiveness of companies in industrial estate.

II. Literature Review

Human capital as collective knowledge of manpower (Bontis, 1999), employee capabilities to create value in organization (Izvercian et al., 2013), employees' ability to do things (Jyotirmayee & Mishra, 2010), knowledge, skills, and abilities embodied in people (Coff, 2002), stock of knowledge, skills, competencies, and abilities embodied in individuals (Jules & Fondo 2012), factors as employees' knowledge skill, capability, and attitudes in relation to fostering performances (Chen et al., 2004), most important elements are employees abilities (Izvercian et al., 2013), stock of accumulated knowledge, skills, experience, creativity (Angela & Michael, 2007), related to employees' knowledge, skills, experiences, education, motivation, commitment, creativity and innovation (Abazeed, 2017), source of innovation and strategic renewal (Bontis, 1999), increase by internally developing the knowledge and skills of their current employees (Souleh, 2014). Firm need strategic human capital resources within the firm to provide knowledge (Delery et al., 2017). Human capital management depends on its competencies management and knowledge management (Souleh, 2014), drives the growth in every organization can never be denied (Esther et al, 2017), ensuring that enormous potentials provided (Finn, 2003), integrated effort to manage and develop human capabilities (Chatzkel, 2004), consists of skills, competences and abilities of individuals and groups (Stewart, 2003), considered knowledge, talent and experience of employees (Bontis & Fitz-Enz, 2002).

Infrastructure plays important role in increasing investment and expanding the reach of community participation, as well as equitable development outcomes. The study of economic theory for development explains that to create and improve economic activities required adequate infrastructure. Infrastructure is also main support for implementation of regional development process. With the growing need for infrastructure development to support economic growth, government must provide framework to attract investment and private participation on a measurable scale in infrastructure projects. Infrastructure is driving force of economic growth. From allocation of public and private financing, infrastructure is seen as locomotive of national and regional development. Infrastructure has impact on improving

quality of life and human well-being, especially for increasing consumption value, increasing labor productivity and employment access, and increasing prosperity. The nature and type of infrastructure needed for area is influenced by the characteristic of environment and typical pattern of population distribution. Infrastructure is not only for enhance competitiveness to encourage investment, production and trade but also to accelerate the equitable distribution of development so that poverty and unemployment can be reduced. In addition, existence of infrastructure is also very necessary for human resource development process in region can run well.

The role of infrastructure in the field of transportation, among others, to overcome the obstacles that interfere with smooth flow of goods and people both through land, sea and air modes (Susanto, 2009). Economic infrastructure plays important role in promoting economic growth performance of country where infrastructure is provided by government and for those who use no direct pay infrastructure (Atmaja & Mahalli, 2013). Transportation is means of interconnection between production areas or bridge producer with consumer so that role of transportation becomes important thing between mutual need (Adisasmita, 2011). Infrastructure indicator in ranking of competitiveness for regency or city by Irawati et al. (2012) covering road length, availability of land resources, water resources, forest resources, highway quality, urban area, electricity production and telephone facilities. With development of infrastructure, level of company productivity will increase and among the most prominent is construction of roads. The role of infrastructure is important to connect various centers of economic activity. Based on presidential regulation no. 42/2005 on committee for acceleration of provision infrastructure, several infrastructures whose provision must be regulated by government include transportation infrastructure, road infrastructure, irrigation infrastructure, drinking water and sanitation infrastructure, telematics infrastructure, electricity infrastructure and oil and gas infrastructure. Classification of infrastructure is categorized as basic infrastructure because it is needed by public so it needs to be regulated by government about its provision.

Supply chain is concept in which there is management system related to product, information, and financial flow (Emhar et al, 2014), business organization network involved in moving material, information, and money as raw material flow from each source then through production process until raw materials are delivered as end products or services to end consumers (Summer, 2009), network of companies that work together to create and deliver products to hands of end consumers (Pujawan & Mahendrawathi, 2010), consisting of all actors who involved directly

or indirectly in fulfillment of customer demand which includes producers, input suppliers, transportation services, warehouses, retailers, even customers themselves (Chopra & Meindl, 2007).

