Absorptive and Integrative Capabilities: Supporting the Entrepreneurship of High Involvement Exporters

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Abstract

This study examines the role of absorptive and integrative capabilities in the behavior of high involvement exporting firms and their impact on export performance. Data were collected from seventy-eight high involvement U.S. exporting manufacturing firms. Formative and reflective constructs were validated through MIMIC models using LISREL and the theoretical model was tested using PLS estimation methods. Results suggest that high involvement exporting firms require a blend of learning, manufacturing flexibility, and market expansion as absorptive capabilities. Innovation and entrepreneurship as integrative capabilities are necessary to transfer firms' innovation output to the market. Export performance is supported on the complementarity of market expansion-adaptation, innovation, and entrepreneurship capabilities.

Keywords: Exporting, Capabilities, Innovation, Entrepreneurship, Learning

1. Introduction

As firms become involved in exporting, they develop capabilities such as international marketing experience and R&D intensity (Atuahene-Gima, 1995; Kayabasi & Mtetwa, 2016), market sensing (Miocevic & Morgan, 2018), strategic realignment (Sousa & Tan, 2015), ability to identify opportunities and threats (Ahi, Baronchelli, Kuivalainen, & Piantoni, 2017), entrepreneurial and marketing orientation (Boso, Story, & Cadogan, 2013; Cadogan, Boso, Story, & Adeola, 2016), customer relationships and supply chain management (Piercy, Kaleka, & Katsikeas, 1998), and the ability to develop new products (Cavusgil & Zou, 1994) and innovate (Golovko & Valentini, 2011; Vicente, Abrantes, & Teixeira, 2015). However, possession of differential based-advantages such as information, market experience, customer relationships, product development, and physical resources (Piercy et al., 1998), entrepreneurship alone (Murray, Gao, & Kotabe, 2011), and alignment of exporting marketing decisions with resource deployments (Morgan, Katsikeas, & Vorhies, 2012) do not determine export performance. The way exporters integrate resources and competencies that is, capability configuration is the source of superior international performance (Ling-yee & Ogunmokun, 2001).

In spite of its relevancy and the recent call for a deep understanding of capabilities in the international arena (Lages, Silva, & Styles, 2009; Morgan, Feng, & Whitler, 2018), research on exporting has been sparse, disconnected, fragmented, and limited in explaining how exporting firms identify, design, build, and integrate these capabilities (Chen, Sousa, & He, 2016; Helfat et al., 2007; Raymond & St-Pierre, 2013) to support export performance as firms intensify international operations (Kaleka, 2012; Knudsen & Madsen, 2002; Ling-yee & Ogunmokun, 2001; Rodriguez, Wise, & Martinez, 2013; Weerawardena & Mavondo, 2011; Yalcinkaya, Calantone, & Griffith, 2007). This study inquiries about the role of capabilities and their compound impact on the behavior of high involvement manufacturing exporting firms and tests a comprehensive model that assesses the impact of organizational learning, manufacturing flexibility, market expansion as absorptive capabilities, and innovation and entrepreneurship as integrative capabilities on export performance. The manuscript is structured as follows. First, I discuss the development of competitive capabilities (absorptive and integrative) in exporting. Second, I elaborate on the role of learning, manufacturing flexibility, market expansion-adaptation, innovation capabilities, and the entrepreneurial orientation of exporting firms and propose its complementarity. Third, reflective and formative constructs are validated through the design of confirmatory factor analysis and MIMIC models using Lisrel. Fourth, the methodology is described and the proposed model is tested using PLS. Finally, results and conclusions are discussed in the context of exporting competitiveness. The resource-based view, capabilities, and organization learning are the framework adopted to conceptualize the model for empirical validation.

2. Exporting and the development of capabilities

A non-exporting firm, willing to explore international markets, naturally evolves from a low involvement to a high involvement exporter. This evolution depends on the configuration of internal firm dynamics and capabilities (Yaprak, 1985) and the degree to which they are developed and implemented (Miocevic & Morgan, 2018). Moreover, these exporters perceive new product development, product uniqueness, adequate assets, and technology advantage as critical to their success and adjust their absorptive and integrative capabilities accordingly. The entrepreneurial orientation of high involvement exporters pursues the development of foreign markets, stresses a market orientation (Kayabasi & Mtetwa, 2016), and develops an intrapreneurship orientation (Skarmeas, Lisboa, & Saridakis, 2016). All together, these findings suggest that high involvement exporting firms have developed manufacturing capabilities and technology use, marketing expansion and scanning, innovation capabilities, and decision-making skills, as well as, a market adaptation capability (Westjohn & Magnusson, 2017).

