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Export performance as a function of market learning capabilities and

intrapreneurship: SEM and FsQCA findings

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Abstract

This study draws on the resource-based, dynamic capabilities, and organization learning theories to investigate the internal mechanisms through which intrapreneurship influences current and future export performance. Specifically, this approach views the four distinct dimensions of intrapreneurship, namely new business venturing, innovativeness, self-renewal, and proactiveness, as critical resources, and export market exploitation and exploration as important market learning capabilities. The study posits that such resources and capabilities collectively contribute to improve export performance outcomes. The study develops a theoretically anchored model and employs both structural equation modelling and fuzzy-set qualitative comparative analysis to test the model relationships. These two techniques have different foci: the net effect of an independent variable on an outcome variable and the conditions that lead to a given outcome, respectively. The study results provide substantial support for the theoretical framework and a valuable addition to the scant literature on the roles of intrapreneurship and market exploitation and exploration in exporting.

Keywords**:** Intrapreneurship; market exploitative and explorative capabilities; performance; fuzzy-set qualitative comparative analysis

1.   Introduction

Prior research suggests that intrapreneurship (i.e., entrepreneurship within an existing organization) can help firms revitalize their businesses, innovate, adapt to changes in their internal and external environments, and enhance their performance (e.g., Felício et al., 2012). In addition, the business press provides many examples of firms that struggle to survive due to their inability or unwillingness to adopt an intrapreneurial posture. A case in point is Kodak: failure to renew the product offering and adapt to the digital photography era made Kodak's business obsolete (The Economist, 2012). However, despite the increasing interest in intrapreneurship from both researchers and practitioners, significant gaps in the literature remain. The present study addresses these gaps and has a threefold contribution, as explained below.

Although intrapreneurship consists of new business venturing, innovativeness, self-renewal, and proactiveness (Antoncic & Hisrich, 2001), past research mainly follows a composite dimension approach, summing across all four aspects of intrapreneurship to create a single construct (Felício et al., 2012). However, such an aggregate view does not adequately represent the various components of intrapreneurship, which can vary independently of one another and have distinct effects on firm outcomes. Therefore, examination of the individual components of intrapreneurship can provide more fine-grained information than the composite index (e.g., Dess et al., 1999).

Additionally, most prior research investigates the direct relationship between intrapreneurship and performance outcomes based on the belief that intrapreneurial firms perform much better than non-intrapreneurial ones (Antoncic & Hisrich, 2001; Felício et al., 2012). However, previous studies have yielded mixed and generally modest evidence

of a positive intrapreneurship–performance link (Felício et al., 2012; Zahra, 1991). These findings suggest that simply examining such a direct relationship provides an incomplete picture of the role intrapreneurship can play in influencing performance, indicating the need for greater understanding of the internal processes through which intrapreneurship affects performance. The present study posits that market exploitation and exploration play a key role here. Exploration generates new, unsettled knowledge with potentially high but uncertain returns, whereas exploitation generates incremental knowledge with moderate but certain, immediate returns (Schulz, 2001). Developing new knowledge or improving existing knowledge about a market through exploration and exploitation capabilities enables the firm to utilize and realize the value of intrapreneurship, and in turn, lead to better present (i.e., market effectiveness) and future (i.e., anticipated) performance.

Finally, intrapreneurship studies in the context of exporting have lagged behind those in domestic settings (Urbano et al., 2013). This lack of research is unfortunate for three main reasons: First, growing liberalization of markets along with intensifying competition worldwide has led many firms, regardless of size or industry, to internationalization (Sousa & Tan, 2015). Second, exporting is a flexible, cost-effective (i.e., requiring minimal financial, human, and other resource commitments), and common foreign-market entry mode (Samiee et al., 2015). Third, the key components of intrapreneurship (i.e., pursuit of new business ventures, ability to innovate, continuous self-renewal, and adoption of a proactive stance) can help explain a firm's internationalization efforts (De Clercq & Zhou, 2014).