Supply chain management is integration of raw material and service procurement activities, conversion of intermediate and final products, and delivery to customers (Heizer & Render, 2010), design, planning, execution, control and monitoring supply chain activities with goal of creating net, building competitive infrastructure, utilizing worldwide logistics, synchronizing supply and demand, and measuring performance globally (Lokollo 2012), set of mutually exclusive activities and decisions to efficiently integrate suppliers, manufacturers, warehouses, transportation services, retailers and consumers (Li, 2007), management of business network from start of production to fulfillment of requests for goods and services desired by end consumer (Harland, 1996), refers to overall management of production, distribution and marketing processes in which consumers are exposed in according to his wish and producers can produce with right amount, quality, time, and location (Marimin & Maghfiroh, 2013).

Supply chain management provides cost savings and enhanced strong partner relationships with various parties such as suppliers, distributors, retailers, and end customers (Liputra et al., 2015), improves efficiency of product distribution through integration of product processes in supply chain (Saptana & Yofa, 2016). Indicators of supply chain management performance include product development, strategic partnerships with suppliers, planning and controlling, production, distributions, quality of information, customer relationship, and purchasing (Rahmasari 2011). The relationship between parts of supply chain management plays role in value of goods transport and value of final product received by customer so that good relationship can support supply chain effectiveness, otherwise non-working relationship will disrupt overall effectiveness of supply chain (Janvier-James, 2012). In order to realize an efficient product distribution system, it is necessary to implement integrated supply chain management (Saptana & Yofa, 2016).

Science and technology is link between theory and practice that will create progress in its application in practice and always experience development so as to create prosperity and ease in all areas of human life (Syaifullah, 2006). Science or knowledge refers to process of gaining knowledge and information gained through learning (Esposito, 2001). Science refers to each field of scientific knowledge that studies the subject matter of series for human activities or processes, the order of actions of mind or procedure, and overall results achieved or products that are all

dynamic so that science can be understood as research activities, working methods and the results of knowledge (Liang, 2000). The scientific search process undertaken by scientists through observation, measurement, analysis of critically derived data, followed by evaluation of results based on sound reasoning to reach rational conclusion (Baiquni, 1996). Technology is the science of how to apply science to utilize nature for welfare and human comfort (Syaifullah, 2006).

Competitive strategy as activities that lead to position in the market (Contreras & Silva, 2013), broad formula for haw business is going to compete (Porter, 1998), becomes part of corporate strategy led to increased productivity and performance (Sarjana et al., 2017a). Customer intimacy focuses on the needs of the individual customer, true customer intimacy can only arrive through aligning the product development, manufacturing, administrative functions and executive focus around the needs of individual customer (Sihite & Simanjuntak, 2015). Generic strategy typology includes prospectors, defenders, analyzers, and reactors (Miles and Snow, 1986). Furthermore, prospectors focus on innovation, creating new markets and enacting uncertain environments, defenders emphasize cost control in stable environments, analyzers build firm foundation in efficiency.

The concept of competitiveness is used in measuring the benefits and sustainability of the company's profit against its competitors if sustainability of profit is greater than the competitor industry (Susilowati, 2003), shows ability of region for create added value to achieve high and sustainable prosperity while remaining open to domestic and international competition (Irawati et al., 2012). Product innovation will be decisive in successful strengthening of competitiveness (Octavia et al., 2017). Required strengthening of competitiveness to be able to excel and win the competition (Shukriah & Hamdani, 2013). Facing an increasingly open and competitive market mechanism, market control is prerequisite for improving competitiveness (Nuryanti, 2013). Level competitiveness is one of parameters in the concept of sustainable city, higher the competitiveness of city then level of welfare for community is higher (Irawati et al., 2012). The parameters of competitive influence will be positive if country has strong competitiveness among other competing countries (Susilowati, 2003). Excellent product is one of determinants in strengthening competitiveness (Octavia et al., 2017).

Competitive advantage is closely related to cost reduction, differentiation, growth, and quality (Elbeltagi et al., 2016), produce goods or services that their customers are more valuable than the goods or services produced as result of their competitors (Saloner et al., 2001), make something better than all its competitors

(Sakas et al., 2014), impact of implementation company operation strategy in creating value creation on products and services produced (Sarjana et al., 2017a), include cost, differentiation and marketing (Roger, 2010), products and services, information, relationships with business partners as component of competitive advantage (N`Da et al., 2008). Dimension competitive advantage includes cost, quality, and delivery (Chamsuk et al., 2015), innovation, efficiency, quality, and customer responsiveness create a competitive advantage (Attiany 2014), cost leadership and differentiation into strategic part in achieving competitive advantage (Sarjana et al., 2017a). Knowledge can be considered as a competitive advantage that organizations can hardly imitate its competitors (Kaveh et al., 2015). Opportunities utilizing temporary competitive advantage in today's business environment (Wang, 2014). Measurement of the level for competitiveness was among regional economy, infrastructure and natural resources, human resources. and policies (Irawati et al., 2012).

