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THE INTERNATIONALIZATION INTENTION OF SMALL AND MEDIUM-SIZED ENTERPRISES: THE INFLUENCE OF PRODUCT AND PROCESS INNOVATION

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Abstract. The contribution of SMEs to the national GDP is dominant, however the level of export from this business group is relatively small. Numerous factors related to internal and external factors contribute to the low SMEs participation in exporting their products to global markets. Firms undertake international activities gradually from the initiation stage to the growth stage. In the initiation stage, firms establish their intention to make internationalization. This study focuses on the initial stage because of the small number of SMEs that have made internationalization. Previous studies demonstrate that the innovation factor has a significant effect on the internationalization intention of SMEs, however the innovation is considered as a black box. The purpose of study is to uncover a black box of innovation by analyzing dimensions of innovation factor and to develop a model that explains the relationship between those dimensions and the internationalization intention. We posit that product and process innovation as dimensions of innovation have positive influence on the internationalization intention, and process innovation has a moderating role in the relationship of product innovation and internationalization intention. A field study by distributing questionnaires to SMEs was conducted and the collected data was used to analyze the model by Partial Leas Squares – Structural Equation Modeling (PLS-SEM). The results show that product and process innovation have significant effect on the internationalization intention with coefficients of 0.256 and 0.573 respectively. We also find that process innovation has a significant moderating role in the relationship of product innovation and internationalization intention.

Keywords: Innovation; Internationalization intention; Product and process innovation; SMEs

INTRODUCTION

Small and medium-sized enterprises (SMEs) have a strategic role in developing Indonesia's economy through providing employments for Indonesian people and distributing the results of nation's economy development across the country. According to the BI report the contribution of SMEs to national GDP in 2012 was 59.08% (BI, 2015). Although the contribution to national GDG from SMEs is higher than from large enterprises, the contribution of SMEs to the export volume is relatively small at 14.06% (BI, 2015). Francioni et al. (2016) reveals that SMEs have smaller contributions to an internationalization process such as export-related activities than large companies have. Therefore it becomes important to study SMEs internationalization. We focus on internationalization intention because there are a few of SMEs in Indonesia that have market their products internationally.

Previous studies have highlighted the impact of internal and external factors on internationalization. Internal factors are related to any controllable aspects in an organization such as human resources (Cerrato & Piva, 2012; Omri & Becuwe, 2014), innovation (Belso-Martinez, 2006; Cassiman et al., 2010; Serra et al., 2012), networking (Belso-Martinez, 2006; Omri & Becuwe, 2014), marketing (Belso-Martinez, 2006). External factors that are uncontrollable include the quality of domestic institution (Manolopoulos et al., 2018), governmental support, domestic market (Morais & Franco, 2018). The study focuses on internal factors that suppose to have impact on the SMEs internationalization. Francioni et al. (2016) suggested that the study on SMEs internationalization could be directed to investigate the internal factors. In this study we do not embrace all internal factors, but we focus on innovation as a determinant of SMEs internationalization According to BI (2015) one of weaknesses of SMEs in Indonesia that reduces SMEs competitiveness is related to weak innovation. The limited innovation in SMEs could reduce their readiness to market their product internationally. Innovating enterprises tend to become exporters than non-innovating enterprises (Cassiman et al., 2010). Therefore we conduct this study to obtain clearer understanding of the role of innovation in the context of SMEs internationalization.

Some studies have highlighted the importance of innovation activities in driving firms to compete in international marketplace. The study of Belso-Martinez (2006) reveals that technological orientation of the product is one of determinants of SMEs export performance and export intensity. Cassiman et al. (2010) studied how the innovation in SMEs induced them to enter the international markets. Bodlaj et al. (2018) have studied the role of product, organizational, and marketing innovations in SMEs' internationalization. Although there are previous studies that have investigated the innovation in SMEs internationalization, however the studies still regarded the innovation as a black box or they have not investigated the interaction between

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dimensions of innovation. Therefore the present study will investigate the role of product and process innovation as dimensions of innovation in the SMEs internationalization. Based on the beforehand description, we address the following question:

RQ: How do the product and process innovation influence the SMEs internationalization intention?