Against this background, this study contributes to the literature by investigating the multiple pathways of intrapreneurship components and market capabilities that result in performance outcomes within the underresearched, but important, context of exporting. The objective is to provide a nuanced coverage of these relationships by comparing the conventional technique of structural equation modeling (SEM) with fuzzy-set qualitative comparative analysis (fsQCA), a novel configurational method that addresses important limitations of traditional correlational analyses (Woodside, 2013). The study shows how fsQCA identifies alternative combinations of causal antecedent conditions that lead to a given outcome, and therefore handles nonlinear and asymmetric relationships in a more effective way compared to correlational techniques, such as SEM.

2. Conceptual framework

The resource-based view (RBV) of the firm is one of the leading theoretical perspectives in contemporary management, marketing, and strategy research (Barney, 1991). Early treatments of the RBV identify resources as the basis for firm success. Resources are stocks of tangible or intangible assets the firm possesses or controls that enable the firm to conceive of and implement strategies that improve its performance (Barney, 1991). Intrapreneurship reflects a corporate culture that encourages deviation from the customary way of doing business (Antoncic & Hisrich, 2001). Specifically, new business venturing refers to the creation of new businesses by redefining the firm's offerings and/or by developing new markets (Zahra, 1991). Innovativeness concerns the development of new products/services and technologies (Lumpkin & Dess, 1996). Self-renewal refers to the transformation of the firm through the renewal of its key ideas

(Antoncic & Hisrich, 2001). Proactiveness reflects the firm's propensity to anticipate and act on future market changes (Lumpkin & Dess, 1996). Thus, intrapreneurship constitutes an important strategic resource that guides the firm's philosophy of business management and competition, which explains the bulk of research on the direct effects of intrapreneurship on firm performance (Urbano et al., 2013).

However, the dynamic capabilities (DC) extension of the RBV considers capabilities, rather than resources, as central to firm success (Morgan et al., 2009). Capabilities are the internal routines, skills, and processes that enable a firm to adapt to its environment and make best use of its resources (Teece et al., 1997). In this regard, new business venturing, innovativeness, self-renewal, and proactiveness as resources only have potential value and a firm needs to develop certain capabilities to capitalize on them. Organization learning theory identifies exploitation and exploration as the two key mechanisms that firms employ to develop and create knowledge and better fit to their environment (March, 1991). Export market exploitation refers to the firm's ability to refine, develop, and extend its existing overseas market and customer knowledge, skills, and processes; export market exploration refers to the firm's ability to acquire new overseas market and customer knowledge, skills, and processes (Lisboa et al., 2013). The outcomes of exploitation are immediate, whereas exploration outcomes may take some time to materialize (March, 1991).

Accordingly, this study focuses on current as well as future export performance. Market effectiveness refers to the degree to which the firm has achieved its export market-based goals, whereas future performance refers to the profitability expectations of the exporting firm for the following three years (Vorhies & Morgan, 2005).

Drawing on the RBV, DC, and organizational learning theories, this study investigates the complex combinations of intrapreneurship dimensions (i.e., new business venturing, innovativeness, self-renewal, proactiveness), which give rise to certain market learning capabilities (i.e., export market exploitation and export market exploration). In turn, the study explores how intrapreneurship dimensions and market learning capabilities collectively result in high export market effectiveness and anticipated export performance (Figure 1).

Figure 1 here.

3. Method

3.1. Measurement, sampling, and data collection

The study used well-established measures from existing research and adapted them when necessary to suit the exporting context. This section provides the sources of the measures, along with example items. New business venturing (e.g., broadening business lines in current industries), innovativeness (e.g., emphasis on developing new and innovative products), self-renewal (e.g., encouraging employee creativity and innovation), and proactiveness (e.g., adopting a very competitive, "undo-the-competitors" posture) measures come from Antoncic and Hisrich (2001). Export market exploitation (e.g., enhancing the capture of important market information about existing markets) and exploration (e.g., acquiring export market-related information about new markets) capabilities items derive from Lisboa et al. (2013). The items export market effectiveness (e.g., sales volume and share growth) and future export performance (e.g., profitability and sales volume) items come from Vorhies and Morgan (2005).

