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Factors Influencing SMEs' Engagement in Direct Exporting Activities

Mohamad D. Revindo ^{1*} & Christopher Gan²

Abstract

The benefits of trade liberalisation are not shared equally among countries and enterprises across the globe. Small and Medium-sized Enterprises (SMEs) in developing countries are less able to participate in export market than their large counterparts despite various export assistance provision by the government. This study aims to investigate the factors influencing Indonesian SMEs' decision and ability to engage in direct exporting activities. The evidences were collected from 271 exporting SMEs and 226 non-exporting SMEs in seven provinces in Jawa, Madura, and Bali regions. Logistic regressions were used to identify the distinct characteristics of exporting SMEs. The findings show that the exporters differ from non-exporters in firm and owner characteristics, perceived export barriers, participation in government export assistances and network relationships. The policy and managerial implications of the findings are discussed.

JEL Classification: F23; L25; M13; M16; O17

Keywords

SMEs — Firm Internationalisation — Export Decision — Export Barriers — Indonesia

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1. INTRODUCTION

Trade liberalisation brings about challenges as well as opportunities for firms across the globe. It forces local firms to compete with cheaper imported products and multinational enterprises, while providing them with opportunities to export, adopt foreign technologies and operate in foreign markets (Awuah & Amal, 2011; Knight, 2000; Ruzzier et al., 2006). Both domestic market pressure and foreign market openness push firms to internationalise, defined simply as a process of a firm's increasing involvement in international business operations (Welch & Luostarinen, 1999) or the process of adapting firm's operations (strategies, structures and resources) to international environments/markets (Calof & Beamish, 1995). Thus the broad definition of firm internationalisation includes inward, outward, and cooperative international activities as a firm's engagement in international operations may take various forms including exporting, importing, investing abroad, licensing or cooperating with foreign firms (Ruzzier et al., 2006).

Firm internationalisation has been rapid and evident at least over the last two decades. For example, during 2001–2014 the world's merchandise export value had more than tripled from 6.1 to 18.9 trillion USD (ITC, 2016a) and the global exports in services recorded nearly a 3.5-fold increase from 1.47 to 5.12 trillion USD (ITC, 2016b). During the same period, the world's foreign direct investments (FDI) outward stocks rose more than 3.3 times from 7.77 to 25.87 trillion USD (UNCTAD, 2014, 2015). The steady growth of trade and FDI helped the global economy to sustain positive gross domestic product (GDP) growth in that period (2.58% annual average), albeit being interrupted by the 2007–08 global financial crisis (World Bank, 2016). At

the firm level, trade openness also helped a great number of firms worldwide to sustain their businesses and maintain growth and productivity (OECD, 2012).

However, the benefits of trade openness are not reaped equally among countries and enterprises. Despite the growing importance of developing countries in world trade, 34 OECD member states still accounted for 56–60% of world merchandise export value during 2010–15 (ITC, 2016a). At the business level, large enterprises are more prepared to capitalise on trade opportunities compared to small and medium-sized enterprises (SMEs). For example, in the mid-2000s SMEs in the US, Switzerland, the Netherlands, United Kingdom, China and Japan only contributed 30–38% of their respective national exports (Hammer & Stamps, 2010). SMEs' contributions have also been modest in the more advanced modes of outward internationalisation (i.e. services export and outward FDI) (Adlung & Soprana, 2013; Dalli, 1995; Kogut & Chang, 1996). SMEs' meagre export contributions are even more prevalent in developing countries. For example, SMEs in ASEAN member states on average only accounted for 23% of total exports (Wignaraja, 2012).

Likewise, in Indonesia SMEs' (including micro enterprises) share in total export was minuscule despite being a major source of business establishments, employment opportunities and value added creation.¹ During 2005–13 SMEs made up 99.99% of the total business entities, provided more than 97% of job opportunities and contributed around 56–59% of the Indonesian GDP (Ministry of Coop-

¹Prior to the implementation of the Law No. 20 (*Undang-undang No. 20 Tahun 2008 tentang Usaha Mikro Kecil dan Menengah* [Law on Micro, Small and Medium-Sized Enterprise Number 20 of 2008] (2008), the "Small-sized Enterprise" term generally included small and micro-enterprises.

eratives and SMEs Republic of Indonesia, 2009b, 2010a,b, 2013, 2014a, 2015). By contrast, despite Indonesia's steady rise in total annual export value, SMEs' share in non-oil and gas exports continually shrank from around 18.5% in 2005-07 to 16.9% in 2008-10 and further down to 15.4% between 2011 and 2013.²

Thus, Indonesian SMEs are less able to take advantage of export opportunities from trade liberalisation compared to their larger counterparts (Wengel & Rodriguez, 2006). Indonesian SMEs also fare less well in export performance compared to SMEs in other ASEAN countries (Wignaraja, 2012) and perform far below SMEs in developed countries (Hammer & Stamps, 2010). SMEs' poor export performances persist despite various policy measures launched by the Government of Indonesia (GOI), including general assistance (such as access to credit, technical and managerial training) as well as specific export-related assistance (including trade promotion, business matching and training in export procedures).

Efforts have been made to address the problems faced by Indonesian SMEs to internationalise. For example, Sari (2011) and Sari et al. (2008) looked at the role of entrepreneur human and social capital in the internationalisation of manufacturing SMEs in selected provinces. Wengel & Rodriguez (2006) compared the export performance of SMEs and large firms and investigated the determinants of export performances. Tambunan (2009a,b, 2012) looked at the impact of trade facilitation, the advantage of industry clusters and the main constraints of SMEs' exporting, respectively. Jane (2013), Zubadi & Nugroho (2012), and Roida & Sunarjanto (2012) examined firms' internationalisation with case studies of SMEs in Bandung City, Magelang Regency and Jawa Timur Province, respectively. However, the extant literature on Indonesian SMEs is still short on explaining SMEs' processes and determinants to engage in exporting activities. Previous studies also lack of generalisability of the results due their specific sectors/industries or regions of research.

This paper aims to fill the gap in the extant literature on firm internationalisation with reference to Indonesia. We highlight the case of Indonesia, owing to Indonesian SMEs' inability to seize trade opportunity, along with Indonesia's rapid changes in its international trade environment and policy. Indonesia's increasing engagement in various free trade agreements (FTAs) force local products to compete directly with cheap imported merchandise in the domestic market, which in turn may severely threaten SMEs' business sustainability.³ We focused on Indonesian SMEs' direct export activities because export is an important source of economic growth and productivity and because SMEs are important sources of income and job provision in Indonesia as well as in other developing countries.⁴ Further, we covered SMEs

in seven provinces in Jawa, Madura and Bali regions where approximately 60% of SMEs in Indonesia is concentrated (Kuncoro, 2009; Wiratno & Dhewanto, Undated), therefore allowing generalisability of the results.

2. CONCEPTUAL FRAMEWORK

SMEs' inability to exploit the gain from international trade amidst the rapid growth of global trade indicates that SMEs face greater impediments and different challenges to internationalise than large enterprises. Scholars' interest in firm internationalisation emerged in the 1950s (Hymer, 1976) but only the later stream of research in this area has begun to pay more attention to smaller firms (i.e. SMEs) (Hollenstein, 2005; Onkelinx & Sleuwaegen, 2008). SME internationalisation has been studied separately from general firm internationalisation because SMEs have particular characteristics such as smallness and limited resources that may constrict their international business activities (Laghzaoui, 2007; Ruzzier et al., 2006).