LITERATURE REVIEW

Internationalization is the process of increasing involvement in international operation (Bagheri et al., 2019). Firms undertake international activities gradually from the initiation stage to the growth stage. In the initiation stage, firms establish their intention to make internationalization. In this research we focus on the intention of internationalization of small-medium enterprises because internationalization is an uncommon practice for SME's in Indonesia. Internationalization intention has two forms of interpretation that is the intention of non-exporting firm to become an exporter, and the intention of an exporting firm to increase the export intensity (Morgan & Katsikea, 1997). This research adopted the first interpretation by focusing on the intention of non-exporting small-medium enterprises to market their product internationally.

Previous studies show the influential factors in the internationalization intention of SMEs. One of them is the innovation activities-related factor that could drive firms to market their products to the international marketplace. According to OECD (2005) innovation is defined as "the implementation of a new or significantly improved product (good or services), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations". Innovation is classified into four types of innovation namely product, process, marketing, and organizational innovations (OECD, 2005). The study confines the innovation to product and process innovation as an initial step to evaluate the innovation in Indonesian SMEs.

Literatures suggest that innovation has a significant impact on organizational performances. There is the relation between R&D activities and export decision (Girma et al., 2008). Firms with a radical or an incremental innovation are more likely to have internationalization either radically or incrementally (Chetty & Stangi, 2010). Firms which perform innovation activities tend to possess capabilities in generating new products, processes, and techniques (Falk & Lemos, 2019). Successful product and process innovation could increase a competitive advantage of a firm in the market (Falk & Lemos, 2019). Previous studies show that innovation activities have a positive influence on the intention of internationalization. The study of Falk and Lemos (2019) shows that R&D activities impact positively on export behavior of small-medium sized firms in Austria. Product innovation enables firms to develop their products that meet the ever-changing customer requirements. Girma et al. (2008) suggests that product differentiation translates into competitive advantages that enable a firm to compete in international markets. Successful product innovation could drive the firm to enter the international market (Cassiman et al., 2010). Based on this argument we propose the hypothesis below.

H1: Product innovation has a positive direct effect on internationalization intention in SMEs.

Process innovation is defined as innovation in the form of inputs, activities, and outputs (Bagheri et al., 2019). Process innovation is expected to affect technical efficiency (Cassiman et al., 2010). According to Bagheri et al. (2019) process innovation has positive relationship with international performance in small-medium sized enterprises. Innovation activities result in benefits such as brand loyalty and reduced price sensitivity, increased productivity (Bagheri et al., 2019). Through innovation, firms could respond the new market dynamics quickly and develop creative products that enable firms to differentiate themselves in international competition (Bagheri et al., 2019). The explanations about the role of process innovation lead us to posit the following hypothesis.

H2: Process innovation has a positive direct effect internationalization intention in SMEs.

Firms have to possess technical capability to transform a product design into a real product. Product innovation activities result in various and more complicated products. As a consequence firms should increase their technical capability through process innovation activities. SMEs that introduce new products to foreign market need to develop a new process (Bagheri et al., 2019). Thus the impact of product innovation on the internationalization intention will be stronger when the firm performs process innovation. Based on this argument we advance the following theory.

H3: Process innovation moderates the relationship between product innovation and internationalization intention.

According to the explanations above, we propose the model of internationalization intention (see Figure 1) that describes the relationship between product and process innovation and internationalization intention.

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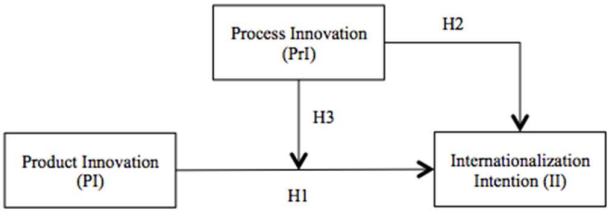

Figure 1. Internationalization intention model

METHODOLOGY

Instrument Development

We develop an instrument for measuring variable internationalization intention, product innovation, and process innovation. The instrument was developed based on various literatures. Table 1 displays the list of indicators for each questionnaire.

