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A Study on the Effects of SMVEs Export Modes on Export Amount and Period

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Abstract

Purpose - This present aims to analyze the effect of export modes on initial export amount and time to export by selecting export modes among various success strategies and factors.

Research design, data, and methodology - It surveyed 980 small and mid-sized venture enterprises across Korea. The export modes and its impact on exports through frequency analysis and cross analysis, and validated through a PPML(regression analysis applied the enterprise growth model) analysis.

Results - Five export modes were investigated : direct export, indirect export, transfer from direct export to indirect export, transfer from direct export to indirect export, and parallel export to indirect export. It was found that SMVEs that exported directly from establishment to initial export had the shortest period, and also had the highest export price

Conclusions - From a marketing point of view, it took an average of 1.6 years to switch from export directly to indirect export or directly export, and the reason for the export modes conversion was to supplement export specialists and improve export competitiveness. And the export amount and time period that SMVEs establishes and export is a significant factor in export success strategy and there has been few prior study in export modes.

Keywords: Export Modes, SMVEs(Small and medium venture enterprises), Export Amount, Export Period.

JEL Classifications: C21, C42, D3, F1, M31.

1. Introduction

On November 30, 2017, the South Korean government held an inauguration ceremony for the Ministry of SMEs and Startups in the presence of the president. The meaning of the foregoing can be found in the fact that the direct economic effects of enterprises such as productivity movement, employment increases, and contribution to GDP and indirect ripple effects on society, economy, culture, and politics, which have mainly been produced by large enterprises, are now substantially produced by small and medium enterprises and venture enterprises, or the fact that small and medium enterprises and venture enterprises are now becoming partners of large enterprises with equal statuses for win-win situations (Coo, 2017b).

The amount of exports from South Korea in 2016 was 495.5 billion dollars. Although it dropped two places compared to 2015, the export ranking of South Korea in

2016 was eighth in the world following China, the United States, Germany, Japan, Netherlands, Hong Kong, and France (WTO secretariat, 2017), which is clearly a ranking that shows the status of South Korea as an export powerhouse (Coo, 2017a, b).

Small and medium-size enterprises (SMEs) and venture enterprises (VEs) account for 21.2% of this export amount. This is a meaningful indicator that explains the growth potential and roles of exporting SMEs and VEs.

With regard to the general enterprise growth stages (EGS), enterprises start as small enterprises, undergo the states of small and medium-sized enterprises, and grow into hidden champions, which are small in scale, but have powerful competitiveness or strong medium enterprises in terms of scale. Thereafter, some of the enterprises end their lives as strong medium enterprises, while other enterprises grow into large enterprises and some of the large enterprises are positioned as global enterprises that represent their country. As shown by the EGS, an essential stage to grow into large enterprises is the stage of small and medium-sized enterprises. Related statistics convincingly demonstrate that not all small and medium-sized enterprises,

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but only those small and medium-sized enterprises that underwent the stage of hidden champions have more potential capabilities to grow into large enterprises.

In 2016, South Korea was the eighth export powerhouse in the world, but the ratio of exports by SMEs and VEs was not high. South Korea's unemployment rate of higher than that of Germany, which is a representative country of small hidden champions, and the number of small hidden champions in South Korea was 23 as of 2012, which was only 0.5% that of the number of small hidden champions in the world, which was 2,734 (Simon, 2012). However, according to the results of small and medium enterprise status indicator surveys conducted by the National Statistics Office and Korea Federation of Small and Medium-sized Businesses (2017) from 2003 to 2008, SMEs contributed to economic growth more than did large enterprises, as the production amount of SMEs accounted for 51.2% of the total production amount of South Korea and the added value increment of SMEs accounted for 50.4% of the total added value increment of South Korea. In addition, SMEs accounted for approximately 86% of the entire number of employees in South Korea, so that the necessity and importance of SMEs in terms of society and country can be realized.

