



THE EFFECT OF COOPERATION AND INNOVATION CAPABILITY ON INNOVATION TYPE OF THE EXPORT ORIENTED SME'S IN INDONESIA

Elan Nurhadi Purwanto¹, Titus Indrajaya²

¹Pertamina University, Indonesia

²Respati Indonesia University, Indonesia

Email: elan.nurhadi@universitaspertamina.ac.id¹

Abstract

The unit of analysis is export-oriented SMEs located in Bali, Jakarta, West Java, East Java and Central Java. The SMEs in question are not differentiated based on the type or production sector, because the authors are of the view that the factors examined in this study can apply in general to all SMEs. The research observation unit is the manager of each SME's. The manager in question is the top manager or top manager of the company. Furthermore, the number of samples in the study was calculated from a total population of 317 SMEs. Based on the Slovin formula, 176 samples were obtained.

The results of this study are, The innovation capability model for export-oriented SMEs in Indonesia is supported by implementing of cooperation, Cooperation that is implemented by export-oriented SMEs include factors of vertical cooperations and horizontal cooperations. The dominant role is horizontal partnerships, namely partnerships implemented with partners in educational institutions or business incubators, financial institutions, government institutions or related agencies, as well as with associations or industrial communities or exporters, and so forth. Innovation capability in export-oriented SMEs includes the dimensions of strategic capability, network capability, process capability, and learning capability. These four dimensions of capability have an important role for SMEs so that SMEs have the capability to be able to produce types of innovation within their companies. The dominant role is network capability and strategy. The types of innovation produced by export-oriented SMEs include product innovation, marketing innovation, and process innovation. The dominant types of innovation are marketing innovation and process innovation.

Keywords Cooperation, Innovation, Capability, Innovation Type of Exports, Smes

INTRODUCTION

SMEs have an important role for the Indonesian economy. This can be seen from its contribution to Indonesia's National GDP which is quite large. In 2021 the role of SMEs in the creation of national GDP according to current prices is estimated to reach IDR 4.08 trillion or 24% of the total national GDP. SMEs in Indonesia are able to absorb a workforce of around 9.9 million workers or 7.72% of the total employment in the business sector. Currently the number of SME business units in Indonesia has reached around 911 thousand units or 1.34%. However, its large role in the domestic economy is not followed by its role in the export market. In 2021 export activities are dominated by large businesses which reach an 83% share or a value of IDR 1,894 trillion, while small and medium enterprises (SMEs) only achieve a 15.25% share or a value of IDR 347 trillion.

Several studies have shown that Indonesian SMEs face problems that make it difficult for SMEs to compete, especially in the export market. Trisakti University's Center for Industry, SME, and Business Competition (2012) conduct research in three cities in Central Java, namely Solo, Semarang, and Yogyakarta, shows the level of the main problems faced related to capabilities, one of which is the capability to create networks abroad in addition to factors such as the capability to access market information, export regulations and policies, working capital and raw materials. Widyatmini (2013) has

identified and evaluated the external and internal conditions of export-oriented SMEs. The study was conducted in five provinces, namely DKI Jakarta, West Java, Central Java, East Java and Banten. Based on the research results obtained, it shows that SMEs in the five provinces have the following internal weaknesses, which are mainly weak innovation capabilities and limited cooperation with other SMEs.

The explanation above shows that export-oriented SMEs especially need to improve their ability to collaborate and innovate. Several studies of innovation models in SMEs conducted by Romijn and Alabadejo (2002), Qiang and Shen Yong (2011), Najib and Kiminami (2011), and Dotun (2015) state that innovation models are influenced by variables such as partnerships.

Based on the explanation above, it was found that there are problems in export-oriented SMEs in the capability of innovation and the ability to enter into cooperation. Therefore, the purpose of this research is to find out how the effect of cooperation and innovation capabilities on type innovation.

LITERATUR REVIEW AND HYPOTHESES

Cooperation

According to the RBV theory approach (resource-based view/theory), there are three main objectives for companies to collaborate. The first goal is to increase profits by combining similar resources. Second, it provides resource advantage by combining complementary resources, skills, and strengths.