3. Absorptive and integrative capabilities in exporting

Zahra and George (2002) distinguish between potential and realized absorptive capabilities. Potential absorptive capability entails the firm's ability to acquire external knowledge while realized absorptive capacity consists of knowledge transformation and application. Potential absorptive encompasses technology, market, and social learning while realized absorptive is embedded in manufacturing flexibility and marketing expansion and adaptation capabilities. This framework is consistent with the exploration-exploitation perspective by March (1991) which suggests that exploration capabilities are derived from organizational learning (Nelson & Winter, 1982), whereas exploitation capabilities are derived primarily from technological and market resources bases (Yalcinkaya et al., 2007). In this study, I suggest that potential absorptive is embedded in the exporter's learning mechanisms while realized absorptive capacity is embedded in manufacturing flexibility and market adaptation-expansion. In addition, integrative capability combines and exploits resources to transfer the absorption to the value creation process.

4. Learning capability in exporting

In order to assess international product-market opportunities, an "options identification capability" is essential (Johnson, Lee, Saini, & Grohmann, 2003). Learning as a potential absorptive capability supports this identification and makes the firm receptive to acquire and integrate external knowledge into shared routines. In this study, learning is defined as the firm's capability to develop and maintain competencies based on experiences (DiBella, Nevis, & Gould, 1996) and is expressed as action-outcome relationships which include the learning activity and the way this creates change. Organizations learn from external (exploration) and internal (exploitation) sources (March, 1991) and the nature of the content can be technology, market, and social related. Learning about markets affects the firm's preparedness to sense changes and anticipate responses to market demands. As such, the interaction between market exploration and exploitation are linked to export performance (Lisboa, Skarmeas, & Lages, 2013). Firm's export involvement fosters the development of export-importer relationships in international markets and is associated with communication sufficiency and cooperation and trust, as well as, export performance (Smirnova, Naudé, Henneberg, Mouzas, & Kouchtch, 2011). It is clear that the capacity to learn from multiples sources is a critical factor in international performance and allows for the development of reconfiguration capabilities (Hawass, 2010). I discuss these capabilities in the next section.

5. Manufacturing flexibility capability

Manufacturing flexibility is the capability of the firm to respond to environmental changes and uncertainty, with little negative impact on manufacture time, cost, and performance (Upton, 1994). It is the ability to manage production resources and infrastructure to meet customer demands through manufacturing system flexibility delivered by new product, mix, and volume flexibilities (Slack, 2005) that act combined rather than individually. High involvement exporting firms must develop and implement manufacturing flexibility capabilities to face changing demand patterns and production volumes imposed by market uncertainties, as well as, have the capacity to vary product combinations from one period to the next and develop unique features to differentiate products. Therefore, technology learning, an exploration absorptive capacity, feeds the firm's manufacturing flexibility capability as this manages changing demands, cost reductions, rapid prototyping, and production fluctuations. This discussion suggests the following hypothesis:

H1. Technology learning has a direct positive effect on manufacturing flexibility capability in high involvement exporting firms.

6. Innovation capability

Innovation is an essential capability that supports exporting in innovating firms (Bleaney & Wakelin, 2002) and is the firm's ability to develop new products and processes, and achieve superior technological and/or management performance (Rangone, 1999). Moreover, its reconfiguration and combinative nature integrates diverse domains of knowledge to introduce new products to markets (Kogut & Zander, 1992). As Bagchi-Sen (1999) suggested, active involvement in both product and process development clearly distinguishes firms with high export orientation as measured in export revenues from new and redesigned products. In these firms, the identification of new technologies, design of new processes for rapid prototyping of innovation output, development of design capabilities, and adaptation of manufacturing processes are essential for innovation to occur. Thus, the following hypothesis is stated:

H2. Technology learning has a direct positive effect on innovation capability in high involvement exporting firms.

Innovation is possible when manufacturing capabilities are leveraged to support the design and introduction of new products and features in the market through product flexibility and modification flexibility. It is the presence of manufacturing and superior technological capabilities which makes possible to exploit economies of scope through innovation in international markets (Kylaheiko, Jantunen, Puumalainen, Saaranketo, & Tuppura, 2011). Thus, the following hypothesis is proposed:

H3. Manufacturing flexibility capability has a direct positive effect on innovation capability in high involvement exporting firms.