As it has done thus far, South Korea should increase the employment rate of young adults and middle-aged people, create new jobs, promote the national interest, and maintain its status as a leading GDP and GNP country through international trade. To this end, South Korea should make efforts to foster successful SMEs and VEs and have small hidden champions.

Recognizing the importance of SMEs and VEs as such for the domestic economy, the present study aims to analyze the present situation and find export success strategies that can help the SMEs and VEs improve their export competitiveness in the world market. To this end, the aim of this present study selects export modes from among various export success strategies and factors and intensively analyzes the effects of export modes on the amount of the first export and the time necessary for export after the establishment of enterprises.

2. Literature Review and SMVEs' Current Status

2.1. Precedent studies' review

2.1.1. SMVEs(SMEs and VEs)

The Framework Act on Small and Medium Enterprises, as amended on October 17, 2017, defines small and medium-sized enterprises (SMEs) as profit-making enterprises and nonprofit social enterprises certified as social enterprises pursuant to the Social Enterprise Promotion Act

that satisfy both the scale criteria and independence criteria for SMEs. First, the scale criteria are for judgment based on scales, which are applied to sales divided into five levels, and exclude enterprises with a total amount of assets exceeding 500 billion won from SMEs regardless of business type. Second, the independence criteria are for judgment based on whether enterprises are affiliated with any corporate group and classify those enterprises that do not fall under any of the following as SMEs: enterprises that belong to any corporate group in which mutual investments are restricted, enterprises that belong to any corporate group in which guarantee of debt is restricted, enterprises of which the largest investor has at least 30% of the shares, etc. directly or indirectly is any corporation with a total amount of assets exceeding 500 billion won including foreign corporations, and enterprises that fall under affiliated companies in a dominant-subordinate relationship due to mutual investments and do not satisfy the scale criteria by business type when the average sales corresponding to investment ratios have been summed up (Minister of SMEs and Startups, 2017).

2.1.2. Export modes

Export modes refer to selling domestic products to overseas enterprises and individual customers (Kim et al., 2014). Exports are divided into direct exports and indirect exports depending on whether enterprises sell their products under their company names and whether export products arrive at importing countries via a third country. Direct export refers to cases where enterprises produce products firsthand and export the products, cases where enterprises produce products with toll processing or partial processing by subcontractors and export the products under their names, and cases where enterprises export products directly to importing countries and not via any third country. Direct export is made using channels such as overseas exhibitions and events, overseas distributors, online sales, and overseas corporations. Indirect export refers to all forms of export such as exports through agencies for which transferable letters of credit are necessary, exports via a third country, exports using domestic or overseas agents, and exports through organizations not managed by the exporting enterprises, such as trading companies(Kim et al., 2014; Kim, 2014; Park, 2013; Park, 2013).

Venture enterprises (VEs) refer to technology-intensive SMEs operated through the development of new cutting-edge technologies and ideas. They are also called R&D enterprises, technology-intensive enterprises, and venture businesses. The related statutes include the Act on Special Measures for the Promotion of Venture Businesses, the Framework Act on Small and Medium Enterprises, the Support for Small and Medium Enterprise Establishment Act, the Act on the Promotion of Collaborative Cooperation between Large Enterprises and Small-Medium Enterprises,