Owing to their lack of resources, SMEs are averse to the risk of failure in international market operations. Hence, SMEs cautiously evaluate the expected benefit and cost of exporting before deciding to venture abroad. Following Bernard & Jensen (2004) and Ottaviano & Martinicus (2011), in the case that export engagement is a one-period decision, the firm formally maximizes its profits from exporting as follows:

$$\pi_{it}(q_{it}^*, Z_{it}, Y_{it}) = p_{it}q_{it}^* - c_{it}(q_{it}^*, Z_{it}, Y_{it}) \quad (1)$$

Where π_{it} is the export profit of firm i in period t . The firm's export revenue is the price of exported products (p_{it}) times the profit-maximizing level of exports (q_{it}^*). The variable cost of producing the exported goods (c_{it}) is the function of q_{it}^* , a vector of firm-specific features (Z_{it}) and a vector of environmental factors that are exogenous to the firm but affect its probability of exporting (Y_{it}). Therefore, the firm exports if the expected revenue exceeds the expected costs:

$$X_{it} = \begin{cases} 1 & \text{if } \pi_{it}(q_{it}^*, Z_{it}, Y_{it}) = p_{it}q_{it}^* - c_{it}(q_{it}^*, Z_{it}, Y_{it}) > 0 \\ 0 & \text{if } \pi_{it}(q_{it}^*, Z_{it}, Y_{it}) = p_{it}q_{it}^* - c_{it}(q_{it}^*, Z_{it}, Y_{it}) \leq 0 \end{cases} \quad (2)$$

Where X_{it} is a binary variable representing firm i 's export status at period t (1 = exporting, 0 = otherwise).

However, the firm may face export decisions in multiple periods (i.e. a sporadic exporter or a previous exporter). In this case, in addition to the variable costs, the firm also faces a sunk cost of foreign market entry (Bernard & Jensen, 2004; Ottaviano & Martinicus, 2011; Roberts & Tybout, 1997). Examples of foreign market entry cost are the cost of gathering information and establishing distribution systems in target markets. The entry cost is sunk in nature and thereby the firm that has already exported in the previous period does not have to pay in the current or future period. Hence, the firm's profit maximization from export activities is given as follows:

$$\pi_{it}(q_{it}^*, Z_{it}, Y_{it}) = p_{it}q_{it}^* - c_{it}(q_{it}^*, Z_{it}, Y_{it}) - N(1 - X_{it-1}) \quad (3)$$

direct investment and indirect export (selling intermediate products to local exporters).

²If oil and gas exports are included, SMEs' and micro-enterprises' contribution might be even lower since oil and gas exports are performed by large state-owned enterprises. Wignaraja (2012) estimated SMEs' contribution to Indonesia's total exports was at 9.3%.

³In August 2016, Indonesia had eight FTAs in effect, including ASEAN (1993), ASEAN-China (2010), ASEAN-Australia and New Zealand (2010), ASEAN-India (2010), ASEAN-Japan (2008), ASEAN-Korea (2007), Indonesia-Japan (2008), Indonesia-Pakistan (2013). Indonesia also has ongoing negotiations with several other regional and bilateral FTAs.

⁴We exclude other forms of outward internationalisation such as foreign

Where N is the sunk entry cost and X_{it-1} is the firm's export status in the previous period (1 = exported in the past, 0 = otherwise). Hence, the firm's export decision in period t is as follows:

$$X_{it} = \begin{cases} 1 & \text{if } p_{it}q_{it}^* > c_{it}(q_{it}^*, Z_{it}, Y_{it}) + N(1 - X_{it-1}) \\ 0 & \text{if } p_{it}q_{it}^* \leq c_{it}(q_{it}^*, Z_{it}, Y_{it}) + N(1 - X_{it-1}) \end{cases} \quad (4)$$

Despite their strong and clear insights, those revenue-cost models are difficult to estimate in the absence of precise measures and data in terms of the product's price in foreign markets and the variable costs of production. Alternatively, the export decision model can also be treated as the result of the factors that enhance the export, the factors that inhibit the export and firm characteristics (Shih & Wickramasekera, 2011) (see Figure 1). In this model, the enhancing factors may include the perceived benefits of exporting or the factors that stimulate the export such as government export assistances and network relationships. The inhibiting factors may include the cost of exporting and the perceived export barriers. The export market participation can be estimated with a probabilistic model with maximum likelihood estimation techniques (i.e. probit or logistic regression analysis). Some previous studies on export probability have been conducted on, amongst others, the Middle East and the North African region (Fakih & Ghazalian, 2014), Taiwan (Shih & Wickramasekera, 2011), USA (Yang et al., 1992), Argentina (Ottaviano & Martincus, 2011), and Colombia (Roberts & Tybout, 1997), but there is no reference to the case of Indonesian firms/SMEs.

3. EMPIRICAL METHODS

We departed from the theoretical framework that explained SMEs' export decision as a function of expected monetary revenue and expected costs of exporting activities (i.e. if the expected export revenue exceeds the expected cost of exporting, as shown in Equation 1-4) (Ottaviano & Martincus, 2011; Roberts & Tybout, 1997; Yi & Wang, 2012). We instead followed Shih & Wickramasekera (2011) who proposed a more general model of export engagement in which export decision is determined by enhancing factors, inhibiting factors and firm characteristics (illustrated in Figure 1). The main reason is that in the pilot survey we found that SMEs' accurate financial information was difficult to obtain. Many SMEs did not have good bookkeeping systems and many others were reluctant to reveal their financial information.

Since we aim to predict SMEs' export engagement with a set of explanatory variables and the target variable is a binary choice of SMEs' export engagement (to export or not to export), the ordinary least square (OLS) regression is not statistically appropriate (Hill et al., 2011; Maddala, 2001). Instead, we employ a binary logistic regression model to predict the probability of firm i engaging in export activities, given a set of enhancing factors, inhibiting factors and firm characteristics. Formally, the binary logit model procedure can be briefly explained as follows.

$$P_i = E(EXPORT_i = 1) = \frac{1}{1 + e^{-Z_i}} \quad (5)$$

Where $EXPORT_i$ is firm i 's export engagement status, which is equal to 1 if the firm is an exporter and equal to 0 if the firm is a non-exporter; P_i is firm i 's estimated probability of export engagement (high value of P_i implies a high probability to become an exporter); and

$$Z_i = \alpha + \sum_{j=1}^n \beta_j STIMULI_{ij} + \sum_{k=1}^p \gamma_k BARRIERS_{ik} + \sum_{l=1}^q \delta_l FIRM_{il} + \varepsilon_i \quad (6)$$

Where $STIMULI_{ij}$ is a vector of export stimuli; $BARRIERS_{ik}$ is a vector of export barriers; $FIRM_{il}$ is a vector of firm characteristics; and ε_i is the error term. The notations n , p and q represent the total number of variables representing export stimuli, export barriers and firm characteristics, respectively. The symbols α , β , γ and δ represent the constant and the vector of coefficients for the export stimuli, export barriers and firm characteristics, respectively.

As equation (5) represents the cumulative logistic distribution function, the probability of not engaging in export activities is given by:

$$(1 - P_i) = \frac{1}{1 + e^{Z_i}} \quad (7)$$

Thus, the odds of observing an exporting SME ($EXPORT_i = 1$) over non-exporting SMEs ($EXPORT_i = 0$) is:

$$\frac{P_i}{1 + P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} = e^{Z_i} \quad (8)$$

Taking the natural logarithm of equation (8), we obtain:

$$\ln\left(\frac{P_i}{1 - P_i}\right) = Z_i \quad (9)$$

Hence, Z_i (in equation 9) is the natural logarithm of the odds ratio in favor of observing exporting SMEs.