7. Market expansion–adaptation capability

Exporters are externally oriented and consistently follow the development of new market opportunities. They nurture a market orientation; through intelligence generation and responsiveness since it impacts positively export sales and profits (Rose & Shoham, 2002). In complex and turbulent international markets, adaptability is a key antecedent for good business performance (Tuominen, Rajala, & Moller, 2004) and flexibility is an essential ingredient in the design of an export marketing strategy and its performance (Rundh, 2011). In this study, market expansion-adaptation capability is defined as the ability to configure and deploy marketing resources among different export markets to achieve export performance. Because organizations integrate and reconfigure resources and capabilities to match requirements from the environment (Teece, Pisano, & Shuen, 1997), market expansion builds on the firm's adaptation capabilities. Therefore, the following hypothesis is stated:

H4. Market learning has a direct positive effect on market expansion-adaptation capability in high involvement exporting firms.

As exporting firms expand and adapt to new markets, building linkages, upstream and downstream, lateral and horizontal with customers and organizations is required (Teece, 1992). Developing these relationships enhance the firm's competitive advantage and export performance in international markets (Ling-yee & Ogunmokun, 2001). To this end, social learning allows firms to build cooperation with distributors and assist in nurturing, maintaining good relationships, and maturing exchange between parties. This discussion suggests the following hypothesis:

H5. Social learning has a direct positive effect on market expansion-adaptation capability in high involvement exporting firms. Innovation fosters the capacity to improve products and services, support international market expansion strategies, and is associated with seeking high growth markets (Capon, Farley, Lehmann, & Hulbert, 1992). Since higher levels of innovation are associated with greater capacity for adaptation to the environment (Hurley & Hurlt, 1998), the following hypothesis is stated:

H6. Innovation capability has a direct positive effect on market expansion-adaptation capability in high involvement exporting firms.

8. Entrepreneurship orientation

Entrepreneurship orientation is defined as the ability of the firm to use its capabilities to exploit external possibilities, identify market opportunities, and create goods and services. Entrepreneurship predicts the allocation of firms' resources to market heterogeneity in order to enhance customer value (Barney, 2001; Filatotchev, Liu, Buck, & Wright, 2009). The international perspective of entrepreneurship entails innovative, proactive, and risk-seeking behavior that supports value creation and growth across national borders (Phillips McDougall & Oviatt, 2000) and impact export performance through the technology, manufacture, and marketing capabilities the firm develops (Jin & Cho, 2018). Therefore, the following hypothesis is stated:

H7. Entrepreneurship orientation has a direct positive effect on manufacture flexibility capability in high involvement exporting firms. It is entrepreneurship alone and in conjunction with a high market orientation that drives innovation (Nasution, Mavondo, Jekanyika Matanda, & Ndubisi, 2011) and offers the potential for a successful product strategy in exporting markets (Boso, 2012; Lisboa et al., 2013). Therefore, an entrepreneurial orientation allows high involvement exporters to develop superior products, be proactive, take risks, and pursue innovation. This discussion leads to the following hypothesis:

H8. Entrepreneurship orientation has a direct positive effect on innovation capability in high involvement exporting firms.

9. Export performance

Capabilities theory suggests that export performance should reflect its long run benefits of the firm's absorptive capacity and informational architecture (Knudsen & Madsen, 2002). Potential and realized absorptive capacities are enhanced by entering key product markets and explains observed patterns of firm's growth (Helfat et al., 2007). Thereby export performance should reflect sales growth, access to key international markets, and achievement of profit goals as exporting firms expands. Thus, the following hypothesis is suggested:

H9. Market expansion-adaptation capability has a direct positive impact on export performance in high involvement exporting firms. In order to achieve sales growth and profitability, exporting firms invest in the design and development of products and services and the ability to formulate new products and improve existing technologies. Building innovation capabilities helps focus and sustain key exporting markets in the case of highly profitable exporters (Deng, Guo, Zhang, & Wang, 2014; Pla-Barber & Alegre, 2007). Therefore, the following hypotheses are suggested:

H10. Innovation capability has a direct positive effect on export performance in high involvement exporting firms.

H11. Entrepreneurship capability has a direct positive effect on export performance in high involvement exporting firms.