<Table 1> Scale criteria for SMvEs by business type

Major business type of the relevant enterprise	Sales scale	Major business type of the relevant enterprise	Sales scale	
Apparel, apparel accessory and fur product manufacturing business	Average 150 billion won or less	Beverage manufacturing business	Average 80 billion won or less	
Leather, bag and shoe manufacturing business		Printing and recording media duplicating business		
Pulp, paper, and paper product manufacturing business		Medical substance and medicine manufacturing business		
Primary metal manufacturing business		Nonmetallic mineral product manufacturing business		
Electrical equipment manufacturing business		Medical, precision, and optical instrument and watch manufacturing business		
Furniture manufacturing business		Other product manufacturing business		
Agriculture, forestry and fisheries		Service water, sewage and waste disposal, raw material recycling business (excluding water supply business)		
Mining		Transportation and warehousing business		
Grocery manufacturing business	Average 100 billion won or less	Information and communication business	Average 60 billion won or less	
Tobacco manufacturing business		Industrial machinery and equipment repair business		
Textile product manufacturing business (excluding apparel manufacturing business)		Professional, scientific and technical services		
Wood and wood product manufacturing business (excluding furniture manufacturing business)		Business facility management, business support and rental service business (excluding rental business)		
Coke, briquette and refined petroleum product manufacturing business		Health and social welfare services		
Chemical substance and chemical product manufacturing business(excluding medicine and medical supply manufacturing business)		Arts, sports and leisure-related services		
Rubber product and plastic product manufacturing business		Repair and other personal services		
Metalworking product manufacturing business (excluding machinery and furniture manufacturing business)		Accommodation and restaurant business		
Electronic component, computer, video, sound and communication equipment manufacturing business		Finance and insurance business		
Other machinery and equipment manufacturing business		Real estate business		
Automobile and trailer manufacturing business		Leasing service		
Other transportation equipment manufacturing business		Education service		
Electricity, gas, steam and air conditioning supply business				Average 40 billion won or less
Water service				
Construction business				
Wholesale and retail business				

and the Special Act on Support for Human Resources of Small and Medium Enterprises (Korea Venture Business Association, 2017). The requirements for VEs defined in the Act on Special Measures for the Promotion of Venture Businesses refer to enterprises that meet two criteria. The first is that the enterprise should be an SME under Article 2 of the Framework Act on Small and Medium Enterprises. The second is that the enterprise should correspond to any one of the items in parentheses. (An enterprise with the sum of investment amounts and the ratio of the sum of the investment amounts to the enterprise's capital exceeding the respective criteria set by Presidential Decree, an enterprise with a laboratory attached to it with an annual research and development expense and the ratio of the total of the research and development expenses to the total turnover

exceeding the respective criteria set by Presidential Decree, which was evaluated as having excellent business value by an institution determined by Presidential Decree, an enterprise to which the institution determined by Presidential Decree lent a fund without security to promote commercialization or foundation, an enterprise with the amount of loans and the ratio of the security (loan amount) to the total assets not lower than the respective criteria determined by Presidential Decree, and an enterprise evaluated by a guarantee(loan) institution as having excellent technology).

2.1.3. SMvEs' export success measures

The export success measures of SMEs and VEs have been extensively studied in South Korea and abroad, and

this area should be studied hereafter, too. The present study will organize the measures based on regions and countries and compare the regions and countries of the measures in order to provide more effective implications(Coo, 2017a, b).

First, Asia, where South Korea, which is an export powerhouse in the world, is located. In South Korea, which represents Asia as an export powerhouse, many studies have been conducted from a long time ago to find our success factors for small and medium-sized exporting enterprises success factors. Through analyses of the cases of SMEs in Germany, a representative country for hidden champions, it could be seen that important factors are ambitious goals, self-production (Huh, 2015), horizontal corporate culture, R&D and concentration (Keizer et al., 2002), strong trust of customers, and globalization (Cho, 2013). All these are substantially the same as the factors derived in empirical studies conducted with domestic SMEs, such as R&D ratio (Keizer et al., 2002), ownership and management and entrepreneurship (Coviello et al., 1995), expert-oriented technology (Gomez-Mejia et al., 2001), and marketing capability (Han & Jeong, 2013; Park et al., 2012; Cho, 2012; Lee & Son, 1993). Competitive advantage factors for small and medium-sized enterprises' export performance include technological capabilities (Kim, 2012; Kim & Kim, 2011), marketing capabilities (Lee et al., 2017; Han & Jeong, 2013; Qureshi et al., 2011), and export experience (Kim, 2003), furthermore, export marketing capability factors that play core roles are ICT capabilities (Hwang, 2010), global market orientation (Cho & Won, 2012; Mathews, 2008), and network orientation (Coviello et al., 1995; Rhee, 2017). By contrast, export success factors for SMEs such as overseas market development, financial support, the range and strength of overseas networks, specialization and globalization, strategic alliance in terms of systems, patent rights and trade mark rights that cannot be achieved by the capabilities of enterprises require government support in terms of policies (Huh, 2015; Han & Jeong, 2013; Wang et al., 2012).