III. Methods/Methodology

Descriptive survey method applied in this study to describe systematically and accurately to facts and characteristics found in the field. A type of causality investigation that shows the direction of relationships among variables based on the research model is applied fully in this study. Direct observation by considering time frame that is cross-sectional with intention for information or data obtained is result of research done in certain time which have been determined that is time range April - May, 2018. Source data and information obtained research result directly in the field as primary data and other data that already exist and has been published by other institutions as secondary data. Primary data sources were obtained from direct observation of manufacturing industry employees in industrial estate. The population used as a reference is company with manufacturing industry background that operates its business in industrial estate of Bekasi Regency such as Jababeka, MM2100, EJIP, Hyundai, Delta Silicon and Delta Mas. The total population of companies operating in industrial estate amounts to 3450 manufacturing industries with medium and large scale enterprises. Ownership of manufacturing industry is foreign and local companies with national, multinational and international level companies. The sample used in this research is 300 employees of manufacturing industry located in industrial estate.

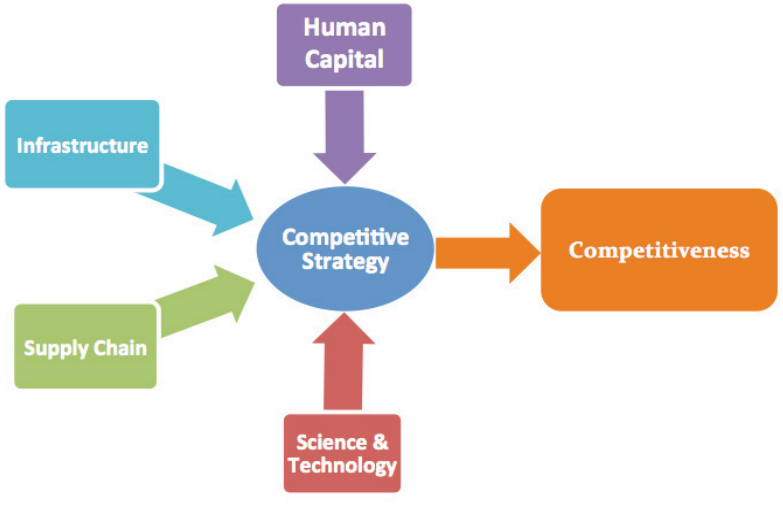
'The money seems to stick where it hits, like a flypaper' was a well-known remark by Arthur Okun that was cited in Inman (2008) where per-dollar non-matching grants stimulate government expenditure more than the income of the

citizens does. The exogenous federal grant to a local government recipient increases public expenditure more than an equivalent increase in citizens' income. Like a flypaper, the government grant stays in the hands of the government and the citizens' income stays in the citizens hand.

This study explores the flypaper effect in Indonesia. The flypaper effect is investigated by observing the marginal effect of federal grants to public expenditure and compare it with the marginal effect of household income. Using the case of decentralized Indonesia, the grant to local government is calculated by a central decision, which is independent to local government. This case would allow us to ensure that the grant is exogenous[1] . This paper also specifies the spatial effect on estimating the size of the flypaper effect. Spatial effects matter to public expenditure. LeSage and Dominguez (2012) argue that a spillover of public goods creates bias of public expenditure in the sense that public service not only affects on the jurisdiction but also the nearest surrounding neighborhood/region. Furthermore, under open-bounded geography economic interaction among the surrounding neighboring regions should vary citizen income which causes omitted variables bias in conservative regression models. Therefore, spatial approach is necessary to determine the true magnitude of the flypaper effect, which is less-explored in previous literature on the subject.