10. Research design

10.1. Sample

Data were collected from seventy-eight manufacturing U.S. firms with considerable experience and involvement in exporting. Approximately 360 firms were approached to collaborate and a response rate of 21.6% was obtained. The sample power is 80% (average loadings $\lambda = .84$ and $\phi = 0.54$). These firms, in average have 47 years in the market and median annual sales of $14'750,000. They have been engaged in exporting for 23 years, exported to 20 countries, and 17.6% of their sales derived from exports with sixty percent exporting more than 10 products. The informants consisted of U.S. managers with an average age of 52 years, 10 years of experience as part of the TMT, and 14 years of experience in exporting. The informants were Presidents and Chief Executive Officers (34.6%), Marketing Vice Presidents and Directors (33.3%), Vice President for International Operations and Export Managers (6.4%), International Marketing and Sales Managers (18.0%), and Business Development Managers (7.7%).

10.2. Operational measure of constructs

All constructs were assessed through well-known and previously used items measured in a seven-point Likert scale (see Table 1).

11. Statistical treatment and analysis

11.1. Reliability of constructs with reflective indicators

The indicators of reflective constructs, market learning, technology learning, and social learning provided unbiased estimates and robust standard errors (Chou & Bentler, 1995). Internal consistency reliability was assessed through Cronbach's alpha coefficients for all learning constructs with reflective indicators and were acceptable above minimum .50 (Nunnally, 1978). Using the items loadings, the internal composite reliabilities (ICRs) were calculated and all exceeded the .70 threshold and Dillon-Goldstein's rho coefficient were above minimum .70 (Chin, 1998). Table 1 shows the reliability indexes for reflective constructs.

Table 1 Confirmatory factor analysis for reflective constructs and VIF for formative constructs in the final model.

Items	Lambda (completely standardized)	Standard Deviation	T-value	R^2 (item variance explained)	VIF Variance inflation factor
Entrepreneurship Orientation	Source: Covin, 1989				
▪ In dealing with its competitors, my firm: …is seldom the first business to introduce new products, administrative techniques ---------- is often the first business to introduce new products, administrative techniques. (EO1)	Na	Na	Na	Na	1.14
▪ Top managers of my firm have: …a strong tendency for low risk projects (with normal rates of return) -------- a strong tendency for high-risk investments (with chances for very high rates of return). (EO2)	Na Na	Na Na	Na Na	Na Na	1.09 1.08
▪ Top managers of my firm believe: …it is best to explore new opportunities cautiously via "one step at a time" adjustments -------- hold and wide-ranging changes are necessary to achieve the firm's objectives. (EO3)					
Manufacturing Flexibility Capability	Source: Zhang, 2003; Koufteros, 2002				
▪ We can vary aggregate production output from one period to the next. (MF1)	Na	Na	Na	Na	1.52
▪ We can develop unique features to differentiate our products. (MF2)	Na	Na	Na	Na	1.30
▪ We can develop new products. (MF3)	Na	Na	Na	Na	1.44
Market Expansion-Adaptation Capability	Source: Li, 1999; Yang, 1992				
▪ Our organization has the capability to offer a variety of products to satisfy international demand. (ME1)	Na	Na	Na	Na	1.38
▪ Our firm responds with sufficient speed when it comes to communicate and sell our products. (ME2)	Na Na	Na Na	Na Na	Na Na	1.30 1.09
▪ Our firm responds with sufficient speed when it comes to product modifications (ME3)					
Market Learning ($\alpha = 0.74$) (ICR = 0.88) ($\rho = 0.86$) (*)	Source: Yeoh, 2004				
▪ Design or adapt products to satisfy exporting markets' needs. (ML1)	1.00 (0.76)	------	------	0.57	Na
▪ Identify and track customer needs to forecast potential market sales. (ML2)	0.97 (0.73) 1.12 (0.84)	0.15 0.15	6.64 7.62	0.54 0.71	Na Na
▪ Identify/design and manage distribution channels to have adequate presence in exporting markets. (ML3)	0.73 (0.61)	0.14	5.30	0.37	Na
▪ Obtain information about competitors to shape firm's exporting strategy. (ML4)					

Table 1 (continuation) Confirmatory factor analysis for reflective constructs and VIF for formative constructs in the final model.