According to Cravens (2013), partnership is an effort to collaborate with stakeholders consisting of vertical and horizontal relationships. The vertical relationship in question is the relationship made with suppliers and customers while the meaning of horizontal relationship is the relationship made internally and laterally

Wheelen et al. (2015) argues that companies carry out a cooperative strategy to create competitive advantage in an industry. Companies carry out a partnership strategy by entering into partnerships (strategic alliances), which are forms of long-term cooperation between two or more independent companies or business units involved in business activities for mutually beneficial economic purposes.

Najib and Kiminami (2011) expressed the opinion that there are three forms of partnership (cooperation) that can encourage SMEs to become more innovative, namely (1) Partnership in the business environment (inter firm cooperation), (2) Cooperation partnership with the government (3) Partnership with research/research institute.

In this study, the authors are of the view that partnership is an exogenous variable that can influence innovation capability. SME actors who can cooperate well and broadly show that they have the ability to generate innovation. With partnerships, they get resources that they don't have. The resources obtained can support SMEs to increase their ability to innovate. Thus, they can produce a type of innovation that can develop their business.

Innovation Capability

Adler and Shenhar (1990) define innovation as (1) the ability to develop products to meet market needs; (2) the ability to use existing technology to develop products; (3) the ability to develop new products or update existing products to meet market needs; and (4) the ability to acquire new technology to create new opportunities.

According to Albaladejo and Romijn (2000) the innovation capability of SMEs is influenced by two internal and external sources. (1) Internal factors are factors that affect the innovation capability of SMEs, namely educational background, skills by the company owner, skills brought by the company owner, and skills of the company's employees. b. External factors are factors that influence the innovation capabilities of SMEs which can be sourced from interactions with suppliers, customers, public institutions, and industry associations which allow companies to obtain input materials for the learning process that are not available within the company.

Cooperation and Innovation Capability

Najib and Kiminami (2011) conducted research on the effect of partnerships on innovation and business performance in food processing industry SME clusters in rural areas in Indonesia. The purpose of this study is to understand the role of cooperation in enhancing innovation and understand the relationship between cooperation, innovation and business performance. The variable used in this research is cooperation as an independent variable with internal dimensions of firm cooperation, government cooperation, and cooperation with institutions. The results of the study show that internal firm cooperation and cooperation with institutions have a positive and significant effect, while government cooperation has no significant effect on innovation.

Lefebvre, Steur, and Gellynck (2014) examined the relationship and influence of different external sources on product, process, market, and organizational innovation in 214 SMEs in the food industry in several European countries, namely Belgium, France, Hungary, Ireland, Italy, and Sweden. . The results of this study show that collaboration of SMEs with customers is important for product innovation in food, while collaboration with competitors is more important for organizational innovation in this type of company.

Hypotheses

Based on the the literatur review above and the objective of this research, we propose a conceptual model that will be tested by empirical data. In this study we attempt to test the links between cooperation and innovation capability and type of innovation, as well as the link between cooperation and type of innovation of export-oriented SMEs in Indonesia. Therefore, the following hypotheses can be proposed:

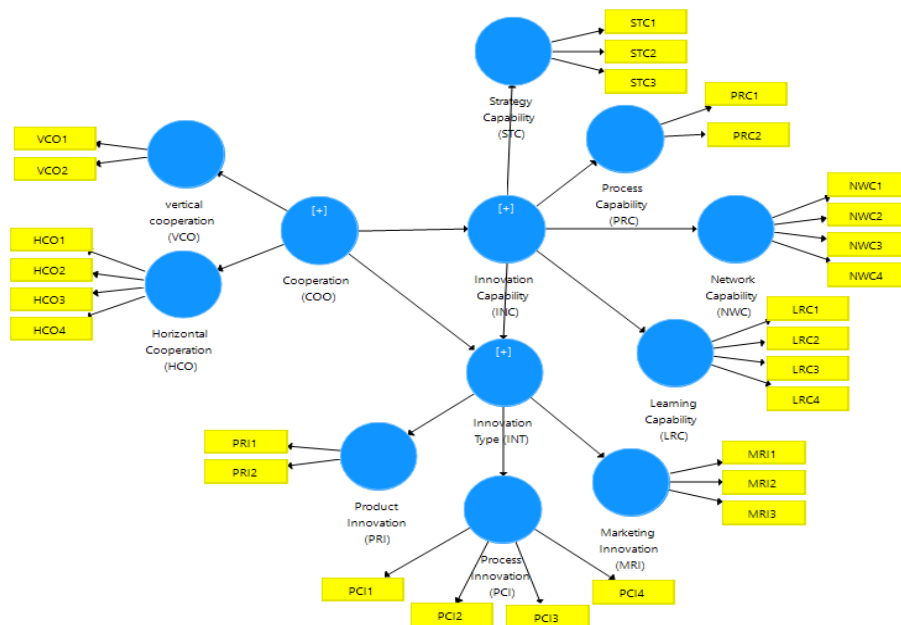
H₁. The effect of Cooperation is significant on innovation capability of SMEs.