To obtain efficient parameter estimates, the logistic model uses maximum likelihood estimation techniques. The observed $EXPORT_i$ are the realization of a binomial process with probabilities given by equation 5 that vary by individual firm (depending on Z_i). Hence, the likelihood function (L) can be written as follows (Maddala, 2001):

$$L = \prod_{EXPORT_i=1} P_i \prod_{EXPORT_i=0} (1 - P_i) \quad (10)$$

We will carry out two binary logit estimations with two different sample subsets. In the first estimation, we investigate the factors that distinguish exporting and non-exporting SMEs. Thus, the dichotomous dependent variables take the values of 1 for exporters and 0 for non-exporters. In the second estimation, we focus on investigating the factors that distinguish exporting SMEs and non-exporting SMEs with intention/plan to export (aspiring-exporters). Hence, the dichotomous dependent variable takes the value of 1 for exporters and 0 for aspiring-exporters.

We use three groups of independent variables including export-enhancing factors, export-inhibiting factors and firm characteristics. Table 1 provides the description and

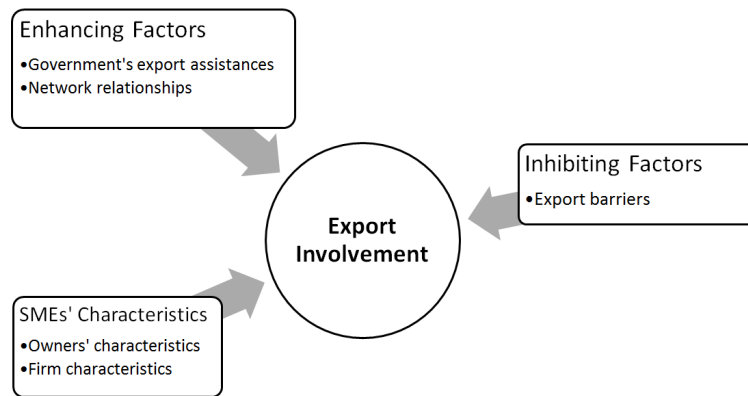


Figure 1. Conceptual Framework of Export Engagement Decision
Source: Adopted from Shih & Wickramasekera (2011)

Table 1. Independent Variables for the Export Engagement Model

Variables	Description	Priori Sign
Export Stimuli/Enhancing Factors		
OwnerStudyAbroad	SME owner's overseas study experience, where 1 if SME owner ever studied overseas, 0 otherwise	+
OwnerTrainAbroad	SME owner's training/short courses experience, where 1 if SME owner ever had training/short courses overseas, 0 otherwise	+
OwnerWorkAbroad	SME owner's overseas work experience, where 1 if SME owner previously worked overseas, 0 otherwise	+
OwnerWorkMNC	SME owner's MNC/exporting firm work experience, where 1 if SME owner previously worked with MNC or exporting firms, 0 otherwise	+
GovCentral_Assist	1 if SME received either promotional, business management, finance or production assistance from any central government agencies	+
GovtLocal_Assist	1 if SME received technical or managerial training, grants or promotional assistance from any local (provincial, regency or municipal) government agencies	+
NonGovt_Assist	1 if SME received any type of assistance from either business association/chambers, universities/research institutes, private companies/SOEs, business partners/associates, family/relatives or Indonesian emigrant communities	+
ProductXNational	SME's type(s) of product's share in Indonesia's total national non-oil and gas export	+
ProvinceXNational	Province's share in Indonesia's total national non-oil and gas exports	+
Inhibiting Factors		
Export Barriers	Factor scores/summed scale of export barrier components/dimensions resulting from the principal component analysis.	-
SMEs Characteristics		
FirmAge	Number of years the firm has been operating since firm's establishment by the time of the survey	+
TotalEmployee	Total number of employee	+
OwnerGender	Owner's gender, where 1 = male, 0 = female	+/-
OwnerAge	Owner's age at the time of the survey	+
OwnerEducation	Owner's educational attainment, where 1 = primary school or no formal education, 2 = junior or senior high school, 3 = college, diploma or vocational school, 4 = bachelor degree, 5 = postgraduate degree	+

the expected signs of the independent variables (the hypothesized relationship between the independent variables and the probability of SMEs' export engagement).

SME owners/managers' international experience and exposure are expected to have a positive effect to SMEs' export engagement. An internationally experienced management team tends to immediately explore foreign market opportunities after the firm's inception and has greater probability of building a business partnership with foreign distributors or buyers (Reuber & Fischer, 1997). Overseas living or working experiences positively correlate with information gathering or market intelligence (Williams & Chaston, 2004). A management team with international experience is also likely to have more personal contacts in foreign markets (Andersen, 2006). In our model, we use three variables to represent international exposure including overseas study experience (*OwnerStudyAbroad*), overseas training or short courses experience (*OwnerTrainAbroad*) and overseas work experience (*OwnerWorkAbroad*). In addition,

we also consider owners/managers' MNC or exporting firms work experience (*OwnerWorkMNC*) to have the same effect on internationalisation as overseas work experience.

SMEs' probability of becoming an exporter is expected to be enhanced by government export assistance (Demick & O'Reilly, 2000; Francis & Collins-Dodd, 2004; Oly Ndubisi et al., 2009; Wilkinson & Brouthers, 2006). We use *GovCentral_Assist* to represent various types of export assistance provided by central government agencies. These include international trade fairs (international shows, exhibitions and expos), SME catalogue publications, technical training (including specific production processes, packaging, logistics or machinery aimed at specific markets), managerial training (such as business planning, marketing, cultural differences awareness, language skills and knowledge of export procedures) and financial support (including export financing, export insurance and export guarantees). We use *GovtLocal_Assist* to represent various export assistance provided by provincial, municipal or regency government

agencies. These include technical training, managerial training, grants of equipment, grants of capital and trade fairs.

We expect assistance provision by external non-governmental actors in the network to positively affect SMEs' probability to engage in export activities (Demick & O'Reilly, 2000; Levy et al., 1999; Zain & Ng, 2006; Zhou et al., 2007). Hence, *NonGovt_Assist* represents financial, technical, managerial and promotional assistance received by SMEs from various non-governmental actors in the network. These include informal network sources (family, relatives, business associates and emigrant communities) or formal non-governmental sources (including business chambers/associations, SOEs and universities/research institutes).

We expect SMEs' export engagement probability to correlate with type of product, despite the extant literature being not fully conclusive on the direction of the relationship. It has been argued that SMEs have a better chance of exporting if they produce merchandise that is already demanded in foreign markets (buyer effect) and therefore many SMEs imitate the types of products (copying/imitation effect) (Wengel & Rodriguez, 2006). Conversely, it has been argued that product uniqueness can be one of SMEs' sources of competitive advantage in foreign markets (Barney, 1991; Chatterjee & Wernerfelt, 1991). In our model, *ProductXNational* represents type(s) of product's share in Indonesia's total national non-oil and gas exports. We expect SMEs to have a higher propensity to export if they produce a type of merchandise that is among Indonesia's main non-oil and gas exports.

We hypothesise that SMEs' export engagement is affected by their location (province). We expect that SMEs which operate in a province with a large contribution to Indonesia's total non-oil and gas exports are more likely to become exporters. Geographical agglomeration of exporters allows positive externalities, mainly in information spill overs (Silvente & Giménez, 2007), and access to export related services/infrastructure (Freeman et al., 2012).