An initial study to estimate the influence of flypaper effect was conducted by Gramlich et al. (1973) who estimates per-dollar addition of federal grant increases 43 cents of state government expenditure. Inman (2008) conducted a panel study of 41 city budgets and found a one-dollar increase of grant equivalently increase one-dollar of expenditure while companion income increased by 0.3 dollar. Other

Figure 1. Industrial Estate Development Model



Industrial estate development model in this study is based on development of four factors that encourages the strengthening of competitive strategy so as to improve the competitiveness of companies in industrial estate in West Java to be superior. Quantitative analysis is implemented in this research using structural equation modeling with Lisrel 8.8 program to know the relation between dimensions and tested variable. The test results will be confirmed with previous theory so that resulting conclusions can support or even reject the existing theory. Based on previous literature review, research hypotheses:

H_1 : Human capital has positive effect on competitive strategy

H_2 : Infrastructure has positive effect on competitive strategy

H_3 : Supply chain has positive effect on competitive strategy

H_4 : Science and technology have positive effect on competitive strategy

H_5 : Competitive strategy has positive effect on competitiveness

IV. Results, Analysis, and Discussions

Composition of questionnaires data received by researchers from respondents consisted of 182 data obtained directly and 118 data obtained online so that the number of questionnaires that were collected as many as 300 respondents. After total data collection so that data is ready to be done statistical data processing. Company employees in industrial estate became source of data and information deemed important in this study as representative of manufacturing industry sampled in this study.

Based on analysis of questionnaire it can be seen the characteristics of respondents with male gender of 63% and women by 37% so that respondents who were sampled in this study have male gender. Respondent with age more than 50 year equal to 11%, age of respondent between 40 to 50 year equal to 19%, age of respondent between 30 to 40 year equal to 41%, and age of respondent under 30 year equal to 29% so it can be seen that most of respondent have age between 30 to 40 years. Education respondents at the level of S2 by 2%, S1 education level by 38%, education level of D3 by 8% and high school education level of 52% so that high school education dominate respondents education when conducted research. The business background of company in industrial estate in electronic field with number of respondents is 26%, automotive by 38%, food and beverages 10%, pharmacy by 6%, consumer good by 16% and logistics by 4% so respondents while electronics companies have respondents 24% so that respondents work on companies that dominated from automotive background.

Table 1. Estimated construct reliability and variance extracted

Variable	Dimension	Standardized Loading (l)	t-value	Error Variance	Construct Reliability (CR)	Variance Extracted (VE)	Remark
Human Capital (HC)	hc1 = Knowledge	0.84	9.88	0.29	0.951	0.543	Valid dan reliable
	hc2 = Skill	0.75	9.31	0.44			
	hc3 = Competency	0.15	2.28	0.98			
Infrastructure (IS)	is1 = Road & transportation	0.85	17.07	0.27	0.985	0.678	Valid dan reliable
	is2 = Water & sanitation	0.80	15.76	0.36			
	is3 = Electrification & fuel	0.82	16.37	0.32			
Supply chain (SC)	sc1 = Procurement raw materials & services	0.65	11.09	0.58	0.949	0.523	Valid dan reliabel
	sc2 = changing semi-finished goods & finished products	0.81	14.03	0.34			
	sc3 = Delivery to customer	0.70	12.04	0.51			
Science & technology (Tech)	t1 = Process	0.05	0.83	1.00	0.831	0.511	Valid dan reliabel
	t2 = Procedure	1.02	7.11	-0.04			
	t3 = Product	0.67	6.44	0.56			
Competitive strategy (CS)	cs1 = Prospectors	0.81	0.00	0.25	0.984	0.632	Valid dan reliabel
	cs2 = Defenders	0.80	14.63	0.36			
	cs3 = Analyzers	0.79	14.35	0.38			
	cs4 = Reactors	0.78	14.20	0.39			
Competitivenes s (Comp)	comp1 = Visi & kepemimpinan	0.71	0.00	0.50	0.957	0.504	Valid dan reliabel
	comp2 = Kinerja finansial	0.75	9.69	0.44			
	comp3 = Produk & jasa	0.61	8.71	0.62			
	comp4 = Inovasi	0.56	8.22	0.67			

