



ELSEVIER

Contents lists available at ScienceDirect

International Business Review

journal homepage: www.elsevier.com/locate/ibusrev



Breakthrough innovation in international business: The impact of tech-innovation and market-innovation on performance[☆]

Graça Miranda Silva, Assistant Professor^{a,*},
Chris Styles, Professor of Marketing and Acting Senior Deputy Dean at the Australian School of Business at UNSW^b,
Luis Filipe Lages, Director of the Innovation & Value Creation Center (IVCC), Professor at Nova SBE^{c,1}

^a Department of Management, ISEG-Lisbon School of Economics & Management, University of Lisbon, Rua do Quelhas, no. 6, 1200-781 Lisboa, Portugal

^b UNSW Business School, UNSW, Australia

^c Innovation & Value Creation Center (IVCC), Nova School of Business and Economics, Lisbon, Portugal

ARTICLE INFO

Article history:

Received 9 December 2015
Received in revised form 31 August 2016
Accepted 10 October 2016
Available online xxx

Keywords:

Tech-innovation
Market-innovation
Export performance
Exporting
Value creation

ABSTRACT

The literature suggests that the greater the perceived novelty of a firm's products and markets, the greater the potential value to the user (Lepak et al., 2007). In this study we analyze the extent to which breakthrough innovation (both tech-innovation and market-innovation) has a positive impact on both economic and strategic export performance. Tech-innovation incorporates technological developments to improve customer benefits versus existing alternatives in the market. Our findings reveal that tech-innovation has a positive impact on the economic and strategic export performance of firms. This relationship becomes stronger when more human resources are available and the exporter becomes more oriented toward the importer. In less competitive markets, the positive relationship between tech-innovation and both types of export performance becomes even stronger.

Market-innovation occurs when the product concept or benefits depart from serving existing or conventional markets. Market-innovation was found to be negatively associated with strategic export performance, as it requires major learning effort by importers. This suggests that to create value, exporters need to develop solutions jointly with importers. Overall, these findings suggest that value creation in terms of both tech-innovation and market-innovation needs to involve importers to achieve expectations, thereby leading to improvement in a firm's short-term and long-term export performance.

© 2016 Elsevier Ltd. All rights reserved.

1. Introduction

Schumpeter (1934) pioneered sources of value creation through innovation, such as the introduction of new technologies and the creation of new markets. However, eight decades after his seminal work, this area tends to be more conceptual rather than empirical (e.g., Ghemawat, 2007). Nonetheless, innovation is critical for

creating competitive advantage in international markets to allow firms to benefit from economies of scale (Fernández-Mesa & Alegre, 2015), overcoming the size constraint of domestic markets (Kyläheiko, Jantunen, Puumalainen, Saarenketo, & Tuppurä, 2011). Within the international business domain, the literature on exporting has advanced substantially over the past five decades (Leonidou, Katsikeas, & Coudounaris, 2010). Research on exporting continues to be vital as exporting is often the first step in a firm's internationalization process. Specifically, the relationship between innovation and export performance is a topic that requires further research (Love, Roper, & Zhou, 2016). Amit and Zott (2001, p. 497) argue that according to Schumpeter's theory, "innovation is the source of value creation". As such, an exporter's performance depends on the value created by its innovations, which in turn depends on the value recognized by importers, who are willing to

[☆] The authors thank John Huffstot for comments on earlier versions of the manuscript. The authors gratefully acknowledge financial support from FCT-Fundação para a Ciência e Tecnologia (Portugal), national funding through research grant (UID/SOC/04521/2013), ADVANCE/CSG, and Nova Forum.

* Corresponding author.

E-mail addresses: gracamsilva@iseg.ulisboa.pt (G.M. Silva), c.styles@unsw.edu.au (C. Styles), lflages@novasbe.pt (L.F. Lages).

¹ www.lflages.com.

exchange a monetary amount for the value created (Lepak, Smith, & Taylor, 2007).

There are two types of breakthrough innovation: tech-innovation, which is based on major advances in existing technology and replacement of existing alternatives, and market-innovation, which addresses new emerging markets (Benner & Tushman, 2003; O'Connor & Rice, 2013; Zhou, Yim, & Tse, 2005). Although exporting studies often find a positive relationship between innovation and performance (e.g., Hortinha, Lages, & Lages, 2011; Hughes, Martin, Morgan, & Robson, 2010; Lages, Silva, & Styles, 2009; Love et al., 2016; Pla-Barber & Alegre, 2007), there are no empirical studies that have separated and analyzed breakthrough tech-innovations and market-innovations in the export context. This is, to our knowledge, the first study to do so. Moreover, we identify how these two types of breakthrough innovations influence export performance under different contingent conditions.