The export inhibiting factors are represented by the perceptions on export barrier difficulties. Section 5.1 discussed the 50 types of export barriers that we used in the survey. We expect each type of export barrier to have negative correlations with SMEs' export engagement. The more difficult SMEs perceive a type of export barrier, the less likely they are to become exporters. However, we first reduce the 50 export barrier items into a smaller number of variables underlying broader dimensions of export barriers using the PCA (see Section 5.1). The summated scales/factor scores for each extracted and retained factor/component are calculated and used as input data in the regression model.

Two firm characteristics are used in our export engagement model. Firm age is hypothesised to have a positive effect on export engagement (Brush, 2012). As SMEs accumulate operational experience, they may accumulate capital or creditworthiness and establish an administrative structure and decision making process. The number of employees is expected to have a positive effect on export engagement. Employees are crucial when SMEs need to upgrade the product quality and meet foreign buyers' requirements (Ottaviano & Martincus, 2011).

Our model also controls three owner characteristics (gender, age and education). Owners' age and education

are hypothesised to have positive correlations with export engagement (Cavusgil & Naor, 1987; Obben & Magagula, 2003). However, the relationship between gender and export propensity is still inconclusive. On the one hand, it has been argued that female owners are less encouraged to expand the business beyond the domestic market and are less likely to have international experience (Orser et al., 2010). On the other hand, Welch et al. (2008) argue that female business owners have some gender-specific characteristics that may be valuable in export activities, such as patience, persistence, paying attention to detail and being passionate about the business.

4. DATA

This study focuses on small-sized and medium-sized enterprises (SMEs) and excludes micro-sized and large-sized enterprises.⁵ Among various definitions of SMEs, two definitions are widely used in Indonesia:

1. The Ministry of Cooperatives and SMEs defines SMEs as enterprises with assets valued at Rp50 million–Rp10 billion (equivalent to USD3,846.15–769,230.77) or with an annual turnover of Rp300 million–Rp50 billion (equivalent to USD23,076.9–\$3,846,153.8) (*Undang-undang No. 20 Tahun 2008 tentang Usaha Mikro Kecil dan Menengah* [Law on Micro, Small and Medium-Sized Enterprise Number 20 of 2008], 2008).⁶
2. BPS-Statistics Indonesia defines SMEs as enterprises with 5–99 employees (BPS-Statistics Indonesia, 2014a).

During the pilot survey, we found that at the practical level the identification of SMEs' assets and turnover value was difficult, laborious and potentially inaccurate. SMEs' asset valuation requires a complex appraisal method and SMEs' turnover estimations are not always available due to the poor bookkeeping. Hence, this study refers to the definition of SMEs by number of employees (5 to 99) used by BPS-Statistic Indonesia. Despite its applicability, it is worth noting that this definition also has shortcomings. Most notably, the SME definition by number of employees has potential bias towards capital-intensive industries. For example, this definition potentially includes some large-scale enterprises in capital-intensive industries that employ a small number of employees, but excludes medium-scale enterprises in labour-intensive industries that employ large numbers of workers.

The total number of SMEs in Indonesia was estimated at 678,415 units in 2012 (Ministry of Cooperatives and SMEs Republic of Indonesia, 2014b), approximately 60% of which are concentrated in only 3 islands; Jawa, Madura and Bali (Kuncoro, 2009; Wiratno & Dhewanto, Undated). This imbalanced SMEs' distribution largely reflects the economic agglomeration pattern in Indonesia that causes economic activity to be largely concentrated in those three closely related islands. The three islands consist of only seven provinces and constitute only 7.07% of the country's

⁵Micro enterprises are excluded for two reasons. First, the micro enterprises database is unavailable in Indonesia as they are mostly in the form of individual businesses or home industries. Second, micro enterprises are less likely to engage in international business (Pendergast et al., 2008).

⁶The exchange rate is assumed at Rp13,000/USD.

total land area but are inhabited by 57.5% of the country's total population and generate over 58% of the country's total GDP/value added (BPS-Statistics Indonesia, 2014b). Hence, the target population of this study is the SMEs that operate in seven provinces in Java, Madura and Bali islands. The three islands also have better transportation and communication infrastructure than the rest of the country, allowing better access to survey a large number of SMEs that are spread throughout the islands within the time and budget constraints.

In order to construct the sample frame, we merged four different databases into one list of SMEs from which the samples were picked. The first three databases were published by the Ministry of Cooperatives and SMEs including: (1) the Ministry of Cooperatives and SMEs' online trading board⁷; (2) SME and Cooperative Indonesia Catalogue (Ministry of Cooperatives and SMEs Republic of Indonesia, 2011, 2012)⁸; and (3) Exporting SMEs Directory book (Ministry of Cooperatives and SMEs Republic of Indonesia, 2009a)⁹. The fourth database is the Indonesian 2006 Economic Census provided by BPS-Statistics Indonesia.¹⁰

To capture SMEs' internationalisation processes and determinants, it is important that our study sample consist of SMEs in different export stages including exporting SMEs and non-exporting SMEs. The survey targeted at least 192 samples (half of the total calculated sample size of 384) for each exporting and non-exporting SME category (see Figure 2).¹¹ In addition, the total sample size is expanded by approximately 25% to increase the sample sufficiency. However, stratified sampling was not applicable because the export status of most SMEs in the sample frame was unknown prior to the survey. Therefore, a quota random sampling method was used in which the sampled SMEs were drawn randomly from the sample frame and their export status were known after the survey. The procedure was repeated until each SMEs' export status category was filled.

⁷Online promotion at the website of the Ministry of Cooperatives and SMEs, <http://www.indonesian-products.biz>.

⁸The catalogue provides SMEs' contacts and products description in four languages (English, Arabic, Japanese and Indonesian). The catalogue is published annually as part of the ministry's promotion program.

⁹The directory books listed all SMEs that participated in international trade shows organised by the Ministry of Cooperatives and SMEs' during 2005–2009.

¹⁰The BPS-Statistics Indonesia (National Agency for Statistics) performs economic censuses every ten years. When the survey for this study was conducted in 2014, the most recent census was the 2006 national census while the next census will be conducted in 2016 and published in 2018.

¹¹The population of SMEs in the study area (N) is approximated to be around 407,049 (approximately 60% of the total Indonesian SME population of 678,415). Owing to this large size of the target population, the sample size (n) is not expected to exceed 5% of the population (less than 20,352 SMEs) due to time and budget constraints. Hence, the following sample size formula for an infinite population is appropriate (Anderson et al., 2010; Crossley, 2008; Lee et al., 1999): $n = \left(\frac{Z_{\alpha/2} \sigma}{MOE} \right)^2$, where n is

the sample size; $Z_{\alpha/2}$ is the value of the two-sided confidence interval in normal distribution, σ represents the variation of the variable of interest and MOE is the desired margin of error. Assuming that $Z_{\alpha/2} = 1.96$ (corresponds to a 95% confidence interval), response distribution $\sigma = 0.5$, $MOE = 0.05$ and $N = 407,049$, the calculated sample size is 384. However, the sample size was increased by at least 20% (to at least a total sample of 461) to anticipate insufficiency and incomplete responses.

The survey was administered in April–August 2014. During the survey period, we contacted and approached 971 SMEs, 522 of which were willing to participate in the survey (a response rate of 53.76%). 449 SMEs refused to participate in the survey, had shut down the business or changed the number of employees beyond the 5–99 range. Of the 522 returned questionnaires, 497 were usable while 25 were unusable due to incomplete responses. The usable responses consisted of 271 exporting SMEs and 226 non-exporting SMEs and therefore the targeted total sample size and the specified quota were fulfilled. Further, within the 226 non-exporting SMEs category, there were 114 SMEs with the intention and plan to export (aspiring-exporters) and the other 112 had no intention to export in the future, which added more variation to the sample collected.