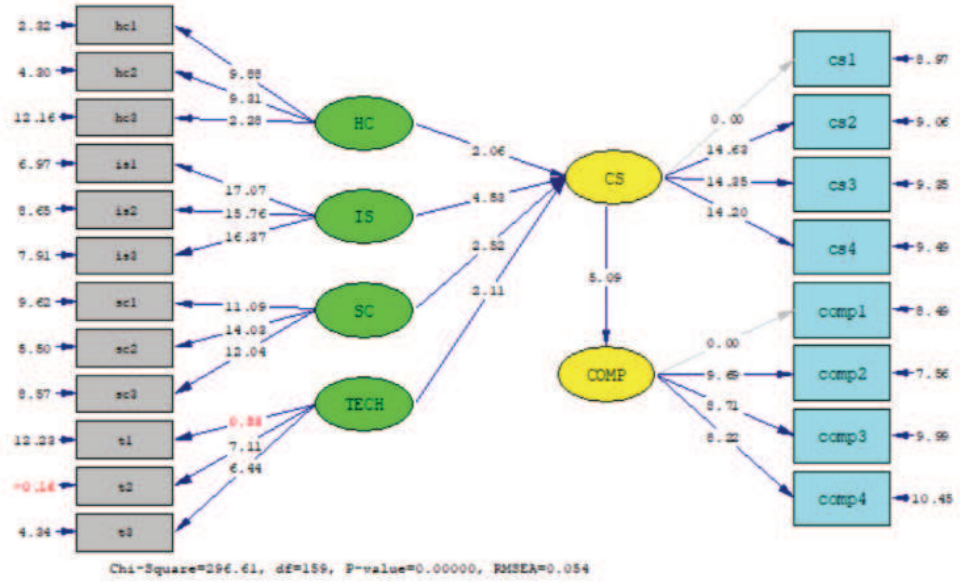
Based on results of analysis and calculation with construct reliability (CR) and variance extracted (VE) performed on each dimension of the research in table 1, it can be seen that all dimensions tested in this study are valid and reliable. For VE of test result have value ≥ 0,5 and CR value on each construct test result have value ≥ 0,7 so it can be concluded that all constructs and dimensions used in this research have validity and reliability value as expected. So from the results of this test can be interpreted that dimensions of each construct that refers to previous research can be implemented and confirmed with this research.

Table 2. Result of Goodness of Fit Model

Goodness Fit	Fitness Criteria Index	Result	Remark
GFI	≥ 0,90	0.91	Good Fit
RMR	≤ 0,05	0.077	Marginal Fit
NFI	≥ 0,90	0.90	Good Fit
NNFI	≥ 0,90	0.94	Good Fit
CFI	≥ 0,90	0.95	Good Fit
IFI	≥ 0,90	0.95	Good Fit
RFI	≥ 0,90	0.89	Marginal Fit
AGFI	≥ 0,90	0.88	Marginal Fit
PGFI	0 – 1	0.69	Marginal Fit
PNFI	0 – 1	0.76	Marginal Fit

From the test result is based on fitness model with some criteria of goodness of fit index so as to get result as many as ten criteria measured from table 2. The calculation result can be seen that there are five measurement index included in good fit category that is GFI, NFI, NNFI, CFI, and IFI, while the other five indexes with measurement results in the category of marginal fit index are RMR, RFI, AGFI, PGFI and PNFI. So from the test results of goodness of fit index can be stated that fit index measurement is still in accordance with the required so that the measurement model is declared fit.

Figure 2. Result of Structural Equation Modeling



Based on calculation, it can be seen that human capital, infrastructure, supply chain, science and technology have effect on competitive strategy and have direct impact on competitiveness. In the figure 2 can be presented test results from each research hypothesis shown from series of test results influence between variables. The results of this study indicate that human capital has positive effect on competitive strategy, the infrastructure has positive effect on competitive strategy, supply chain has positive effect on competitive strategy, science and technology have positive effect on competitive strategy, and competitive strategy has positive effect on competitiveness. Therefore, it should be considered by company in industrial estate that in order to strengthen the competitiveness, it is possible to develop competitiveness strategy with support and contribution from various aspects such as human capital, infrastructure, supply chain, science and technology.

Table 3. Result of structural equation model

Path	Coefficient Standardized Solution	t-value	Conclusion
Human capital → Competitive strategy	0.14	2.06	Accepted
Infrastructure → Competitive strategy	0.29	4.53	Accepted
Supply chain → Competitive strategy	0.18	2.52	Accepted
Technology → Competitive strategy	0.13	2.11	Accepted
Competitive strategy → Competitiveness	0.37	5.09	Accepted

The implication of hypothesis testing result can be explained that company in industrial estate able to develop human capital, infrastructure, supply chain, science and technology have positive effect on competitive strategy. In addition, competitive strategy has positive effect on competitiveness. This mean that companies in industrial estate can improve competitive strategy by optimizing the role of human capital, infrastructure, supply chain, science and technology is done better. Road and transportation as dimension of infrastructure has greatest influence on competitive strategy. While innovation is becomes very important dimension for strengthening the company's competitiveness in industrial estate. Based on table 3, it can be explained that the overall hypothesis tested is significant because all test results have value > 1.96. The greatest significance value occurs in this test result is between competitive strategy to competitiveness.