Table 1. Instrument for measuring the variables

Variable	Operational definition	Indicators	Sources
Internatio-nalization intention (II)	The intention of a firm to export to international markets.	Our company perceives that export activities are important for company development.	Serra et al. (2012)
		Our company has commitment to export activities.	
		Our company has export activities-related information.	
		Our company has readiness to manage export-related risks.	
Product innovation (PI)	Degree of developing or improving products with respect to their characteristics.	Our company has introduced a number of new products to market.	Bodlaj et al. (2018) and Bagheri et al. (2019)
		Our company constantly emphasizes the development of particular products.	
		Our company develops a new product rapidly.	
		Our company continuously modifies design of products.	
		Our company improves the performance of existing products.	
Process innovation (PrI)	Degree of implementing the latest process technology.	Our company has technology competitiveness.	Bagheri et al. (2019)
		Our company adopts the latest technology in production process.	
		Our company often makes changes in production process, technique, and technology	

Data Collection

We distributed questionnaires to small-medium sized enterprises in Bandung through offline survey to make sure that the respondent who filled the questionnaires was the representative of SME. Convenience sampling was conducted either by visiting the SMEs or by mailing them for two months. The eligible respondent was a person in the firm who understood internationalization process, i.e. owner or the leader of enterprise. We obtained 86 completed questionnaires for examining the model. Based on number of employee criteria for classifying business size, most companies involved in the study were micro and small enterprises with less than 30 employees. Their turnovers are distributed equally in the range of less than Rp.300 millions, between Rp.300 millions and Rp.2.5 billions, and more than Rp.2.5 billions. They run their business mostly in textile and garments sector. Almost all companies are the family-ownership companies that are established and managed by a family. The male entrepreneur still dominates the business which 74.29% of entrepreneurs. Most performers of SME's have education background from senior high school and bachelor degree with their age is mostly above 50 years old.

Model Examination

Due to the small number of samples, we implement the Partial Least Squares – Structural Equation Modeling (PLS-SEM) technique to examine the model. PLS-SEM is suitable for analyzing the model when the number of samples are small and data deviates from normal distribution (Hair et al., 2014). Although PLS-SEM does not require normal distributed data, however the large deviation from normal distribution can inflate standard errors obtained from bootstrapping (Hair et al., 2014). We tested the data normality before model examination by using MVN a web-tool for assessing multivariate normality (Korkmaz et al., 2014). The normality testing was conducted in three iterative until we obtained normal data by eliminating outlier data at each iterative. From 86 initial samples, we have 73 samples remained and are used to examine the model.

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FINDINGS AND ARGUMENT

Results of Measurement Model Examination

We obtain results of model examination that consist of measurement and structural model examination. Based on the result of data analysis, we find that the measurement model has good reliability and validity. Each scale of the constructs has composite reliability scores and average variance extracted (AVE) greater than 0,70 and 0,50 respectively which means each scale is reliable and has met convergent validity. The results of analysis also indicate the measurement model has achieved discriminant validity. Matrix of Fornell-Larcker (see Table 3) shows that the scores of the square root of AVE of each construct (see diagonal elements in the matrix) are higher than the correlations between constructs. Based on the matrix, we conclude that the measurement model has fulfilled the Fornell-Larcker criterion. Therefore we have accomplished the discriminant validity. Table 2 displays the reliability scores, the AVE of the constructs, and Fornell-Larkcer criterion.