Table 2 shows the distribution of the sample by province and export status. A large number of responses were collected from Jawa Timur Province (185 SMEs, including Madura Island) and DKI Jakarta Province (100 SMEs). Both provinces are highly populated and industrialized. The remaining 212 respondents were distributed in the remaining five provinces (Banten, Jawa Barat, Jawa Tengah, DI Yogyakarta, and Bali).

Table 3 shows the distribution of surveyed SMEs by their products and export status. Seventy-four SMEs produce more than one type of product (multi products) while the remaining 423 SMEs specialise in a specific type of product, with the largest number in handicrafts (91 SMEs) and the lowest number in machinery components (18 SMEs).

Two sets of structured questionnaires with close-ended questions were developed and translated into *Bahasa Indonesia*. The first questionnaire set was designed for SMEs and the second for government institutions/agencies. Before the SME survey was administered, the questionnaire was piloted randomly to 25 SMEs in the Greater Jakarta region. The pre-test was carried out to obtain feedback to improve the content of the questions and the instructions, clarity, and layout of the questionnaire. The pre-test also gave important feedback on the questionnaire translation from English to *Bahasa Indonesia*. Response to the SME survey questions required a good knowledge of the enterprises' operational activities and therefore the questionnaires were administered to SMEs' owners or managers.

5. RESULTS

5.1 Export-Inhibiting Factors

We identify fifty specific export barrier types/items, previously developed by OECD-APEC (2006), Leonidou (2004), and OECD (2012). In the survey, all respondents were asked to indicate how serious/difficult each export barrier item in SMEs' export activities was in a three-point Likert-scale. The Likert-scale ranges from "not difficult" (response alternative 1), "difficult" (response alternative 2) to "very difficult" (response alternative 3).¹²

Principal component analysis (PCA) was performed on the survey responses for the 50 export barrier items' Likert scale questions to reduce the dimensions of the items

¹²For the use of a three point scale without a neutral scale in the survey for export barrier survey questions, see OECD (2012).

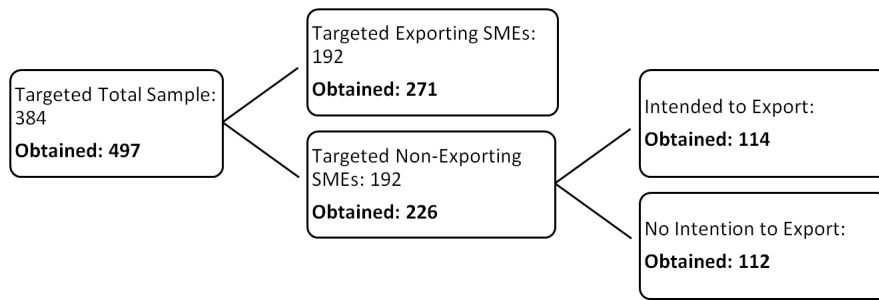


Figure 2. Sample Quota and Realization

Table 2. Sample Distribution by Province and Export Status

Province	Exporter		Non-Exporter		Total by Province	
	Count	%	Count	%	Count	%
Banten	11	4.1	4	1.8	15	3.0
DKI Jakarta	56	20.7	44	19.5	100	20.1
Jawa Barat	19	7.0	20	8.8	39	7.8
Jawa Tengah	13	4.8	28	12.4	41	8.2
DI Yogyakarta	53	19.6	6	2.7	59	11.9
Jawa Timur	76	28.0	109	48.2	185	37.2
Bali	43	15.9	15	6.6	58	11.7
Total by Export Status	271	100.0	226	100.0	497	100.0

Source: Author's calculation based on survey data

into a smaller number of variables (principal components) that may represent a broader dimension of export barriers. The correlation matrix indicates that 981 of 990 correlation values (99.1%) are significant at the 5% level and the Bartlett's Test of Sphericity is significant at the 1% level, both of which indicate the appropriateness of PCA for the export barrier survey data. The KMO test value of 0.906 and the MSA value for each export stimuli item (all above 0.60) indicate the adequacy of overall and individual items' sample size.

The PCA factor extraction was estimated five times which resulted in 45 retained export barrier items. Five export barrier items were eliminated from the analysis because the initial PCA factor extraction results showed that they either had a low level of communalities (below 0.40), showed cross-loadings problems or had insignificant factor loadings (below 0.40). The PCA extracted all factors with latent root criterion (eigenvalues) that exceeded 1 (i.e. no certain number of factors was specified to be extracted). The PCA gave an eleven-factor solution factors that explain 59.703% of the total variance.

Table 4 shows the rotated component matrix and the eleven extracted factors. Based on the export barrier items that have high loadings on each factor, the eleven factors that represent eleven dimensions of export barriers are named as follows: tariff and non-tariff barriers in host countries, informational and human resources barriers, distribution, logistics and promotional barriers, business environment barriers in host countries, product and transaction barriers, financial barriers, foreign government barriers, procedural barriers, price barriers, home government barriers, and foreign customer and competitor barriers, respectively. Hence, we have eleven variables to represent export barriers/export inhibiting factors, named as follows: *Barrier_Tariff*, *Barrier_Human*, *Barrier_Distribution*, *Barrier_ForeignEnviro*, *Barrier_Product*, *Barrier_Financial*, *Barrier_ForeignGovt*, *Barrier_Procedur*, *Barrier_Price*, *Barrier_HomGovt*, *Barrier_Customer*. The data series for each export barrier variable is obtained from PCA's factor scores and calculated with the Regression Score method.¹³

¹³Factor scores can be calculated with non-refined methods (Sum Scores or Summated Scales) and refined methods (e.g. Regression Scores, Bartlett

Table 3. Sample Distribution by Product and Export Status

Products	Exporter		Non-Exporter		Total by Products	
	Count	%	Count	%	Count	%
Agricultural Products	23	8.5	8	3.5	31	6.2
Food & Beverages	17	6.3	39	17.3	56	11.3
Furniture	43	15.9	37	16.4	80	16.1
Handicrafts	59	21.8	32	14.2	91	18.3
Garments	33	12.2	36	15.9	69	13.9
Leather Products & Fashion Accessories	15	5.5	17	7.5	32	6.4
Household Utensils	15	5.5	12	5.3	27	5.4
Machinery Components	7	2.6	11	4.9	18	3.6
Other Products	9	3.3	10	4.4	19	3.8
Multi Products	50	18.5	24	10.6	74	14.9
Total by Export Status	271	100.0	226	100.0	497	100.0