Among the success factors for small and medium-sized exporting enterprises in other Asian countries, such as Bangladesh, China, and India, government's market development and financial support acted as an important internalization factor (Shamsuddoha et al., 2009). Other export success factors may include technological capabilities, reflection of customer requirements, supply networks, information system, and securing the visibility of information (Zhang et al., 2015; Kian Chong et al., 2011); on top of that, market orientation and international orientation are also important factors indispensable for improvement of export (Javalgi et al., 2011).

Second, Europe, where Germany, a country of hidden champions, is located. In Europe, including Germany (a country of hidden champions), the UK, Austria, Netherlands, Norway, and Italy, managers' decision making, self-R&D activities and evaluation, R&D innovation and the ability to

absorb the R&D innovation (Harris et al., 2008), purchase of technologies, and scout of experts with international competence are acting as differentiating assets for success of the export of SMEs(Gnizy et al., 2017; D'Angelo, 2012; Ryges, 2006), and factor such as experience in export markets, commitment to internationalization, product prices, and selection of export areas also have positive effects (Fuchs & Köstner, 2016). Other factors such as unique products, contact of individual buyers, concentration strategies, knowledge and information on markets, efficient use of distribution channels (Moen, 2000); Louter et al., 1991; Gripsrud, 1990), as well as targeting large-scale rather than small-scale enterprises and niche markets rather than general markets can be also included in export success factors (Moen, 2000).

Third, North America, where the USA, which has been trying to magnify FTAs as a major issue despite the fact that the relevant negotiations began in June 2006, the South Korea-U.S. FTA was signed in July 2007, and the FTA came into effect in March 2012. The export success factors for SMEs in North America, including the countries such as the United States and Canada, may incorporate selection of export areas and industries to which export items belong, as well as independent distribution channels (Mittelstaedt et al., 2006; Katsikeas et al., 1997; Cavusgil & Kirpalani, 1993) and other factors such as the scales of exporting enterprises, product types and culture that fit the target country (Brouthers et al., 2005), state government's support for promotion (Kotabe et al., 1992) affect the success the export of small and medium-sized enterprises (Clausing, 2001; Katsikeas et al., 1997; Selnes, 1996).

Fourth, It is an African area. Among the export success factors for SMEs in the African regions, such as South Africa and Morocco, joint investments and networks among enterprises, access to information and capitals, education levels, and education for reinforcement of employees' capabilities were found to be important factors on the enterprise level and networking between SMEs and provision of information on international markets were important factors on the national level (Makrini, 2015; Gumede & Rasmussen, 2002).

Finally, South American area. the case of South America such as Chile and Brazil, incentives on the company level for performance improvement, improved operation plans, international quality certification, increases in investments for innovation, routinization of innovation, employees having innovation capabilities, strategic alliances for innovation, and procurement of standardized industrial materials act as success factors for SMEs (Maldifassi & Chacón Caorsi, 2014; Christensen et al., 1987).

2.2. SMVEs' status

According to a report of the Korea Chamber of Commerce & Industry (2015), four core factors were raised as problems of small and medium-sized exporting enterprises

diagnosed by SMEs. The first problem in relation to export was small scales (26.3%), the second problem was the lack of innovation capabilities of members (24.7%), the third problem was dependence on domestic demand, which is relatively safer than export (22.3%), and the fourth problem was lower competitiveness compared to competing countries in overseas markets (21.3%)(Coo, 2017a, b).