The sampling frame of this study is the Portuguese Statistics Institute database. The study uses a multi-industry sample. An online survey to 1271 eligible Portuguese export manufacturers provided the data, resulting in 265 usable responses (21% response rate). On average, respondent firms have 124 employees, have exported for 22 years, and serve 14 foreign markets. The research team checked for non-response and common method biases by comparing the responses of early and late respondents and using Harman's single factor test, respectively. The results show that none of these biases poses a significant problem in this study.

3.2.   Configurational versus correlational approaches

FsQCA is a configurational approach that uses Boolean algebra to implement principles of comparison. Boolean methods of logical comparison represent each case as a combination of causal and outcome conditions (Ragin, 2000) and suggest that patterns/combinations of attributes present different features and lead to different outcomes depending on their combination (Fiss, 2007; Ragin, 2000). Configurational theory stresses the importance of nonlinearity (i.e., relationships between variables are not always symmetric and linear), synergistic effects (i.e., focus on effects of combinations of variables, rather than net effects), and equifinality (i.e., alternative paths can explain a given outcome).

On the contrary, conventional correlational methods tend to rely on the principles of linearity, additive effects, and unifinality (Fiss, 2007). For instance, regression-based techniques (e.g., SEM) treat independent variables as competing in explaining variation in outcomes, rather than showing how variables combine to create outcomes. By focusing

on the unique contribution of a variable, while holding constant all other variables, a correlational approach has difficulty in treating cases as configurations and examining combinations of variables (Fiss, 2007). Thus, correlational approaches fail to identify the specific conditions under which a variable may influence an outcome. Studies use two- and three-way interaction effects to examine configurations in correlational techniques. From a theoretical perspective, configurations may well exceed the limit of three variables, but, empirically, three-way interactions currently represent the boundaries of interpretable regression analysis (Dess et al., 1997). Furthermore, regression methods cannot take equifinality into account. Although interaction effects attempt to test a nonlinear relationship, they assume that this relationship is relevant for all cases. In other words, they fail to assess alternative paths that may lead to the same outcome.

FsQCA identifies alternative combinatorial antecedent conditions that lead to an outcome, and hence addresses more convincingly the problems of linearity, non-synergistic effects, and unifinality (Lisboa et al., 2016). The aim of fsQCA is to identify necessary and sufficient conditions for an outcome (Ragin, 2000). Necessary conditions are necessary to produce the outcome, but they may not be enough by themselves (Dul, 2016). Sufficient conditions always lead to the given outcome by themselves. For any given outcome, several alternative sufficient conditions may co-exist, and fsQCA tries to identify them all. Prior to the implementation of fsQCA, researchers convert all variables into sets. A set represents the degree of membership in a specific category/condition (Berbegal-Mirabent et al., 2015; Woodside, 2013). FsQCA enables researchers to test for fuzzy-set membership in an outcome condition for all possible combinations of the antecedent factors (for a detailed exposition of the technique, see Skarmeas et al., 2014).

The present research implements both SEM (EQS is one of the most widely used SEM programs) and fsQCA for the examination of the proposed research model. The purpose of using both techniques is to illustrate the merits of fsQCA and the additional insights this technique offers over conventional regression-based approaches, such as SEM.

4. Analysis

4.1. Measurement model

Confirmatory factor analysis in EQS assesses overall measurement quality. The study uses maximum likelihood estimation procedure to estimate parameters. The measurement model results show an acceptable fit (χ^2 = 1696.40, 712 d.f., p < 0.001, NFI = 0.90, CFI = 0.91, RMSEA = 0.07). All constructs present acceptable composite reliability (ρ > 0.74) and average variance extracted ($\rho vc(n)$ > 0.50) values. The minimum factor loading and t-value are 0.52 and 8.49, respectively, indicating convergent validity. Furthermore, in all cases the correlation of two latent constructs is less than the square root of the average variance extracted estimates of the two constructs, which indicates discriminant validity. In sum, the results suggest that the measurement model fits the data reasonably well and the constructs possess sufficient measurement properties for further analyses.