Technology Learning (α = 0.78) (ICR = 0.86) (ρ = 0.87) (*)	Source: Zahra, 2000				
▪ Adapt manufacturing processes to satisfy local market specifications. (TL1)	1.00 (0.72)	------	------	0.51	Na
▪ Design new production processes for rapid prototyping. (TL2)	1.09 (0.72)	0.20	5.52	0.52	Na
▪ Identify new technologies to reduce production costs. (TL3)	0.95 (0.66)	0.18	5.12	0.44	Na
▪ Coordinate R&D activities with other organizational units for timely market introductions. (TL4)	1.09 (0.75)	0.23	4.84	0.56	Na
Social Learning (α = 0.85) (ICR = 0.90) (ρ = 0.91) (*)	Source: Yeoh, 2004				
▪ Identify and connect with foreign buyers to facilitate communication. (SL1)	1.00 (0.87)	------	------	0.76	Na
▪ Manage cooperative relationships with suppliers to assure timely outsourcing. (SL2)	0.68 (0.72)	0.09	7.33	0.52	Na
▪ Build collaborative relationships with distributors to sustain and promote exporting sales. (SL3)	0.89 (0.77)	0.11	8.10	0.59	Na
▪ Develop trust with business partners to assist negotiations. (SL4)	0.88 (0.78)	0.11	8.28	0.61	Na
Innovation Capability	Source: Tatikonda, 2001; Moorman, 1999				
▪ Our organization invests resources in the development and design of new products/services. (IN1)	Na	Na	Na	Na	2.24
▪ Our organization has the ability to formulate and develop new products. (IN2)	Na	Na	Na	Na	3.72
▪ Our organization has the ability to adopt new or improve existing processing technologies or methods. (IN3)	Na	Na	Na	Na	2.50
Export Performance	Source: Zou, 1998				
▪ Please indicate the extent to which your firm achieved the following exporting objectives in relation to top management's expectations:					
▪ Sales growth (SAG)	Na	Na	Na	Na	1.78
▪ Enter key markets abroad (Saban, Lanasa, Lackman, & Peace)	Na	Na	Na	Na	1.83
▪ Export profits (XPRF)	Na	Na	Na	Na	2.31

(*) α = Cronbach's alpha; ICR = Internal composite reliability; ρ = Dillon-Goldstein's rho calculated for constructs with reflective indicators.

11.2. Discriminant and convergent validity of constructs with reflective indicators

I performed a confirmatory factor analysis using LISREL 8 (Joreskog & Sorbom, 1993) on the sample to assess the adequacy of behavioral measures and test for discriminant validity. All indicators loaded in their respective constructs as theory suggests, and the model fit with a χ^2 = 59.96, 48 degrees of freedom (d.f.), p = .120, goodness of fit index (GFI) = .89 (independent model with χ^2 = 1258.14 and 66 d.f.), comparative fit index (CFI) = .99, Normed fit index (NFI) = .95, and RMSEA = .057 and test of close fit (RMSEA < .05) = .38.

The results of the confirmatory analysis are shown in Table 1. All lambda completely standardized coefficients are significant at $p < .05$ and item variances explained range from .37 to .76. All constructs show acceptable discriminant validity as shown in Table 2 (Fornell & Larcker, 1981). The requirement that loadings for each indicator should be greater that its cross-loadings if satisfied for all constructs with reflective indicators (Chin, 1998). All constructs' AVEs with reflective indicators are greater than 0.50 indicating sufficient validity.

11.3. Validity of constructs with formative indicators

Since several of the constructs proposed in the theoretical model are measured as formative first-order, their construct validity needs to be assessed. Following Chin (1998) and Tenenhaus, Vinzi, Chatelin, and Lauro (2005) indicators weights were examined by means of bootstrapping and loadings to assess their significance. All indicators weights were significant with the exception of IN2 and XPRF; however, all loadings showed statistical significance. Given this, I did not drop these indicators because they contribute conceptually to the innovation capability and performance constructs. Conceptual reasoning should prevail when deciding to drop a formative indicator (Jarvis, Mackenzie, & Podsakoff, 2003; Mackenzie, 2003). In order to confirm the relevancy of indicators and test for validity of the formative construct, I used MIMIC (multiple indicators and multiple causes) models (Diamantopoulos & Winklhofer, 2001). This approach requires selecting a reflective indicator that summarizes the essence of the construct in order to achieve identification and minimize error estimates (Diamantopoulos, 2006). Following Mackenzie, Podsakoff, and Jarvis (2005) and Jarvis, Mackenzie, and Podsakoff (2003), a MIMIC model for manufacture flexibility capability, innovation capability, market expansion-adaptation capability, entrepreneurship orientation, and export performance was estimated. Table 2 illustrates the reflective indicators used for the estimation of MIMIC models for each formative construct, model criteria, and RMSEAs; all indicate good construct validity.