H₂. The effect of Innovation capability is significant on innovation types of SMEs.

H₃ The effect of Cooperatio on Innovation Type is significant of SMEs.

H₄. The effect of Cooperation thourgh Innovation Capability on Innovation Types is significant on innovation type of SMEs.

Figure 1 depicts that cooperation consists of two dimentionts (vertical cooperation and horizontal cooperation, innovation capability consists of four dimension (staretgty capability, process capability, network capability, learning capability) and innovation type consistsof three dimensions (product innovation, process innovation and marketing innovation).



H2

Figure 1

Model of relationship between Cooperation Innovation Capability and Innovation Type

METHOD

Sample and data collection

The unit of analysis is export-oriented SMEs located in Bali, Jakarta, West Java, East Java and Central Java. The SMEs in question are not differentiated based on the type or production sector, because the authors are of the view that the factors examined in this study can apply in general to all SMEs. The research observation unit is the manager of each SME's. The manager in question is the top manager or top manager of the company. Furthermore, the number of samples in the study was calculated from a total population of 317 SMEs. Based on the Slovin formula, 176 samples were obtained.

Evaluation of the Measurement Model

Evaluation of the measurement model or outer model is carried out to see the validity and reliability of the model. The outer model with reflexive indicators is evaluated through the convergent and discriminant validity of the indicators forming the latent construct and composite reliability as well as Cronbach alpha for the indicator block (Ghozali, 2014). In this study, the validity test used was through confirmatory factor analysis, namely by testing the convergent and discriminant validity. The reliability test was carried out to show the accuracy, consistency and accuracy of the instrument in measuring the construct.

The model is evaluated using R-square for the dependent construct. Use of R-square (R²) to explain the effect of certain exogenous latent variables on endogenous latent variables whether they have a certain effect. R-square values (R²) with scores of 0.67, 0.33, and 0.19 indicate that the model is strong, moderate, and weak (Chin et al., 1998 in Ghozali and Latan, 2015). Q² predictive relevance is used to present a synthesis of validation and fitting functions with predictions of manifest variables and estimates of construct parameters. (Ghozali and Latan, 2015)

In evaluating the fit of the model, several goodness-of-fit indices were used. Goodness of fit or GoF index was developed by Tenenhouse et al. (2004) which was used to evaluate the measurement model and the structural model. In addition, it also provides a simple measure of the overall prediction of the model. The criteria for GoF values are 0.10, 0.25, and 0.36 which indicate that GoF is small, GoF is medium, and GoF is large (Ghozali and Latan, 2015). The GoF value is calculated by the square root of the average communality index and average R-square values (Tanenhouse et al., 2004 in Ghozali and Latan, 2015).

Data analysis

We used a path analytical approach in order to test the hypothesized relationship in our models. Path analysis allows us to assess the magnitude and significance of the underlying causal relationship between our study variables (Asher, 1983). For processing data by the path analytical approach, we used Smart PLS 3.

DISCUSSION

Validity and Reability test

Outer model analysis is carried out to ensure that the measurement used is feasible to be used as a measurement (valid and reliable). Testing the outer model in this study includes convergent validity, discriminant validity, and construct reliability.