V. Conclussion and Recommendation

Based on results of discussion quantitatively it can be concluded that increase of human capital, infrastructure, supply chain, science and technology have positive effect on competitive strategy and have positive impact on competitiveness. Human capital has significant effect on competitive strategy (Sarjana et al., 2017b). The implementation of supply chain management has positive and significant impact on competitive advantage (Rahmasari 2011). The greatest effect occur competitive strategy on competitiveness when compared to effect on other variables. It can be identified that competitiveness is more affect by innovation dimension in strengthening the company's business in industrial estate. Competition of manufacturing industry in industrial estate as an effort in development of competitive strategy must be done through actively involved in selection of strategy that suits the needs of company whether prospectors, defenders, analyzers or reactors.

The importance of choosing right competitive strategy is crucial to future development of manufacturing industry in the hope that industrial manufacturing has superior competitiveness compared to its business competitors. Factors that support both internal and external industrial manufacturing must al-

ways be considered and followed by developing latest innovations that are created optimally. This research is expected to be reference for business units and industrial manufacturing to be used as one of considerations and references in development of industrial estate built and developed by government in order to get the best competitiveness so that sustainable industry can be achieved well.

References

Abazeed, R. A. M. 2017. The Impact of Intellectual Capital Dimensions on Organizational Performance of Public Hospitals in Jordan. *Global Journal of Management and Business Research: Administration and Management.* 17(5), 42-52.

Adisasmita, S. A. 2011. *Transportasi dan Pengembangan Wilayah*. Yogyakarta: Graha Ilmu.

Angela, B., & Michael, A. 2007. *Human capital management*. London: Kogan Page.

Atmaja, H. K., & Mahalli, K. 2013. Pengaruh Peningkatan Infrastruktur Terhadap Pertumbuhan Ekonomi Di Kota Sibolga. *Jurnal Ekonomi,* 3(4).

Attiany, M.S. 2014. Competitive Advantage through Benchmarking: Field Study of Industrial Companies Listed in Amman Stock Exchange. *Journal of Business Studies Quarterly,* 5(4), 41-51.

Baiquni, A. 1996. Alquran, *Ilmu Pengetahuan dan Teknologi,* Cet. IV. Yogyakarta: PT. Dana Bhakti Prima Yasa.

Bontis. N, 1999. Managing organizational knowledge by diagnosing intellectual capital: framing and advancing the state of the field. *International Journal of Technology Management.* 18(5-8), 433-462.

Bontis, N. B., & Fitz-Enz, J. 2002. Intellectual capital ROI a causal map of human capital antecedents and consequences. *Journal of Intellectual Capital.* 3, 223-247.

Contreras, O. A. R., & Silva, F. A. B. 2013. Competitive Strategy To Achieve ISO 9001 Certification in Small and Medium Supply Enterprises in Ciudad Juarez, Chihuahua, Mexico. *European Scientific Journal,* 9(28), 133-143.

Chamsuk, W., Phimonsathien, T., & Fongsuwan, W. 2015. Research and Development (R&D) Capabilities and Innovation Capability that Affect the Enterprise Competitive Advantage in the Thai Automotive Parts Industry: SEM Approach. *International Journal of Arts & Sciences*,

08(02), 441–457.

Chatzkel, J. L. 2004. Human capital: the rules of engagement are changing. *Lifelong learning in Europe*. 9(3), 139-145.

Chen, J., Zhu, Z., & Xie, H. Y. 2004. Measuring intellectual capital: a new model and empirical study. *Journal of Intellectual Capital*. 5(1), 195-212.

Chopra, S., & Meindl, P. 2007. *Supply chain management: strategy, planning, & operations. 3rd ed*. New Jersey (US): Pearson Education.

Coff, R. W. 2002. Human likelihood of capital, shared expertise, and the impasse on corporate acquisitions. *Journal of Management.* 28, 107-128.

Delery, J. E., Roumpi, D., & Walton, S. M. 2017. Strategic human resource management, human capital and competitive advantage: is the field going in circles?. *Human Resource Management Journal.* 27(1), 1–21.