4.2. Structural model results

EQS serves to construct and test a structural model that describes the linkages among the study constructs (Table 1). The results indicate an acceptable fit to the data (χ^2 = 1698.14, 707 d.f., p < 0.001, NFI = 0.90, CFI = 0.91, RMSEA = 0.07). The study

conducts one-tailed tests because theoretical considerations can produce directional predictions. The results show that new business venturing ($\beta = 0.18$, $p < 0.01$), innovativeness ($\beta = 0.24$, $p < 0.01$), and self-renewal ($\beta = 0.33$, $p < 0.01$) positively relate to export market exploitation. New business venturing ($\beta = 0.33$, $p < 0.01$), innovativeness ($\beta = 0.25$, $p < 0.01$), and self-renewal ($\beta = 0.28$, $p < 0.01$) positively relate to export market exploration, whereas proactiveness negatively relates to export market exploration ($\beta = -0.15$, $p < 0.05$). Further, export market exploitation positively relates to export market effectiveness ($\beta = 0.41$, $p < 0.01$), while export market exploration positively relates to future export performance ($\beta = 0.19$, $p < 0.05$).

Table 1 here.

4.3. FsQCA results

Table 2 illustrates the complex solutions and relevant causal recipes of sufficient combinations, which lead to high membership in each of the four outcome conditions. The table presents the complex solutions (not the parsimonious or intermediate ones), as these solutions make no simplifying assumptions (Ragin, 2000). All four models are informative; with consistency values higher than 0.80, and coverage values ranging between 0.25 and 0.65, following previous literature suggestions (e.g., Woodside, 2013).

Table 2 here.

4.3.1. Causal recipes for export market exploitation and exploration

The results suggest one pathway to high export market exploitation. High new business venturing, high self-renewal, and high provocativeness are the three necessary

simple antecedent conditions, which collectively are sufficient for high export market exploitation (consistency = 0.86; coverage = 0.59). Evidently, out of the four dimensions of intrapreneurship, innovativeness is the only strategic resource that can be either present or absent, and hence is not necessary for the development of export market exploitation.

The solution regarding the causal pathways to high export market exploration indicates two configurations. The first one suggests that high new business venturing, high innovativeness, and high self-renewal, combined with low proactiveness, can lead to high export market exploration (consistency = 0.89; coverage = 0.40). Alternatively, high new business venturing, high self-renewal, and high proactiveness, coupled with low innovativeness, are also suggestive of high export market exploration (consistency = 0.90; coverage = 0.37). The solution as a whole is fairly consistent at 0.88, with a coverage value of 0.47. The results imply that high new business venturing and high self-renewal are the two necessary (but insufficient) simple antecedent conditions for high export market exploration. These two conditions require also high levels of either innovativeness or proactiveness. In other words, the results indicate that a highly innovative posture may compensate for a firm's low proactiveness and vice versa.

4.3.2.   Causal recipes for export market effectiveness

Regarding the outcome condition of export market effectiveness, the solution suggests four pathways. The first three pathways indicate that low innovativeness coupled with high proactiveness can lead to high export market effectiveness if (a) self-renewal and export market exploration are both high (pathway one: consistency = 0.91; coverage = 0.35) or (b) self-renewal and export market exploration are both low, given

that export market exploitation is also high (pathway two: consistency = 0.92; coverage = 0.29) or (c) new business venturing and self-renewal are both low, given that export market exploitation is high (pathway three: consistency = 0.92; coverage = 0.28). Finally, if new business venturing, innovativeness, and proactiveness, along with export market exploitation are simultaneously high, they may compensate for a low self-renewal posture and lead to high export market effectiveness (pathway four: consistency = 0.92; coverage = 0.30). The solution has a high consistency of 0.89 and a satisfactory coverage of 0.43.

The pattern of results suggests some interesting conclusions. For example, in terms of intrapreneurship components, a high proactive posture is the only necessary simple antecedent condition (though insufficient) for high export market effectiveness. All other three intrapreneurship components can be either present or absent, depending on the combination of additional antecedent conditions that occur in specific causal recipes. In terms of export market learning capabilities, the presence of exploitative capabilities seems to facilitate market effectiveness, as they appear in three out of four recipes, whereas the mixture of results for explorative capabilities suggests that, under certain conditions, such capabilities can be either present or absent.