To compare the small scales posited as the first problem of exporting SMEs with those of major other countries, the ratio of small scaled enterprises with 10 or fewer workers to all manufacturing enterprises of South Korea was 82.3% (2013), which was higher than that of the United States (52% in 2012) and that of Japan at (69.2% in 2012) by 30.3% and 13.1%, respectively (OECD, 2014).

This problem of small scales can also be explained by the results of analysis of the productivity of members working at exporting SMEs conducted by OECD (2014), which indicate that the labor productivity per person of workers of small and medium sized manufacturing enterprises in South Korea in 2011 was 35.1 thousand dollars, which is by 30.4 thousand dollars lower than the OECD average labor productivity per person (65.5 thousand dollars).

On the other hand, the 2015 statistics of the Federation of Small and Medium-sized Enterprises (SMEs) of the National Statistics Office and Korea show that the number of SMEs in South Korea was 3,231,630, accounting for 84.8% of the total number of enterprises, and that the number of workers in SMEs in South Korea was 12,626,746, accounting for 86.9% of the entire employment. Therefore, the effects of SMEs on the domestic economy and employment market can be said to be immense.

3. Analysis of the Effects of Export Modes on Export Amount and Period

3.1. Design of the survey

This survey was conducted with a mobile survey method with 980 exporting SMEs and VEs throughout South Korea from November 20 to 30, 2017. Please refer to <Table 2>.

<Table 2> Design of survey of exporting SMVEs

Classification	Contents
Parent population	exporting medium and small business enterprise, exporting venture enterprise
Survey method	Mobile Survey
Survey area	All parts of the country
Survey sample	980 enterprises by target approach extraction
Valid sample	258 enterprises
Questionnaire	Structured open and close type questionnaire

3.2. Analysis results

3.2.1. Composition of survey samples

The questionnaire survey conducted with small and medium venture enterprises as a population obtained 258 valid questionnaires, divided into those from manufacturing businesses and those from service businesses. First, in the case of manufacturing businesses, 242 enterprises were surveyed, accounting for 89.9% of the valid questionnaires. Next, in the case of service businesses, 26 enterprises were surveyed, accounting for 10.1% of the valid questionnaires.

As for the export modes currently implemented, direct export accounted for the highest ratio among export modes at 53.1%, followed by indirect export at 32.6% and combinations of indirect export and direct export.

3.2.2. Effect of Export Modes on Export Period and Amount

3.2.2.1. Research process and model

The present study was conducted to examine whether the five export modes: direct export, indirect export, conversion from direct export to indirect export, conversion from indirect export to direct export, and the combination of direct export and indirect export, affect export success.

The methodologies of crossover analysis and regression analysis were used to derive study results. A total of seven items were used in the crossover analysis, comprising the five export modes mentioned above, the amount of the first export, and the period of time to successfully export products for the first time after establishment. Among the items, the five export modes were used as factor variables and the two remaining variables were used as outcome variables. Regression analysis was used to verify the results of the crossover analysis as mentioned above, and in this case, the five export modes were used as independent variables and the amount of export for the first time after enterprise establishment was used as a dependent variable to verify whether the results derived through the crossover analysis were true or false and submit final study results.

3.2.2.2. Export years by export modes

The years of the first export of small and medium venture enterprises were classified into seven period groups to analyze them. According to the survey, the years of the first export were before 2002 for 11 enterprises, 2003~2012 for 30 enterprises, 2013 for 11 enterprises, 2014 for 24 enterprises, 2015 for 37 enterprises, 2016 for 96 enterprises, and 2017 for 49 enterprises. The export modes of the enterprises were direct export for 137 enterprises, indirect export for 23 enterprises, conversion from indirect export to direct export for 13 enterprises, conversion from direct export to indirect export for one enterprise, and a combination of direct export and indirect export for 84 enterprises.