Convergent validity test is an indicator that is assessed based on the correlation between the item score and the construct score which can be seen from the standardized loading factor. This indicator shows the magnitude of the correlation between each measurement item (indicator) and its construct. Individual reflexive measure is said to be high if it has a correlation > 0.7 with the construct to be

measured. Meanwhile, according to Chin quoted by Ghazali and Latan (2015), the outer loading value between 0.5-0.6 is considered sufficient. The results of the convergent validity test on the indicator variables of cooperation, innovation capability and type of innovation with a reflective measurement model obtained the loading factor value of the indicator more than 0.7 so that the indicator of the variable has met convergent validity.

Discriminant validity is a measurement model that are assessed based on cross loading measurements of the constructs. If the construct's correlation with item measurement is greater than the size of the other constructs, it indicates that the constructs correlation is better than the others. So that the indicators of each variable of competence, knowledge management, partnership, innovation capability, type of innovation, and export performance have met the discriminant validity test.

In this, a reliability test was carried out on the indicators to be used for each variable. The reliability test coefficient values were obtained using the Cronbach's Alpha instrument and composite reliability for the statement items contained in all variables. All statement items are declared valid because the value is above 0.7. Therefore, that all statement items for all variables can be used as indicators to assess all variables in the study.

Sample Characteristic

In Indonesia Act Number 20 of 2008, the criteria for small and medium enterprises are as follows,

1. Medium-sized businesses are businesses that have assets of more than IDR 500 million to IDR 10 billion and a turnover of above IDR 2.5 billion to IDR 5 billion.
2. Small business, is a business that has assets greater than IDR 50 million to IDR 500 million and a turnover of above IDR 300 million to IDR 2.5 billion.

Based on the results of the study, the ratio of small and medium enterprises that export is 60%. There are 105 respondents including the criteria for medium enterprises and the remaining 40% or 71 respondents including the criteria for small businesses. Based on the category of types of goods produced according to the 2009 Indonesian Standard Classification of Business Fields (KLBI) which conforms to the International Standard Industrial Classification of All Economic Activities (ISIC) Rev 4, Most of the respondents were in the manufacture of furniture sector of 89 respondents or 51%.

The profile of the respondents is illustrated in appendix table 1. Mostly of them were male namely 123 respondents or 70%, while female was 53 respondents or 30%. Their age was between 41 -50 years, namely 96 respondents or 54.4%. Majority of them had achieved a undergraduate in terms of academic qualification, namely 106 respondents or 60%.

Testing of Hypotheses

Hypotheses 1:

Regression analysis was used to test the effect of Cooperation (COO) on Innovation Capability (INC). The regression analysis result in Table 1 indicates that COO is significant related to the INC. The adjusted R-squared was obtained at 0.442 with a significant level $p < 0.001$. Therefore, this finding supports hypothese 1.

Table 1 Hypothese 1 Test

Hypotheses	Relationship	Path Coeffisien	Std. Dev	t-statistics	p-values	Result
1	Cooperation (COO) → Innovation Capability (INC)	0.665	0.059	11.259	0.000*)	Significant

*Level of confidence 1%

Hypothese 2

Regression analysis was used to test the effect of Innovation Capability (INC) on Innovation Performance (INT). The regression analysis result in Table 2 indicates that INC is significant related to the INT. The adjusted R-squared was obtained at 0.442 with a significant level $p < 0.001$. Therefore, this finding supports Hypothese 2.

Table 2 Hypothese 2 Test

Hypotheses	Relationship	Path Coeffisien	Std. Dev	t-statistics	p-values	Result
2	Innovation Capability (INC) → Innovation Type (INT)	0.342	0.0915	3.743	0.000*	Significant

*Level of confidence 1%

Hypothese 3

Regression analysis was used to test the effect of Cooperation (COO) on Innovation Type (INT). The regression analysis result in Table 3 indicates that COO is insignificant related to the INT . The adjusted R-squared was obtained at 0.442 with a insignificant level $p > 0.001$. Therefore, this finding does not support hypothese 3

Table 3 Hypothese 3 Test

Hypotheses	Relationship	Path Coeffisien	Std. Dev	t-statistics	p-values	Result
3	Cooperation (INC) → Innovation Type (INT)	-0.099	0.102	0.968	0.333 *	Unsignifical