4.3.3. Causal recipes for future export performance

The model of the antecedent conditions relating to high future export performance suggests four pathways. The first one indicates that high new business venturing and innovativeness, with low self-renewal and proactiveness, combined with high market exploitation may lead to high future export performance (consistency = 0.92; coverage = 0.30). Pathway two indicates that low levels of self-renewal and proactiveness can lead to

high future export performance, if a new business venturing posture appears with both market exploitation and exploration (consistency = 0.91; coverage = 0.30). The third pathway suggests that low new business venturing and proactiveness may lead to high future performance in cases where an innovative posture appears together with both export market exploitation and exploration (consistency = 0.92; coverage = 0.29). Pathway four suggests that high new business venturing and innovativeness, together with both export market exploitation and exploration, may compensate for a low self-renewal posture of the firm, and therefore lead to high future performance (consistency = 0.92; coverage = 0.32). The solution has a high consistency of 0.90 and a satisfactory coverage of 0.42.

Again, the results reveal some interesting findings. For example, regarding intrapreneurship features, the presence of innovativeness in three out of four recipes indicates that this condition facilitates future export performance; whereas low values (absence) of self-renewal and proactiveness may also contribute toward the same direction (low levels of these two postures appear in three out of four recipes). Generally, the presence of new business venturing seems to positively affect future export performance, although under certain conditions, its absence may also facilitate enhanced future export performance (pathway three). In terms of export market learning capabilities, the presence of market exploitation is necessary but insufficient for high future export performance, because this condition appears in all four pathways. Similarly, high explorative capabilities seem to facilitate future performance; however, they are not a necessary condition as they appear in three out of four causal recipes.

5. **Discussion**

Both research (Kuckertz et al., 2015) and practice (The Economist, 2012) recognize the importance of adopting an intrapreneurial spirit in today's highly competitive and fast-paced business environment. While most previous research examines intrapreneurship's performance implications as a gestalt construct, this study investigates the complex processes through which the individual components of intrapreneurship affect current and future performance. Such a perspective can clarify the mixed findings in the literature regarding the performance outcomes of intrapreneurship because new business venturing, innovativeness, self-renewal, and proactiveness may vary independently and have different effects on performance. The study views new business venturing, innovativeness, self-renewal, and proactivenes as key resources available to firms and exploitative and explorative learning capabilities as the internal mechanisms that translate those resources into performance. Table 3 illustrates the recipes that associate with high membership scores in the outcome conditions.

Table 3 here.

SEM results suggest that new business venturing, innovativeness, and self-renewal positively relate to both export market exploitation and exploration, whereas proactiveness negatively relates to export market exploration. FsQCA provides a more nuanced coverage of how intrapreneurship dimensions affect export market exploitative and explorative capabilities. For example, new business venturing and self-renewal are necessary conditions for both capabilities (which is in line with SEM results), but innovativeness can be either present or absent for both capabilities, depending on the combination of additional antecedent conditions that occur in specific causal recipes.

Interestingly, fsQCA results suggest that proactiveness is a necessary condition for export market exploitation and that, under certain conditions, proactiveness can also have a positive effect on export market explorative capabilities. Clearly, fsQCA provides evidence supporting a non-linear/asymmetric relationship between proactiveness and export market exploration.

Furthermore, SEM results indicate that export market exploitation and exploration drive current and future export performance, respectively. FsQCA suggests that although the presence of export market exploitation can indeed contribute to current export market effectiveness, export market exploitation is not a necessary condition, because this condition appears in three out of four recipes. Also, fsQCA results support a non-linear relationship between market explorative capabilities and market effectiveness. Regarding future export performance, fsQCA results are in line with SEM results in that market exploration enhances future export performance, though this is not a necessary condition. On the contrary, the presence of market exploitation is a necessary condition for anticipated export performance, because this condition appears in all causal recipes. Evidently, fsQCA results are more informative (compared to SEM results), because they provide detailed insights into the alternative combinations (configurational paths) of intrapreneurship dimensions and export market capabilities that lead to high current and future export performance.