Elbeltagi, I., Hamad, H., Moizer, J., & Abou-Shouk, M. A. 2016. Levels of Business to Business E-Commerce Adoption and Competitive Advantage in Small and Medium-Sized Enterprises: A Comparison Study Between Egypt and the United States. *Journal of Global Information Technology Management,* 19(1), 6–25.

Emhar, A., Aji, J.M.M., Agustin, T. 2014. Analisis rantai pasokan daging sapi di Kabupaten Jember. *Berkala Ilmiah Pertanian*. 1(3), 53-61.

Esposito, J. L. 2001. *The Oxford Encyclopedia of the Modern Islamic Word.* Bandung: Mizan.

Esther, N. M., Dapper, E. M., & Nlemedim, E. 2017. Human Capital Management and The Growth of Small and Medium Scale Enterprises in Emene, Enugu State. *Journal of Business Management.* 3(2), 45-53.

Fauska, P., Kryvinska, N., & Strauss, C. 2013. The role of e-commerce in B2B markets of goods & services. *International Journal of Services, Economics & Management,* 5(1-2), 41–71.

Finn, R. 2003. Human-capital management (HCM): a three-letter acronym too far for HR or the way to get the people agenda on to that of the board. *Human Resource Management International Digest.* 11(5), 2-4.

Harland, C.M. 1996. Supply chain management: relationships, chains and networks. *Br J Manag.* 7(s1), S63-S80.

Heizer, J., & Render, B. 2006. *Operations management.* 8th ed. Upper Saddle River (US): Pearson Education, Inc.

Irawati, I., Urufi, Z., Resobeoen, R. E. I. R., Setiawan, A., & Aryanto. 2012. Pengukuran Tingkat Daya Saing Daerah Berdasarkan Variabel Pere-

konomian Daerah, Variabel Infrastruktur dan Sumber Daya Alam, Serta Variabel Sumber Daya Manusia di Wilayah Propinsi Sulawesi Tenggara. *J@ti Undip,* VII(1), 43-50.

Izvercian, M., Seran, S. A., & Buciuman, C. 2013. Transforming Usual Consumers into Prosumers with the Help of Intellectual Capital Collaboration for Innovation. *International Journal of Information and Education Technology.* 3(3), 388-392.

Janvier-James, A.M. 2012. A new introduction to supply chains and supply chain management: definitions and theories perspective. *Int Bus Res.* 5(1), 194-207.

Jules, M. N. D., & Fondo, S. 2012. The Effects of Human Capital on Agricultural Productivity and Farmer's Income in Cameroon. *International Business Research.* 5(4), 149-159.

Jyotirmayee, C. & Mishra, B. B. 2010. Theoretical and Empirical Investigation of Impact of Developmental HR Configuration on Human Capital Management. *International Business Research.* 3(4), 181–186.

Kaveh, D., Bamipour, E. M., & Far, M. S. 2015. The Relationship between Knowledge Management and Competitive Advantage: A Case Study in Small and Medium-Sized Companies in the Packaging Industry of Khorasan Razavi. *European Online Journal of Natural and Social Sciences,* 4(1), 650-659.

Kwanda, T. 2000. Pengembangan Kawasan Industri di Indonesia. *Jurnal Dimensi Teknik Arsitektur,* Vol. 28 No. 1, pp. 54-61.

Li, L. 2007. *Supply chain management: concept, techniques and practices enhancing value through collaboration.* Singapore (SG): World Scientific Publishing Co. Pte. Ltd.

Liang, G. T. 1996. *Pengantar Filsafat Teknologi.* Yogyakarta: ANDI.

Liputra, D.T., Anna, I.D., & Kartika, W. 2015. Pemetaan Entitas dan Aliran Pada Jaringan Sistem Rantai Pasok Produk Susu. *Jurnal Integra,* 5(1), 1-15.

Lokollo, E.M. 2012. *Supplpy chain management (SCM) atau Manajemen rantai pasok, Bungai rampai rantai pasok komoditas pertanian Indonesia.* Bogor (ID): IPB Press.

Marimin, M.N. 2013. *Teknik dan analisis pengambilan keputusan fuzzy dalam manajemen rantai pasok.* Bogor (ID): IPB Press.

Miles, R. E., & Snow, C. C. 1986. Organizations: new concepts for new forms.

California Management Review, 18(3), 62-73.