*Level of confidence 1%

Hypotheses 4

Regression analysis was used to test the effect of Cooperation (COO) through Innovation Capability (INC) on Innovation Performance (INT). The regression analysis result in Table 4 indicates that COO is significant related to the INT through the INC. The adjusted R-squared was obtained at 0.442 with a significant level $p < 0.001$. Therefore, this finding supports hypothesis 4

Table 4 Hypotheses 4 Test

Hypotheses	Relationship	Path Coeffisien	Std. Dev	t-statistics	p-values	Result
4	Cooperation (COO) → Innovation Capability (INC) → Innovation Type (INT)	0.2774	0.0603	3.775	0.000	Significant

*Level of confidence 1%

Mediating Analysis

The mediating effect of Innovationa Capability (INC) on the relationship between Cooperation (COO) and Innovation Type (INT) was tested based on a mediating analysis procedure specified by Lnych dan Chen (2010). The result of the test show that the INC serves as the *Indirect only mediation*. It is based on the assumption if the indirect relationship unsignifikan while the direct relationship is significant. It can be seemed in the table 5.

Table 5 Mediating Analysis

Relationship	Characteristic	Hypotheses test	Role of mediating
Cooperation (COO) → Innovation Capability (INC) → Innovation Type (INT)	<i>Indirect</i>	Significant	Indirect Only Mediation
Cooperation (COO) → Innovation Type (INT)	<i>Direct</i>	Unsignificant	

The cooperation has a significant and positive effect on innovation capability. This means that the better the cooperation, the better the innovation capability will be. Initial assumptions based on phenomena in the field indicate that the problem for SMEs is a lack of capability to collaborate and develop networking. These limitations prevent SMEs from obtaining potential resources and opportunities that can support their business development, such as the availability of raw material supplies, availability of labor, information about market opportunities, and others.

The results of the study show that SMEs that have successfully exported have a fairly good cooperation with several partners and have a wide enough network so that they are able to obtain resources to be able to support and develop their business. The results of this study are in line with Najib and Kiminami (2011) who conducted research on the effect of partnerships on innovation in food processing industry SME clusters in Indonesia. The results of research and statistical tests show that partnerships have a positive and significant effect on innovation. Karla Díaz, Utem Rietdorf, and Utz Dornberger (2011) conducted a study of 148 SMEs located in Mexico and the results showed that partnerships had a positive and significant effect on innovation.

The results of mediating analysis prove the initial assumption that if SMEs have broad cooperation will be able to increase innovation capabilities which include strategic capabilities, network capabilities, process capabilities, and learning capabilities. Furthermore, with this capability, SMEs will be able to produce innovations that include product, marketing, or process innovation. Cooperation is not able to create an innovation output directly. Cooperation that owned by SMEs will increase their capabilities. With this capability, it will be able to produce an innovation.

CONCLUSION

Based on the results of the study of the effect of cooperation and innovation capability on types of innovation, several conclusions can be drawn as follows.

1. The innovation capability model for export-oriented SMEs in Indonesia is supported by implementing of cooperation
2. Cooperation that is implemented by export-oriented SMEs include factors of vertical cooperations and horizontal cooperations. The dominant role is horizontal partnerships, namely partnerships implemented with partners in educational institutions or business incubators, financial institutions, government institutions or related agencies, as well as with associations or industrial communities or exporters, and so forth.
3. Innovation capability in export-oriented SMEs includes the dimensions of strategic capability, network capability, process capability, and learning capability. These four dimensions of capability have an important role for SMEs so that SMEs have the capability to be able to produce types of innovation within their companies. The dominant role is network capability and strategy.

4. The types of innovation produced by export-oriented SMEs include product innovation, marketing innovation, and process innovation. The dominant types of innovation are marketing innovation and process innovation.

These findings can serve as a reference for academics to conduct further research and development on the topics of cooperation, innovation capabilities and types of innovation. Further research can be conducted to explore the dominant factors produced in this research, such as horizontal cooperation, in order to obtain development of the dimensions and indicators of these dominant factors. This research is limited to SMEs in the area of 5 provinces, namely Bali, East Java, Central Java, West Java and DKI Jakarta which do not cover all regions in Indonesia. It is hoped that further research will be carried out with samples in all regions of Indonesia.

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