Source: Author's calculation based on survey data

Table 4. Rotated Component Analysis Factor Matrix of Export Barrier Items

	Component											
	1	2	3	4	5	6	7	8	9	10	11	
Customs administration cost in target markets	.698											
Quotas and/or embargoes imposed by target markets	.663											
Preferential tariff for exporters from other countries	.620											
Tariff classification & reclassification in target markets	.568											
Unfamiliar business practices in target markets	.450											
Health, safety & technical standards in target markets	.418											
Obtaining information about potential markets		.753										
Obtaining reliable data on target markets' economy		.746										
Contacting potential customers in target markets		.567										
Devoting managerial time to deal with internationalization		.552										
Identifying business opportunities in target markets		.549										
Inadequate quantity and capability of personnel		.532										
Obtaining reliable foreign representation			.644									
Offering technical/after-sales service in target markets			.627									
Supplying inventory abroad			.623									
Establishing/using distribution channels in target markets			.598									
Adjusting promotional activities to the target markets			.550									
Excessive export transportation/insurance costs			.511									
Economic fluctuations in target markets				.750								
High risks of foreign currency				.606								
High tariff costs in target markets				.511								
Political instability in target markets				.503								
(Intellectual) property rights protection in target markets				.477								
Adapting product design/style to foreign customers' demand					.781							
Developing new products for foreign markets					.773							
Meeting foreign product quality/standards/specifications					.546							
Lack of e-commerce infrastructure in target markets					.510							
Shortage of investment fund						.791						
Shortage of working capital						.781						
Shortage of export insurance						.594						
Granting credit facilities/payment delay to foreign customers						.538						
Unequal treatment in tax/affiliation eligibility in target markets							.739					
Restriction of asset ownership in target markets							.636					
Unequal treatment in business competition in target markets							.618					
Sophisticated target markets' laws/ regulations							.462					
Slow collection of payments from abroad								.698				
Communicating with overseas customers								.574				
Unfamiliar exporting procedures/paperwork								.554				
Enforcing contracts/resolving disputes in target markets								.467				
Offering satisfactory prices to foreign customers									.832			
Matching competitors' prices in target markets									.798			
Lack of home government export assistance/incentives										.795		
Unfavourable home country's export rules and regulations										.747		
Different foreign customer habits/attitudes											.640	
Stiff competition in target markets											.600	

Note: Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 9 iterations.

5.2 Binary Logit Estimation for Exporters-Non-exporters Model

The specification tests of the exporter-non-exporters binary logit regressions are as follow. The Omnibus Tests of Model Coefficients yield a Chi-Square statistic of 311.130 with 25 degrees of freedom and is significantly different from zero at the 1% level. Moreover, the model's -2 Log likelihood value of 372.200 suggests that the model including the explanatory variables is a significantly better fit than the null model. These indicate that the explanatory variables employed in the models significantly improve the baseline model that only include the constant. In other words, the 25 explanatory variables used in the model can significantly improve the model's ability to explain the variation of the outcome (i.e. SMEs' exporting or non-exporting status). In particular, the Cox and Snell Pseudo R-square of 0.466 and the Nagelkerke Pseudo R-square of 0.623 indicate that the model can explain a considerable share of the variation in SMEs' export status (McFadden, 1977).¹⁴ The Hosmer and Lemeshow Test yields a Chi-square value of 5.305 and $p = 0.725 (>.05)$, which suggests the model is a good fit to the data. More precisely, the model (with 25 explanatory variables) has an 82.3% success in classifying/predicting SMEs' engagement in exporting activities.

Table 5 exhibits the direction and the magnitude of the effect of each explanatory variable on the dependent variable. Fourteen explanatory variables have statistically significant estimated coefficients with expected signs except for *ProvinceXNational*. However, the value of the estimated coefficients from the logistic regression have no direct economic interpretation because they are obtained with maximum likelihood estimation techniques (Greene, 2008). To address this limitation, Table 5 also gives the calculated average marginal effects¹⁵ and odds ratio¹⁶. Marginal effects are more insightful to interpret the estimated coefficients of continuous explanatory variables, while the odds ratios are more meaningful to interpret the estimated coefficients of the dichotomous explanatory variables.

With respect to SME owners' international exposure, only overseas work experience has a significant effect while overseas study experience, overseas training experience and MNC/exporting firms' work experience have no significant effects on SMEs' involvement in exporting activities. Owners' overseas work experience positively affects SMEs' probability of exporting at the 10% significance level. SMEs whose owners have previously worked abroad on average

have the odds to become exporters 5.114 times greater than SMEs whose owners are without such experience, other things being equal. SME owners with international work experience probably possess better tacit knowledge of foreign markets (e.g. in foreign language, culture, business practices and regulation) and business contacts in foreign markets (Morosini et al., 1998; Ruzzier et al., 2007).

The estimated coefficient of *ProductXNational* is positive and significant at the 5% level. SMEs whose type of product/merchandise corresponds to Indonesia's main export products are more likely to engage in exporting activities, and vice versa. On average, a one percentage point higher share of SMEs' types of product in Indonesia's total exports increases the probability of exporting by 0.5%. This finding probably indicates the presence of "buyer effect" and of "copying/imitation effect" (Wengel & Rodriguez, 2006). SMEs have a better chance of exporting if they produce merchandise that already attracts foreign buyers (indicated by the merchandise's large share in national exports). SMEs also tend to copy or imitate the types of products sold in foreign markets.

In contrast, the coefficient of *ProvinceXNational* exhibits a negative sign (significant at the 1% level). SMEs that operate in the provinces that have large shares in Indonesia's national exports exhibit lower probability to export, or vice versa. This is possible if the exports in those provinces are dominated by large firms, traders or agents to which SMEs prefer to sell their products rather than exporting directly themselves (Gereffi, 1994; Hessels & Terjesen, 2010). By selling to local exporters, SMEs can earn higher than domestic prices for each unit of the products and avoid the risks of exporting despite receiving lower than international prices for their products.

The estimated coefficient of *GovCentralAssist* is positive at the 1% significance level. SMEs have a higher probability to export if they receive at least one of the following assistances from any central government agencies: promotional assistance (including trade expos, trade fairs, trade shows and SME catalogues), assistance in business management (e.g. managerial training), and assistance in finance and assistance in production (e.g. production techniques or equipment). More specifically, SMEs that are recipients of central government agencies' assistance on average have the odds to become exporters 3.151 times greater than non-recipient SMEs, all else being equal. However, the assistance provided by local government agencies does not have a similar effect on export engagement. The estimated coefficient of *GovtLocalAssist* is negative and insignificant. Technical training, managerial training, grants of equipment, grants of capital and trade fairs organized by provincial, municipal or regency governments do not significantly increase SMEs' probability to engage in exporting activities. The contradictory effect of central and local government agencies' assistance in SME internationalisation is possible since the central government agencies may have better vision on global market opportunities for SMEs, whereas the local government agencies may have stronger local or domestic market orientation in their assistance (Uchikawa & Keola, 2008).

The estimated coefficient of *NonGovtAssist* is positive and significant at the 1% level, which implies that the as-

Scores, Anderson-Rubin Scores) (DiStefano et al., 2009). We used the Regression Score method to calculate the factor scores for the eleven variables that represent

¹⁴McFadden (1977) argued that for the estimation using the maximum likelihood estimation, the value of ρ^2 (Pseudo R-square) between 0.2 and 0.4 represents an excellent fit of the model. In this case, the full model (with all the explanatory variables) significantly improves the initial model with only the intercept as predictor.

¹⁵We use average marginal effect instead of marginal effect at the mean value of other explanatory variables because our model has a number of dichotomous (categorical) explanatory variables. For example, it is less intuitive to analyse the marginal effect of an explanatory variable on the dependent variable at the mean value of SME owners' gender because the gender variable takes binary values of either 1 (male) or 0 (female).

¹⁶The odds ratio is obtained by the exponentiation of the estimated coefficients. In our model, it can be interpreted as the ratio of odds to become exporters given a one-unit change in the explanatory variable.