Nuryanti. 2013. Peran E-commerce Untuk Meningkatkan Daya Saing Usaha Kecil dan Menengah. *Jurnal Ekonomi,* 21(4), 1-15.

N`Da, K., Bergeron, F., & Raymond, L. 2008. Achieving advantages from business to business electronic commerce: An empirical validation of an integrative framework. *International Journal of Electronic Business,* 6(5), 516–549.

Octavia, A., Zulfanetti, & Erida. 2017. Meningkatkan Daya Saing Daerah Melalui Peningkatan Kinerja Bisnis Usaha Mikro, Kecil dan Menengah di Propinsi Jambi. *Jurnal Perspektif Pembiayaan dan Pembangunan Daerah*, 4(3), 155-166.

Porter, M. 1998. *Competitive Strategy: Techniques for Analyzing Industries and Competitors.* New York: The Free Press.

Pujawan, I. N, & Mahendrawathi, E. R. 2010. *Supply Chain Management, Edisi Kedua.* Surabaya: Guna Widya.

Rahmasari, L. 2011. *Pengaruh supply chain management terhadap kinerja perusahaan dan keunggulan bersaing. Informatika.* 2(3), 89-103.

Rocha, R. 1999. *Estrategia Competitiva Para Empresas: Guia Practica.* Mexico: Trillas.

Roger, B. J. 2010. *Market-Based Management: Strategies for Growing Customer Value and Profitability.* New Jersey: Prentice Hall.

Sagala, A. 2004. *Penyusunan Rencana Pengembangan Kawasan Industri.* Jakarta: BPPT Press.

Saloner, G., Andrea, S., & Joel, P. 2001. *Strategic Management.* New York: John Wiley.

Sakas, D., Vlachos, D., & Nasiopoulos, 2014. Modelling strategic management for the development of competitive advantage, based on technology, *Journal of Systems and Information Technology,* 16(3), 187-209.

Saptana, & Yofa, R. D. 2016. Penerapan Konsep Manajemen Rantai Pasok Pada Produk Unggas. *Forum Penelitian Agro Ekonomi,* 34(2), 143-161.

Sarjana, S., Kartini, D., Rufaidah, P., & Yunizar. 2017a. The Role of Corporate Social Responsibility, Corporate Reputation and Dynamic Capabilities in Manufacturing Industries. *Middle-East Journal of Scientific Research,* 25(9), 1821-1828.

Sarjana, S., Kartini, D., Rufaidah, P., & Yunizar. 2017b. Resources Based View as a Strengthening of Industry's Capabilities to Improve Competitive

Startegy. *International Journal of Advanced Research,* 5(7), 2195-2204.

Sihite, M., & Simanjuntak, A. 2015. The Competitive Strategy in Green Building for Indonesian Stakeholder's. *International Journal of Innovation, Management and Technology,* 6(1), 8-15.

Soerjono. 2017. *Laporan Kinerja Kementerian Perindustrian Tahun 2016.* Jakarta: Sekretariat Jenderal Kementerian Perindustrian.

Souleh, S. 2014. The impact of Human Capital Management on the Innovativeness of research Center: The Case of Scientific Research Centers in Algeria. *International Journal of Business and Management*. II(4), 80-96.

Stewart, T. A. 2003. *The Wealth of Knowledge: Intellectual Capital and the Twenty-First Century Organization.* New York: Doubleday.

Summer, D.A. 2009. *Recent commodity price movements in historical perspective. Am J Agric Econ*. 91(5):1250-1256.

Susanto, B. 2009. *Memacu Infrastruktur Di Tengah Krisis, Cetakan Pertama*. Jakarta: Pustaka Bisnis Indonesia.

Susilowati, S. H. 2003. Dinamika Daya Saing Lada Indonesia. *Jurnal Agro Ekonomi*, 21(2), 122-144.

Syaifullah, M.S. 2006. Konsep IPTEK dan Keterpaduannya Dalam AlQuran. *Jurnal Hunafa,* 3(3), 287-298.

Syukriah, A., & Hamdani, I. 2013. Peningkatan Eksistensi UMKM Melalui Comparative Advantage Dalam Rangka Menghadapi MEA 2015 di Temanggung. *Economic Development Analysis Journal,* 2(2).

Wang, H. 2014. Theories for Competitive Advantage. In H. Hasan (Eds.), *Being Practical with Theory: A Window in Business Research* (1st ed., pp. 33-43). Australia: Theory Research Group.