The implications are that among the seven groups

classified by period, the number of enterprises that adopted direct export was the largest at 137, and that among the enterprises in the seven groups classified by period, more than half, that is, 50.4%, adopted direct export (the average of seven groups 50.4%, at least 37.5% and 63.3% at the maximum of each group adopted direct export).

3.2.2.3. Export Periods by export modes

The periods of time taken by small and medium venture enterprises to export products for the first time after they were established were surveyed by dividing the periods into seven groups based on the numbers of years after establishment. According to the survey, the numbers of years after establishment were less than one year for 84 enterprises (32.6%), less than two years for 30 enterprises (11.6%), less than three years for 22 enterprises (8.6%), less than four years for 16 enterprises (6.2%), less than five years for 18 enterprises (7.0%), 6 to 10 years for 44 enterprises (17.1%), and more than 10 years for 44 enterprises (17.1%). Export modes by the number of years after establishment were surveyed, and according to the results, the ratios of enterprises that adopted direct export in each of the seven groups ranged from 50% (enterprises with less than two-year periods, those with less than four-year periods, and enterprises with less than five-year periods) to 59.1% (enterprises with less than three-year periods) to show the highest average for all seven groups at 53.1%. Enterprises that adopted a combination of direct export and indirect export showed the next highest average ratio (32.6%), followed by those that adopted indirect export modes (8.9%), those that converted from indirect export to direct export (5.0%), and those that converted from direct export to indirect export (0.4%). An implication is that enterprises with shorter periods until the first export after enterprise establishment adopted direct export more frequently. The survey results indicating that among the 137 enterprises that adopted direct export, 90 enterprises, amounting to 65.7%, succeeded in the first export within five years after establishment, explain the foregoing well.

3.2.2.4. Export amounts by export modes

The small and medium venture enterprises were classified into six groups with different amounts of the first export for a survey based on five export modes. The amounts of the first export were less than 10 million won for 78 enterprises (30.2%), less than 100 million won for 129 enterprises (50.0%), less than 500 million won for 38 enterprises (14.7%), less than one billion won for two enterprises (0.8%), less than three billion won for seven enterprises (2.7%), and more than three billion won for four enterprises (1.6%). Export modes were surveyed based on the six amount groups and according to the results, direct export was the most frequently adopted mode (49.4%), followed by a combination of direct export and indirect export (33.9%), indirect export (11.9%), conversion from indirect export to

direct export (4.6%), and conversion from direct export to indirect export (0.2%). An implication is that enterprises with larger amounts of the first export after enterprise establishment adopted direct export more frequently. The survey results indicating that 66.1% of enterprises with the amount of the first export exceeding one billion won adopted direct export and that 53.2% of enterprises with the amount of the first export below 10 million won adopted direct export show the foregoing well.

3.2.2.5. Share of export amount when export modes are combined

The shares of direct export in the amounts of export of 84 enterprises (32.6% of enterprises surveyed) that adopted a combination of direct export and indirect export shown in <Table 2> and shares of export modes were surveyed, and the enterprises were divided into four groups. The shares of the amount of direct export were below 25% for 22 enterprises (26.2%), below 50% for 25 enterprises (29.8%), below 75% for 13 enterprises (15.5%), and at least 76% for 24 enterprises (28.6%). Among the 84 enterprises that adopted direct export and indirect export, 21 enterprises or 25% were increasing sales through direct export, and an implication that can be derived from the foregoing is that these enterprises were utilizing advantageous export modes depending on the targets, such as importing countries and buyers.

3.2.2.6. Periods of convert export modes

The periods of time taken to convert indirect export adopted when exports began into direct export or to convert direct export to indirect export were surveyed, and the enterprises were divided into four groups. Among the enterprises, 57.1% took one year for conversion of the export mode, 28.6% took two years, 7.1% took three years, and 7.1% took four years or more. An implication is that the weighted average of the periods of time taken by the four groups was 1.6 years, and that these analysis results can be said to show the importance of the choice of export mode considering tangible and intangible investment losses such as conversion periods and conversion costs.