Conventional wisdom suggests that an intrapreneurial posture enables only discovery-led processes because of its unconventional nature. The study findings show that intrapreneurship also facilitates the development of exploitative processes. In fact, willingness to create new businesses within the existing organization not only help firms

to explore new export market knowledge and identify new market opportunities, but also

helps firms to enhance and refine current export market knowledge. Similar results hold

for innovativeness and self-renewal. Interestingly, SEM results show that anticipating and

acting on future market shifts negatively affect export market exploration. Although

previous studies also find that proactiveness does not relate to export market exploitation

(e.g. Perez-Luño et al., 2011), the inverse relationship between proactivenss and market

exploration is a surprising finding. FsQCA provides further insights here and reveals that

proactiveness can indeed serve as both a driver and deterrent of export market

exploration, depending on the additional intrapreneurial "ingredients" that synergistically

occur in the causal recipe. The relationship between proactiveness and export market

exploration is non-linear. Regarding market exploitation, fsQCA suggests that the

presence of proactiveness is a necessary, but insufficient, condition.

Taken together, the findings indicate that intrapreneurship components have

distinct effects on export market exploitation and exploration, as well as on export market

effectiveness and anticipated export performance, which lends support to this study's

examination of intrapreneurship at the level of individual dimensions rather than at an

aggregate level. The results show that different combinations of intrapreneurship

dimensions lay the foundation for different types of export market learning capabilities.

Additionally, different combinations of export market exploitative and explorative

capabilities have different implications in terms of current and anticipated export

performance. These findings can provide valuable guidance to export managers on how

to allocate and balance resources between market exploitation and exploration activities

based on firm objectives. Business practitioners should try to manage both activities in order to keep performing well in the present without jeopardizing the future.

In the light of the entire discussion and contrary to correlational techniques, fsQCA suggests that the relationships among new business venturing, innovativeness, self-renewal, proactivenes, market exploitation, market exploration, market effectiveness and anticipated performance are not always linear-symmetric and researchers should avoid considering them in isolation.

6. Limitations and future research

Although this study provides helpful theoretical and managerial insights some limitations exist. First, the study takes place in the context of a specific type of firms, export manufacturers, which impedes the generalization of the results beyond this context. Replication of this research in other settings would test the external validity of the findings. Second, the cross-sectional research design employed here limits the ability of this study to make causal inferences. Future studies can collect longitudinal data to assess more accurately the effects of market exploitation and exploration on performance. Third, this study focuses on a single domain of capabilities. Following recent calls for investigating the role of capabilities in multiple domains, future research could incorporate additional domains such as marketing or technology. Overall, this study hopes to serve as a basis for a better understanding of the influence of intrapreneurship and export market exploitative and explorative capabilities on export performance. Further theoretical and empirical research along these lines should follow.

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Table 1. Structural model results.

Link	Standardized loading (t-value)
New business venturing → Export market exploitation	0.18 (2.06)**
New business venturing → Export market exploration	0.33 (3.58)**
New business venturing → Export market effectiveness	0.11 (1.03)
New business venturing → Future export performance	0.14 (1.28)
Innovativeness → Export market exploitation	0.24 (2.61)**
Innovativeness → Export market exploration	0.25 (2.78)**
Innovativeness → Export market effectiveness	-0.03 (-0.25)
Innovativeness → Future export performance	0.04 (0.34)
Self-renewal → Export market exploitation	0.33 (3.71)**
Self-renewal → Export market exploration	0.28 (3.19)**
Self-renewal → Export market effectiveness	-0.02 (-0.15)
Self-renewal → Future export performance	-0.11 (-1.10)
Proactiveness → Export market exploitation	0.03 (0.42)
Proactiveness → Export market exploration	-0.15 (-1.96)*
Proactiveness → Export market effectiveness	0.03 (0.31)
Proactiveness → Future export performance	-0.02 (-0.20)
Export market exploitation → Export market effectiveness	0.41 (3.83)**
Export market exploitation → Future export performance	0.16 (1.54)
Export market exploration → Export market effectiveness	-0.03 (-0.34)
Export market exploration → Future export performance	0.19 (1.87)*

$*p < 0.05$.