Table 5. Binary Logistic Estimates (Exporter-Non-exporter Model)

Independent Variables	Estimated Coefficients	Standard Error	Wald Statistics	Odds Ratio	Marginal Effects
Enhancing Factors					
OwnerStudyAbroad	-.587	.679	.746	.556	-0.070
OwnerTrainAbroad	.848	.876	.937	2.336	0.101
OwnerWorkAbroad	1.632*	.869	3.527	5.114	0.195
OwnerWorkMNC	.510	.501	1.035	1.665	0.061
ProductXNational	4.224**	2.129	3.934	68.291	0.504
ProvinceXNational	-.319***	.087	13.589	.727	-0.038
GovCentral_Assist	1.148***	.309	13.831	3.151	0.137
GovtLocal_Assist	-.105	.306	.118	.900	-0.013
NonGovt_Assist	2.504***	.357	49.248	12.236	0.299
Inhibiting Factors					
Barrier_Tariff	-.479***	.142	11.474	.619	-0.057
Barrier_Human	-.624***	.140	19.726	.536	-0.074
Barrier_Distribution	-.326**	.145	5.028	.722	-0.039
Barrier_ForeignEnviro	-.250*	.148	2.877	.779	-0.030
Barrier_Product	.073	.150	.237	1.076	0.009
Barrier_Financial	-.087	.150	.336	.917	-0.010
Barrier_ForeignGovt	-.211	.137	2.394	.809	-0.025
Barrier_Procedur	-.345**	.155	4.926	.708	-0.041
Barrier_Price	-.227	.139	2.679	.797	-0.027
Barrier_HomGovt	.134	.142	.888	1.143	0.016
Barrier_Customer	-.307**	.140	4.826	.735	-0.037
SMEs' Characteristics					
FirmAge	.036***	.014	6.761	1.036	0.004
TotalEmployee	.017***	.005	9.095	1.017	0.002
OwnerGender	.136	.315	.185	1.145	0.016
OwnerAge	.011	.014	.585	1.011	0.001
OwnerEducation	.016	.122	.016	1.016	0.002
Constant	-2.558***	.858	8.878		
Total observations		496			
Degree of freedom		25			
-2 Log likelihood		384.632			
LR Chi-square		298.698***			
Pseudo R-squared (Cox & Snell)		.452			

Note: Dependent variable: Binary values, where 1= exporting SMEs and 0 = non-exporting SMEs

(*), (**) and (***) represent 10%, 5% and 1% significance levels, respectively

Marginal effects are calculated as overall average marginal effects

Source: Author's calculation based on the survey data

sistance provided by non-governmental network sources has a positive influence on SMEs' probability to become exporters. SMEs are more likely to be involved in exporting activities if they receive financial, technical, managerial and promotional assistance from various non-governmental informal sources (family, relatives, business associates and emigrant communities) or formal non-governmental sources (including business chambers/associations, SOEs and universities/research institutes). More precisely, SMEs who are recipients of assistance provided by non-governmental network sources on average have the odds to engage in exporting 12.236 times greater than non-recipient SMEs, all other things being equal. This finding reaffirms the importance of network relationships in SME internationalisation reported by previous studies, such as Battaglia et al. (2006), Freeman et al. (2006), Coviello & Munro (1997), Ojala (2009), and Senik et al. (2011).

Of the eleven variables that represent export-inhibiting factors, six variables have significant effects on SMEs' probability to export, including *Barrier_Tariff*, *Barrier_Human*, *Barrier_Distribution*, *Barrier_Procedur*, *Barrier_ForeignEnviro*, and *Barrier_Customer*. However, the estimated coefficients, marginal effects and odds ratio of those variables are not too insightful for interpretation because they are composite variables obtained from PCA's factor extraction and each barrier is measured by perceived difficulties with the Likert-scale method. Hence, we focus the analysis on the estimated signs of the coefficients that indicate the direction of the effect of perceived export barriers on SMEs' export involvement. As expected, the estimated coefficients of those six variables are negative, which imply that the more difficult the SMEs perceive those barriers, the lower the probability that they will become exporters. In other words, SMEs are less likely to export if they perceive high difficulties in tariff and non-tariff barriers, informational and human resource barriers, distribution, logistics and promotional barriers, business environment barriers in host countries, procedural barriers, and foreign customer and competitor barriers.

However, the estimated coefficients of *Barrier_Product*, *Barrier_Financial*, *Barrier_ForeignGovt*, *Barrier_Price*, and *Barrier_HomGovt* are not statistically significant. Hence, the perceived difficulties of product and transaction barriers, financial barriers, foreign government barriers, price barriers and home government barriers do not affect SMEs' probability to export. These findings assert that export barriers are crucial in SME internationalisation but the levels of difficulties/severities vary across types of barriers (OECD, 2008, 2009).

Two variables that represent firm characteristics have the expected signs and significant estimated coefficients. The estimated coefficients of *FirmAge* and *TotalEmployee* are both positive and significant at the 1% level. More experienced SMEs have a higher probability to engage in exporting activities. In particular, one additional year of firm age on average increases the probability to export by 0.004, all else being equal. Established SMEs are more likely to have capital available or borrowed, an established administrative structure and decision making process, and how to expand or grow (Brush, 2012). Firm size also positively influences the probability of exporting. One additional employee on average increases SMEs' probability to export by 0.002, all

else being equal. SMEs with larger numbers of employees may have better ability to upgrade the product quality and to meet foreign buyers' requirements (Ottaviano & Martincus, 2011). SME owners' characteristics, however, have no significant effect on SMEs' probability to export. The estimated coefficients of *OwnerAge*, *OwnersEducation* and *OwnerGender* have the expected positive signs but none is statistically significant.

5.3 Exporter-Aspiring-exporter Binary Model Estimation

We exclude non-intender SMEs (non-exporting SMEs with no intention to export) from the export engagement analysis and focus on the aspiring-exporters (non-exporting SMEs with intention and plan to export in the future). The Omnibus Tests of Model Coefficients yield a Chi-Square statistic of 155.797 with 25 degrees of freedom and are significantly different from zero at the 1% level. Furthermore, the model's -2 Log likelihood value of 311.999 implies that the model with the explanatory variables is a significantly better fit than the null model. These results indicate that the explanatory variables employed in the models significantly improve the baseline model that only includes the constant. In other words, the 25 explanatory variables used in the model can significantly improve the model's ability to explain the variation of the outcome (the exporting or aspiring-exporter status of the SMEs). In particular, the Cox and Snell Pseudo R-square of 0.333 and the Nagelkerke Pseudo R-square of 0.473 indicate that the model can explain a considerable share of the variation in the outcome. The Hosmer and Lemeshow Test yields a Chi-square value of 14.244 and $p = 0.076$ (> 0.05), which suggests the model is a good fit of the data. More precisely, the model (with its 25 explanatory variables) has 82.1% success in classifying/predicting SME's probability to engage in exporting.

Overall, those specification test results indicate that both the exporter-non-exporter and exporter-aspiring-exporter models have good explanatory power and fit the survey data. However, the exporter-aspiring exporter model has lower Chi-square statistics value of the Omnibus Test, lower -2 Log likelihood value, lower pseudo-R square values and slightly lower percentage success in predicting the outcome than the exporter-non-exporter model. These results suggest that the exporter-aspiring-exporter model has slightly less explanatory power than the exporter-non-exporter model. In addition, the Hosmer and Lemeshow Test value shows that the exporter-aspiring-exporter model fits the data less than exporter-non-exporter model. This is possible since exporting SMEs have more characteristics' contrast to overall non-exporting SMEs than to aspiring-exporters in particular. In addition, the exporter-aspiring-exporter model ($N = 385$) has less sample size than the exporter-non-exporter model ($N = 497$).