3.2.2.7. Reasons for conversion of export modes

The reasons why enterprises converted direct export to indirect export or converted indirect export to direct export were surveyed with an open type question. The most frequent reason was "to supplement experts on exports" presented by 28.6% of the respondents, followed by "to increase sales" and "to reinforce export competitiveness" presented by 21.4% of the respondents, respectively and "due to advancement into the B2B market," "to discover new buyers," "to concentrate capability on product development," and "due to the loss of trust in the intermediary agent" presented by 7.1% the respondents, respectively. The

foregoing shows an implication that export modes are converted by small and medium venture enterprises to secure better export competitiveness than that of now, and to this end, the markets of export target countries should be sufficiently analyzed and export conditions should be discussed with the export target enterprises and should be analyzed before selecting an export mode.

3.2.3. Verification of causal relationships between export modes and amounts

The results of analysis of the contents of surveys set forth in 3.2.2.2~3.2.2.5 above indicate that export modes significantly affect the periods of time taken by SMEs and VEs to export products for the first time after establishment and the amounts of the first export. The analysis results also indicate that among the five export modes, direct export has stronger effects on the time taken to export products for the first time and the amounts of the first export compared to the other four export modes. In this paragraph, the fact that direct export affects the export success of small and medium venture enterprises identified through crossover analysis as described above will be verified again through regression analysis.

3.2.3.1. Explanation of the PPML analysis model

This regression analysis applied the enterprise growth model (Huynh & Petrunia, 2010) as shown in <Table 3>. The empirical estimation model was applied with the Poisson Pseudo-Maximum-Likelihood (PPML) regression analysis (cause and effect estimation method) designed by Silva and Tenreiro(2006) to control the heteroscedastucity occurring between the estimations of Eq(Coo, 2017a). (1)-(2) that follow lognormal distribution.

3.2.3.2. Results of the PPML analysis

The results of regression analysis conducted using 「the amounts of the first export」 of small and medium venture enterprises after establishment as a dependent variable and using 「export modes」 as an independent variable are as shown in <Table 4>. The dummy variables of individual export modes were compared based on indirect export. As shown by the values from the results of the analysis, it could be seen that when direct export was selected, the amounts of the first export were higher by 120% compared to indirect export. Therefore, the results of this regression analysis verify the fact that export modes affect small and medium venture enterprises' export success derived from the results of crossover analysis.

<Table 3> Form of the enterprise growth model(PPML model)

$X_i = \exp [c + \ln E_i + \ln Age_i + (\ln Age_i)^2 + Z_i + D_i + \ln \mu_i]$	(1)
$P_i = \exp [c + \ln E_i + \ln Age_i + (\ln Age_i)^2 + Z_i + D_i + \ln \mu_i]$	(2)
① X_i is the first export amount of enterprise i , and P_i is the periods of time spent by enterprise i after establishment until the first export. ② E_i is the number of full-time workers of enterprise i and indicates the size of the enterprise. ③ Age_i is the business history of enterprise i and the reason why the business history was square was to control the nonlinearity as explained by Huynh and Petrunia(2010). ④ Z_i is the variable of interest and means the influential factors for the first export amount or the period of time spent after establishment until the first export of enterprise i. ⑤ D_i is an industrial dummy intended to control the endogeneity of the model.	

<Table 4> Results of PPML analysis

Division	Dependent variable: the amount of the first export after enterprise establishment
	Poisson Pseudo-Maximum-Likelihood (PPML) estimation method
The number of full-time workers (log)	0.374* (1.76)
Business history (log)	-1.094 (-1.19)
Business history^2 (log)	0.192 (0.77)
Direct export dummy	1.201* (1.82)
Indirect→ direct export dummy	0.572 (0.69)
Direct→ indirect export dummy	1.131 (1.06)
Indirect+direct export dummy	1.060 (1.41)
Number of observations	257
R-Squared	0.071