Table 2 Parameter estimation and fit of mimic models for formative constructs.

Constructs	Chi-Square D.F./P-value	Normed Fit Index (NFI)	Goodness of Fit Index (GFI)	RMSEA
Manufacturing Flexibility Capability				
▪ Our organization has the ability to adopt new or improve existing processing technologies or methods. ▪ Our organization has the ability to adapt existing production lines to satisfy international product demands.	2.82 2/0.24	0.98	0.99	0.07
Innovation Capability				
▪ We can develop new products. ▪ Extent to which your firm improve international competitiveness.	0.58 2/0.75	1.00	1.00	0.00
Market Expansion-Adaptation				
▪ Our firm responds with sufficient speed when it comes to communicate and sell our products/services. ▪ Our firm responds with sufficient speed when it comes to product/service modifications.	4.22 3/0.25	0.98	0.98	0.06
Entrepreneurship Capability				
▪ Within the organization, unconventional approaches are encouraged and rewarded. ▪ Our organization continuously explores new international market opportunities.	0.22 2/0.89	1.00	1.00	0.00
Export Performance				
▪ Extent to which your firm achieve export success. ▪ Extent to which your firm achieve its export goals.	0.30 2/0.86	1.00	1.00	0.00

The variance inflation factor (VIF) for each indicator of the formative constructs needs to be calculated to assure the existence of non-significant levels of multicollinearity. All VIFs with the exception of IN2 (VIF equal to 3.72) are lower than 3.3 (Diamantopoulos & Siguaw, 2006) and all are below the accepted cut-off value VIF < 10 suggesting no multicollinearity and hence validity of formative constructs at the indicator level (see Table 1).

Finally, a confirmatory factor analysis approach to Harman's one factor (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) was used to test for common method variance. Common method variance does not cause a problem since a one-factor model did not fit (χ^2 = 777.09, 252 degrees of freedom (d.f.), p = .000, goodness of fit index GFI = .54, and RMSEA = .16).

11.4. Testing the structural model

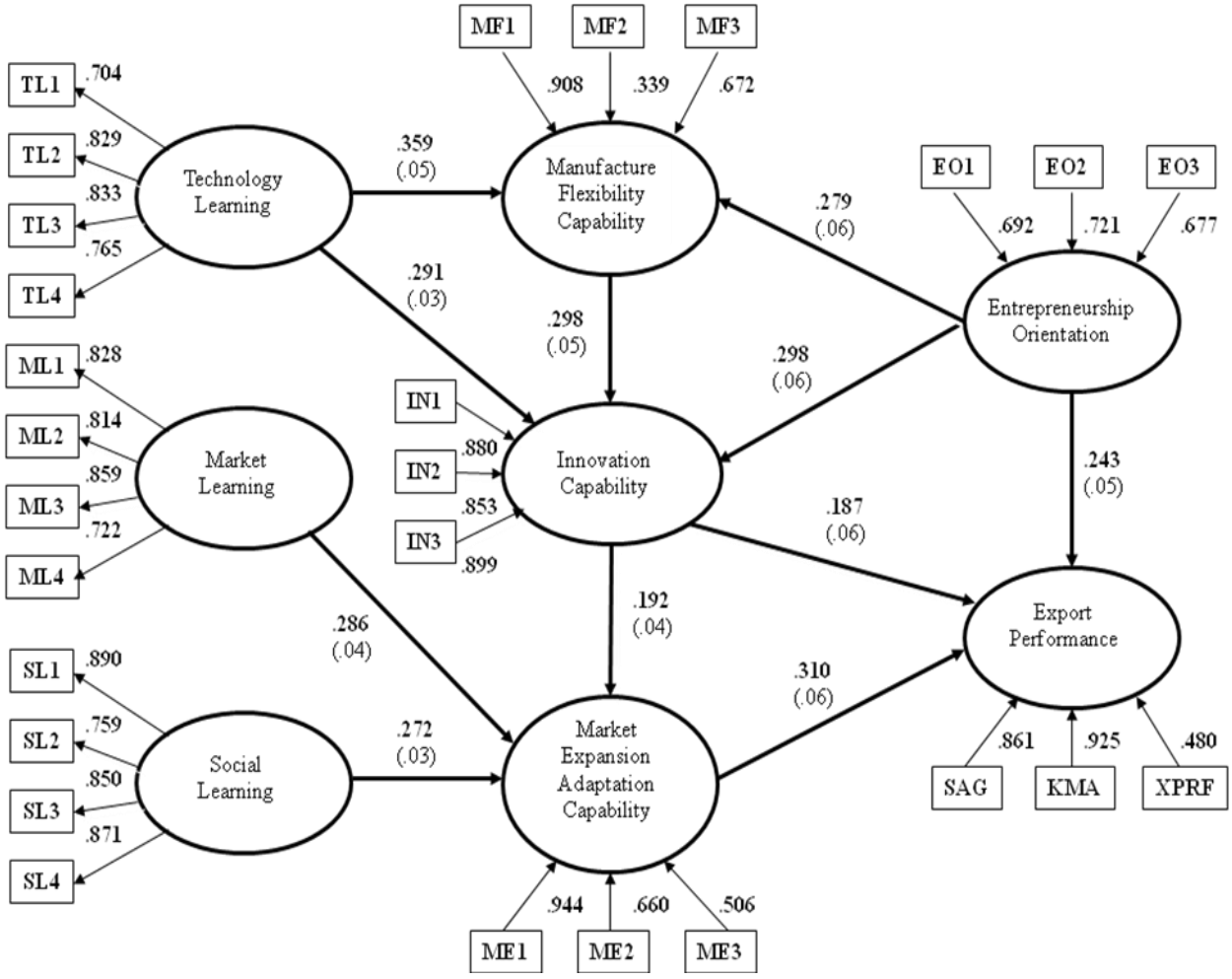
The final model was estimated using Partial Least Squares Path Modeling (Tenenhaus et al., 2005). The overall goodness of fit index GOF for the measurement model is .97, while GOF for the structural model is .90. The AVE (communalities) range is .464 to .770. Thus, validity of indicators in predicting their constructs is adequate. The coefficient of determination (R^2) is the criteria to evaluate the inner path model estimates and a measure of explanatory power. These values for all endogenous latent constructs were manufacturing flexibility (0.28), innovation capability (0.53), market expansion-adaptation capability (0.38), and export performance (0.32). Since all endogenous constructs are only explained by one or two exogenous constructs, these values were considered moderate and acceptable following Chin (1998) recommendation.