$**p < 0.01$.

Table 2. Solutions and pathways for the outcome conditions.

Complex Solution	Raw coverage	Unique coverage	Consistency
Export market exploitation			
Model: f_exploit=f(f_nbv,f_innov,f_selfren,f_proact)			
f_nbv*f_selfren*f_proact	0.588919	0.588919	0.861044
solution coverage: 0.588919; solution consistency: 0.861044			
frequency cutoff: 3.000000; consistency cutoff: 0.881467			
Export market exploration			
Model: f_explor=f(f_nbv,f_innov,f_selfren,f_proact)			
f_nbv*f_innov*f_selfren*~f_proact	0.395721	0.103073	0.894339
f_nbv*~f_innov*f_selfren*f_proact	0.370829	0.078180	0.899094
solution coverage: 0.473901; solution consistency: 0.881111			
frequency cutoff: 3.000000; consistency cutoff: 0.894339			
Export market effectiveness			
Model: f_effectiv=f(f_nbv,f_innov,f_selfren,f_proact,f_exploit,f_explor)			
~f_innov*f_selfren*f_proact*f_explor	0.348862	0.071266	0.905148
~f_innov*~f_selfren*f_proact*f_exploit*~f_explor	0.294097	0.003770	0.922167
~f_nbv*~f_innov*~f_selfren*f_proact*f_exploit	0.281935	0.001494	0.920148
f_nbv*f_innov*~f_selfren*f_proact*f_exploit	0.299431	0.040896	0.921629
solution coverage: 0.431864; solution consistency: 0.893729			
frequency cutoff: 1.000000; consistency cutoff: 0.920140			
Future export performance			
Model: f_futperf=f(f_nbv,f_innov,f_selfren,f_proact,f_exploit,f_explor)			
f_nbv*f_innov*~f_selfren*~f_proact*f_exploit	0.295379	0.018470	0.920958
f_nbv*~f_selfren*~f_proact*f_exploit*f_explor	0.300014	0.023106	0.912737
~f_nbv*f_innov*~f_proact*f_exploit*f_explor	0.293568	0.057946	0.922394
f_nbv*f_innov*~f_selfren*f_exploit*f_explor	0.318847	0.041938	0.922078
solution coverage: 0.418369; solution consistency: 0.897591			
frequency cutoff: 1.000000; consistency cutoff: 0.920643			

Table 3

Causal recipes for high membership scores in the outcome conditions.*

Antecedent condition	Export market exploitation		Export market exploration			Export market effectiveness					Future export performance				
	1st	Conclusion	1st	2nd	Conclusion	1st	2nd	3rd	4th	Conclusion	1st	2nd	3rd	4th	Conclusion
New business venturing	●	⬤	●	●	⬤			○	●	Ø	●	●	○	●	Ø
Innovativeness		Ø	●	○	Ø	○	○	○	●	Ø	●		●	●	Ø
Self-renewal	●	⬤	●	●	⬤	●	○	○	○	Ø	○	○		○	Ø
Proactiveness	●	⬤	○	●	Ø	●	●	●	●	⬤	○	○	○		Ø
Export market exploitation						●	●	●		Ø	●	●	●	●	⬤
Export market exploration						●	○			Ø	●	●	●		Ø

*Black circles indicate high presence of a condition, and white circles indicate low presence (i.e., absence) of a condition. Large black (white) circles indicate a core-necessary condition of presence (absence). "Ø" indicates a peripheral (not necessary) condition. Blank spaces in a pathway indicate "don't care".

Fig. 1

Research model.

Intrapreneurship   **Capabilities**   **Performance**

| New business venturing |
| Innovativeness |
| Self-renewal |
| Proactivenss |

| Export market exploitation |
| Export market exploration |

| Export market effectiveness |
| Future export performance |