Notes: 1) * : significance level within 10% , **: significance level within 5%, ***: significance level within 1%.
 2) The values in the brackets mean z-values.
 3) Although dummies and constants by business type were included in the analysis, the results are not presented.
 4) The criteria for comparison of dummy variables is indirect export

4. Conclusions and Implications

4.1. Study results summary

Recognizing the importance of SMEs and VEs for the domestic economy, the purpose of the present study aimed to select factor termed export modes from among various export success strategies and factors that can help those enterprises secure export competitiveness in the world market to analyze the effects of export modes on the periods of time until small and medium venture enterprises export products for the first time after establishment and the amounts of exports.

A structured questionnaire was used as a tool to derive the purpose of the study, and a questionnaire survey was conducted using a mobile survey technique that facilitated the distribution of questionnaire sheets and the collection of results. The main methodology used is crossover analysis, and the regression analysis technique was applied to verify the study results derived, thereby securing the reliability and validity of the final results derived.

The 258 effective questionnaire sheets used in the analyses were from 242 enterprises in 11 industries doing manufacturing business and 16 enterprises in three industries doing service business. Among the enterprises, 171 enterprises, which accounted for 66.7%, adopted direct export (171 enterprises: 137 enterprises; direct export +13 enterprises; conversion from indirect export to direct export +21 enterprises with higher ratios of direct export among enterprises that adopted a combination of direct export and indirect export) and the results of analysis of 258 questionnaire sheets enabled quantitative identification of the reasons why many enterprises adopt direct export, making the present study valuable.

According to the results of analyses, small and medium venture enterprises with shorter periods of time until the first export success after establishment adopted direct export more frequently. In addition, small and medium venture enterprises with larger amounts of the first export after enterprise establishment adopted direct export more frequently. The results of qualitative analyses indicating that 66.1% of enterprises with the amount of the first export exceeding one billion won adopted direct export modes can be said to support the foregoing. The results of crossover analysis derived as such were analyzed again using the PPML regression analysis technique to quantitatively identify the fact that enterprises that adopted direct export had 120% larger amounts of the first export than enterprises that adopted indirect export. These results verified that the results derived through crossover analysis are not only objective but also reliable and valid.

4.2. Implications of the study

4.2.1. Practical marketing aspects

The present study implies differentiated values in two aspects. First, the present study investigated and presented the export success factors and strategies of small and medium venture enterprises in a total of 14 countries, consisting of four countries in the Asian region, five countries in the European region, two countries in the North American region, two countries in the African region, and one country in the South American region. Second, the present study intensively investigated five export modes: direct export, indirect export, conversion from direct export to indirect export, conversion from indirect export to direct export, and a combination of direct export and indirect export modes to identify and verify that they were affecting the export success of small and medium venture enterprises.

Based on the results of the present study, this author presents two implications from the aspect of marketing, as follows. First, from the results of the study it was identified that a conversion from direct export to indirect export or from indirect export to direct export took 1.6 year on weighted average. This means that enterprises should select export modes that fit their capabilities considering the intangible and tangible investment losses incurred until export modes are converted, conversion costs, and opportunity costs. Second, the reason for the conversion of export modes is to secure stronger and more effective export competitiveness than that of now, such as by supplementing experts on exports or increasing sales. A fundamental reason for the conversion of export modes as such by small and medium venture enterprises is to secure better export competitiveness than that of now. To this end, the markets of export target countries should be sufficiently analyzed and export conditions should be discussed with the export target enterprises and should be sufficiently analyzed before selecting an export mode.

4.2.2. Originality and research limitation

The results of this present have the following originality and limitations of this paper. First originality is that fourteen countries on five continents were surveyed for success strategies and factors for small and medium-sized venture businesses. Second, export amount and time period established by SMEs and VEs based on export modes that have few prior study acted as significant factor in export success strategy or factor. Despite these academic contributions, the use of the PPML methodology rather than a typical regression analysis, such as Amos and Regression analysis, will serve as a limitation.

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