Table 2. Composite reliability scores, AVE of the constructs, and Fornell-Larkcer criterion

Variable	Composite Reliability	Average Variance Extracted (AVE)	Fornell-Larkcer Criterion		
			II	PI	PrI
Internationalization intention (II)	0.840	0.643	**0.802**		
Product innovation (PI)	0.952	0.798	0.632	**0.893**	
Process innovation (PrI)	0.931	0.818	0.775	0.751	**0.905**

Results of Structural Model Examination

We analyze the structural model to test the relationship between constructs. Our model posits that there are two direct relationships, namely the relationship between product and process innovation with internationalization intention; and moderating effect of process innovation on the relationship between product innovation and internationalization intention. The examination of model uses PLS-SEM and the results of analysis are displayed in Table 3.

Table 3. Results of hypothesis testing

	Hypothesis	Path Coefficient	T Statistic	P Value	Conclusion
H1	PI -> II	0.256	1.286	0.099	Supported*
H2	PrI -> II	0.573	3.404	0.000	Supported***
H3	Moderating Effect -> II	0.194	2.011	0.022	Supported**

* : significance level at 0.1; ** : significance level at 0.05; ***: significance level at 0.01

Discussions

The results indicate a positive and significant relationship between product innovation and process innovation and internationalization intention, with coefficients of 0.256 and 0.573 at significance levels of 0.099 and 0.000 respectively. Hence H1 and H2 are supported by the empirical data. Moderating effect of process innovation on the relationship between product innovation and internationalization intention is significant at level 0.022 with coefficient of 0.194. The tested model has a moderate degree of accuracy for internationalization intention with an adjusted R^2 value of 0.607.

All hypotheses that we propose have strong support from the empirical data. These findings elaborate the current knowledge of the role of innovation factor in SMEs internationalization by analyzing the factor of innovation into dimensions namely product and process innovation. Previous studies considered innovation as a black box that influenced the SMEs internationalization. Our findings reveal that product and process innovation as dimensions of innovation have direct effect on the internationalization intention. The results of out study are consistent with the study of Cassiman et al. (2010) that display the positive influence of product innovation on productivity and on inducing small non-exporting firms to enter the export market; the study of Serra et al. (2012) that demonstrate the positive impact of competitive advantage of the product and process orientation on the propensity to export; and the study of Bodlaj et al. (2018) that show the positive contribution of product innovation on the success of SMEs internationalization. We have a contrary result with previous studies i.e. the significant impact of process innovation on internationalization intention in the study is dissimilar from the result of Cassiman et al. (2010) study that displays the insignificant effect of process innovation on internationalization intention. Theses findings imply that SMEs, which have capabilities in developing products and mastering the latest technology, tend to have intention to export their products. These capabilities boost the confidence of SME's entrepreneurs to enter the international market. The results of study also enhance our knowledge of the interaction between dimensions of innovation. Based on the findings there is moderating effect of process innovation on the relationship between product innovation and internationalization intention. The process innovation enables a company to process its product designs into real products. The more complicated design of product, the more the process

innovation required. This result is consistent with the study of Bagheri et al. (2019) that product and process innovation as a composite index influence positively the internationalization of SMEs. The finding suggests that SMEs can exploit their product innovation when they have process innovation.

CONCLUSIONS

SMEs that have good product and process innovation tend to have strong intention to internationalization. According to the result of model examination, product and process innovation have a significant effect on internationalization intention. Thus to boost SMEs contribution to the national export, SMEs should be encouraged and supported to enhance their innovation activities. The study reveals that the influence of product innovation on the internationalization intention becomes stronger when it interacts with process innovation. Therefore to reach optimal result from innovation activities, SMEs should develop product and process innovation simultaneously.

We have a limited number of samples for testing the model so that the results are less précised. To enhance the precision of the results, we need to add the number of samples. The study also has not examined the external validity of the model. Case studies could aid us in dealing with the issue of external validity. Further research that relates to investigate the current level of Indonesian SMEs innovation can also be conducted. It is expected to obtain a clear understanding of the SMEs innovation level in Indonesia so that we can formulate improvement direction for SMEs to increase their innovation level.

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