Redundancy index measures the quality of the structural model for each endogenous construct taking into account the measurement model. This model specification explains 13.0% of the variance in manufacturing flexibility, 40.5% in the innovation construct, 20.0% in market expansion-adaptation, and 19.7% in the firm's export performance. These redundancies show acceptable levels because each latent variable is explained by only a few exogenous latent variables (Henseler, Ringle, & Sinkovics, 2009). The VIP (variable importance for the projection) measures the importance of each explanatory variable in predicting the exogenous constructs. The VIPs for all independent variables range from .82 to 1.29 above the minimum cutting value of .80. The exception was the construct of innovation when predicting market expansion (VIP = .73) and export performance (VIP = 0.69). Overall, all exogenous constructs show a large predictive relevancy.

11.5. Hypotheses testing

The direct causal effect from technology learning to manufacturing flexibility is .359. Therefore, hypothesis H1 is accepted; managers perceive a positive relationship between technology learning and manufacturing flexibility capabilities in high involvement exporting firms. The direct effect from technology learning to innovation capability is .291; thus, H2 is accepted. In order to build innovation capabilities, high involvement exporting firms need to develop learning capabilities focused on technology absorption. The direct effect from manufacture flexibility capability to innovation is .298; thus, H3 is accepted. The direct effect from market learning to market expansion-adaptation capability is .286 thus H4 is accepted. Social learning has a direct impact .272 on market expansion-adaptation capabilities and H5 is accepted. The direct effect from innovation to market expansion-adaptation is 0.192. Then hypothesis H6 is accepted. Entrepreneurship orientation has a direct effect of .279 on manufacturing flexibility capability and H7 is accepted. Hypothesis 8 is accepted as entrepreneurship orientation contributes to build innovation (.298). Finally, the direct effect of market expansion-adaptation (.310), innovation capability (.187) and entrepreneurship orientation (.243) on performance is very strong compare to the indirect effects (entrepreneurship orientation to export performance = .060 and innovation capability to export performance = .060), therefore H9, H10, and H11 are accepted. The complete estimated model is shown in Figure 1.

Figure 1 Final model estimation.