The exporter-aspiring-exporter model use the same set of 25 explanatory variables as the exporter-non-exporter model. The estimations of the two models give exactly the same signs of the estimated coefficients of all explanatory variables despite different marginal effects and odds ratio. However, the two models differ in the set of explanatory variables that are statistically significant. In the exporter-aspiring exporter estimation results, the estimated coefficient of *OwnerWorkMNC* is now significant (insignificant

in the exporter-non-exporter model) and the estimated coefficient of *Barrier_Customer* is now insignificant (significant in the exporter-non-exporter model). We therefore focus the analysis on the estimated coefficients of these two variables.

In terms of SME owners' international exposure, in addition to *OwnerWorkAbroad*, *OwnerWorkMNC* is positive and significant at the 10% level. Hence, in addition to the positive effect of SME owners' overseas work experience, MNC or exporting firm work experience also increases SMEs' probability to engage in exporting activities. In particular, SMEs whose owners have previously worked for MNC or other exporting firms on average have the odds to become exporters 2.762 times greater than SMEs whose owners have no such experience, other things being equal. This is possible since an SME owner with MNC or exporting firms work experience is likely to have better international business skills, information and contacts in foreign markets and knowledge of international trade policies and exchange rate risks (Carpenter et al., 2000; Ruzzier et al., 2007)).

With respect to the inhibiting factors, the estimated coefficient of *Barrier_Customer* is now insignificant despite being previously significant in the exporter-non-exporter model. For non-exporting SMEs in general, foreign customers and competitor barriers are significant impediments in exporting, but for aspiring-exporters these types of barriers do not seriously hamper their attempt to engage in exporting activities,

6. CONCLUSIONS AND IMPLICATIONS

Indonesia faces rapid changes in its international trade policies and environment due to its engagement in various bilateral, regional and multilateral FTAs. On the one hand, free trade escalates business competition for SMEs in the domestic market through cheap imported products and the increasing operation of foreign enterprises. On the other hand, free trade also offers enormous opportunities for SMEs to export and to venture abroad. However, SMEs are less able to take advantage of foreign market opportunities than larger enterprises, as indicated by the marginal contribution to Indonesia's exports. SMEs only account for a small share of Indonesia's non-oil and gas exports and the share tends to decline over time. This contradicts SMEs' increasingly important role in the Indonesian economy, particularly as they have been Indonesia's major source of business establishment, employment provision and value added creation.

This study investigates the internationalisation of Indonesian SMEs, particularly the factors influencing SMEs' engagement in direct export activities. This study excludes other forms of outward internationalisation including foreign direct investment and indirect export (selling intermediate product to local exporters). The study was conducted in seven provinces in Jawa, Madura and Bali islands, where Indonesian economy, population and SMEs operations are largely concentrated. The primary data was gathered with survey questionnaires, resulting in 497 useable responses, including 271 exporting SMEs, 114 aspiring-exporters and 112 SMEs with no intention to export. The binary logistic regressions were used to investigate the factors distinguishing exporting SMEs and non-exporting SMEs.

The results showed that SMEs' probability to export

is positively affected by owners' overseas work experience, MNC/exporting firm work experiences, firms' operational experience and firm size (number of employees). SMEs have better chances to export if they produce merchandise that has a large share in Indonesia's national exports (buyer effect and copying/imitation effect) and operate in the provinces that have a low contribution to Indonesia's total exports (less large exporting companies in the province). SMEs also have a higher probability to export if they receive assistance from central government agencies (including promotional, business management, finance and production assistance) or receive financial, technical, managerial and promotional assistance from various non-governmental sources including informal sources (family, relatives, business associates and emigrant communities) and formal non-governmental sources (business chambers/associations, SOEs and universities/research institutes). On the contrary, SMEs are less likely to export if they perceive difficulties in tariff and non-tariff barriers, informational and human resource barriers, distribution, logistics and promotional barriers, business environment barriers in host countries, procedural barriers, and foreign customer and competitor barriers.

The findings have several policy implications. First, the government should design export assistance based on accurate and updated information on export impediments faced by SMEs. Accordingly, the government should have a good understanding of the types and the severity of export barriers faced by SMEs, with which effective policy measures to remove the export barriers can be formulated. Second, potential exporters can be identified from their firm characteristics, owner characteristics, network relationships and perception on export barriers. The government can identify and prioritise SMEs with export potential to participate in export assistance programmes. Third, the government should be knowledgeable of the functions and role of non-government actors in the internationalisation network such as business associations/chambers, research institute/universities, finance/microfinance institutions and other non-government organizations. The government should look to strengthen the operation of those networking sources or assign one public body to facilitate, connect, coordinate and monitor the myriads of private and public agencies that have the same area of interest or assistance.

The findings also have managerial implications. First, the aspiring-exporters should proactively seek export assistance from central government agencies. Second, aspiring-exporters should also develop and maintain close relationships with non-government actors in the networks. Some network actors that can help SMEs to internationalise include, but are not limited to, business associations/chambers, business partners/associates, private companies/state-owned enterprises, universities/research institutes, suppliers, distributors and Indonesian emigrant communities worldwide. Network relationships with non-government actors in the network can be as important as the formal relationships with government agencies in facilitating SMEs to export.

Table 6. Binary Logistic Estimates (Exporter-Aspiring-exporter Model)

Independent Variables	Estimated Coefficients	Standard Error	Wald Statistics	Odds Ratio	Marginal Effects
Enhancing Factors					
OwnerStudyAbroad	-.657	.693	.898	.518	-0.086
OwnerTrainAbroad	.654	.934	.491	1.924	0.086
OwnerWorkAbroad	1.644*	.935	3.095	5.178	0.216
OwnerWorkMNC	1.016*	.589	2.980	2.762	0.133
ProductXNational	6.132**	2.474	6.141	460.198	0.804
ProvinceXNational	-.297***	.092	10.305	.743	-0.039
GovCentral_Assist	.701**	.331	4.486	2.017	0.092
GovtLocal_Assist	-.132	.335	.156	.876	-0.017
NonGovt_Assist	.900**	.420	4.588	2.460	0.118
Inhibiting Factors					
Barrier_Tariff	-.531***	.163	10.617	.588	-0.070
Barrier_Human	-.822***	.163	25.370	.440	-0.108
Barrier_Distribution	-.286*	.154	3.471	.751	-0.038
Barrier_ForeignEnviro	-.319*	.164	3.757	.727	-0.042
Barrier_Product	.118	.170	.477	1.125	0.015
Barrier_Financial	-.119	.170	.491	.887	-0.016
Barrier_ForeignGovt	-.236	.152	2.405	.790	-0.031
Barrier_Procedur	-.412**	.172	5.762	.662	-0.054
Barrier_Price	-.208	.149	1.942	.813	-0.027
Barrier_HomGovt	.197	.156	1.594	1.218	0.026
Barrier_Customer	-.220	.153	2.080	.802	-0.029
SMEs' Characteristics					
FirmAge	.061***	.019	10.481	1.063	0.008
TotalEmployee	.018***	.006	7.651	1.018	0.002
OwnerGender	.001	.344	.000	1.001	0.000
OwnerAge	.017	.015	1.141	1.017	0.002
OwnerEducation	.031	.139	.050	1.032	0.004
Constant	-1.591*	.939	2.872		
Total observations		385			
Degree of freedom		25			
-2 Log likelihood		311.999			
LR Chi-square		155.797***			
Pseudo R-squared (Cox & Snell)		.333			

Note: Dependent variable: Binary values, where 1 = exporting SMEs and 0 = aspiring-exporters

(*), (**) and (***) represent 10%, 5% and 1% significance levels, respectively

Marginal effects are calculated as overall average marginal effects

Source: Author's calculation based on the survey data

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