12. Discussion and implications

Overall, this model suggests that high involvement exporting firms require a blend of learning, manufacturing flexibility, and market expansion as absorptive capabilities. This closeness in time and space between the exploration and exploitation nature of these capabilities may reduce the uncertainty in returns as suggested by March (1991). Innovation and entrepreneurship as integrative capabilities add to this configuration in order to develop their competitiveness in international markets. First, technology learning assures development of manufacturing flexibility and feeds the firm's innovation capabilities. In addition, market and social learning nurture the market expansion and adaptation capabilities of the firm. These findings are consistent with Lefebvre, Lefebvre, and Bourgault (1998) who concluded that emphasis on R&D and product improvement and collaboration with competitors are characteristic of successful high involvement exporters. It also confirms Li, Nicholls, and Roslow (1999) suggestion that exporting firms should learn about markets to enhance new product success and Leonidou and Kaleka (1998) finding that strong exporter-importer relationships determine high involvement in international markets.

Second, high involvement exporting firms require an entrepreneurship orientation in order to make use of their innovation capabilities when transferring innovation output to the market. To this purpose, entrepreneurship as an integrative capability is required to build flexibility in manufacturing and promote innovation as it drives export performance. This finding extends Barney (2001) proposition that entrepreneurship predicts firms' resource allocation to market heterogeneity by suggesting specific paths to export performance.

Third, innovation capabilities intertwine technology learning and manufacture flexibility in building the ability to configure and deploy marketing resources in high involvement exporting firms. This dynamic nature of innovation has been suggested previously by Bagchi-Sen (1999) as related to product and process development.

Apparently, high involvement exporters need to develop their adaptation abilities in conjunction with their expansion efforts to generate market growth. Fourth, market and social learning impact the firm's exporting market expansion-adaptation capabilities. High involvement exporters when expanding internationally require a deep learning about markets and social networks to build their presence. More importantly, market expansion-adaptation capability is necessary to bring innovation output to international markets. As such, it becomes an exploitation capability that triggers export performance.

Finally, performance of high involvement exporting firms is supported on market expansion-adaptation, innovation, and entrepreneurship capabilities. The integration and complementarities of these capabilities influence firms' strategic posture, involvement in international markets, and exporting performance. Clearly, this dynamic perspective addresses the firm's long run benefits, which are sustained in its absorptive capacity (Knudsen & Madsen, 2002), and expands the notion of an indirect effect of product development capabilities on export performance (Kaleka, 2012).

Overall, these conclusions concur with the notion that exploration capabilities are driven by organizational learning (Nelson & Winter, 1982), whereas exploitation capabilities are built upon technological and market resources (Yalcinkaya et al., 2007) in high involvement exporting firms. These exporters have developed absorptive and integrative capabilities to co-align resources and reconfigure them into new value creating strategies to support their international competitiveness.

13. Further research

A central research endeavor is to further the understanding of capability reconfiguration in high involvement exporting. Does entrepreneurial orientation determine the configuration and integration of capabilities and its equifinality through diverse paths? How absorptive and integrative capabilities bring ambidexterity in exporting activities conducive to performance and growth?

Further research should examine the notion of satisfying levels of learning and its re-ignition (Winter, 2000) and how these changes depending on the level of organizational maturity (from low to high involvement exporter). Similarly, the impact of new learning on the design capability of exporters is an unknown; hence, studies should focus on the role of new product development and design capabilities in the competitiveness of exporters. Previous research has suggested that time to market and product design cycle (Lim, Sharkey, & Heinrichs, 2006), as well as, indirect learning are needed for high export involvement. As such, design management is intrinsically an integrative capability that supports differentiation and innovation in international markets and deserves a research inquiry.

Another provocative research avenue is the impact of entrepreneurship capabilities in sustaining export presence through continuous innovation and market expansion. Limited is our knowledge on how these capabilities must be developed and their impact on response and strategic flexibility in international markets beyond the work by O'Cass and Weerawardena (2009). From a methodological perspective, future studies should examine specific theoretical components of several constructs. For example, manufacturing flexibility and market expansion adaptation can be modeled as more complex multidimensional constructs. These two concepts have not been used extensively in exporting studies. Finally, longitudinal studies that assess non-recursive links in the proposed model are suggested for future research endeavors.

14. Limitations

Although this study produces several relevant findings to the performance of high involvement exporting firms and the integration of competitive capabilities, these should be evaluated in light of the following limitations: First, the assessment of exporting capabilities entails different internal perspectives in the firm; as such, the data collection would benefit from different sources. Second, one of the indicators for manufacture flexibility capability showed a low cross loading. A review of the formative indicators of this construct is suggested.

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