In contrast to incremental innovations, breakthrough innovations have the potential to create new markets as well as shape the preferences and behaviors of consumers, thereby leading to competitive advantage and profitable positions (Hamel & Prahalad, 1994; Zhou et al., 2005). Although researchers and business leaders agree that breakthrough innovations are critical to both renewal and survival in turbulent environments and for a company's long-term growth (O'Connor & Rice, 2013; Zhou et al., 2005), companies tend to focus on incremental innovation, which is short-term and less risky (O'Connor & Rice, 2013).

This paper makes two major contributions to the literature. The first is in determining the effect of tech-innovations and market-innovations on export performance, consistent with the call from Sorescu, Chandy, and Prabhu (2003) to better understand the effect of different types of breakthrough innovations on performance. To do so, we draw on the resource-based view (RBV), which postulates that "the services rendered by the firm's unique bundle of resources and capabilities may lead to value creation" (Amit & Zott, 2001; p. 497). These resources and capabilities are inelastic in supply (Ray, Barney, & Muhanna, 2004).

The second contribution is to understand if and how breakthrough tech-innovations and market-innovations influence export performance under different contingent conditions. For an exporter's value creation activities to endure over the long term, it is critical that the monetary amount exchanged exceeds the costs of creating the value, and that the value created by the exporter is superior to the closest alternative (Lepak et al., 2007). Drawing on the RBV, we investigate how market-oriented capabilities, export-related resources, and competitive intensity enhance or decrease the impact of both tech-innovations and market-innovations on export performance.

In the following section, we present the theoretical foundations and our conceptual framework. We then discuss the empirical study and present the results. The article concludes with a discussion of the results and implications for both theory and practice.

2. Conceptual framework and hypotheses

Firms are likely to use a combination of resources and capabilities in the pursuit of a sustainable competitive advantage (Makadok, 2001). In line with dynamic capabilities theory, we separate resources from capabilities in this study. While resources are human, physical, and financial (commodities that can be traded), capabilities are related to the firm's capacity to deploy those resources. A capability is an organizationally embedded non-transferable firm-specific resource, the purpose of which is to improve the productivity of other resources of the firm (Makadok, 2001). Capabilities are thus not only valuable and rare, but also

socially complex, making them inimitable. They can generate a competitive advantage and thereby an above-normal rate of return (Wernerfelt, 1984). An extension of the concept of capability is the notion of a dynamic capability, which is "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece, Pisano, & Shuen, 1997; p. 516). Of theoretical interest in this study is the relationship between breakthrough innovations and export performance, and the contingencies (marketing capabilities and export-related resources) and external conditions (competitive intensity) that enhance this relationship.

Market-oriented capabilities consist of three components: customer orientation, competitor orientation, and interfunctional coordination (cf. Narver & Slater, 1990). We treat the three components of market orientation separately because earlier studies found mixed results regarding the relationship between each component of market orientation and innovation and/or performance (e.g., De Luca, Verona, & Vicari, 2010; Im & Workman, 2004; Ozkaya, Droge, Hult, Calantone, & Ozkaya, 2015; Wong & Tong, 2012). Most studies have seen market orientation as an antecedent of innovation and/or performance (e.g., De Luca et al., 2010; Kim, Im, & Slater, 2013; Zhou et al., 2005). However, other researchers argue for a focus on market orientation as a moderator variable in studies of firm performance (Deshpandé & Farley, 2004). Although more recent studies in both the domestic (Cheng & Huizingh, 2014; Wong & Tong, 2012) and foreign contexts (Navarro-García, Arenas-Gaitán, & Rondán-Cataluña, 2014) examine the moderator role of market orientation, researchers claim that there is a lack of empirical evidence on how market orientation moderates the effect of product innovation on performance (Story, Boso, & Cadogan, 2015). Regarding export-related resources, we analyze the role of experiential, scale, financial, and physical resources (cf. Morgan, Kaleka, & Katsikeas, 2004). Finally, we analyze the moderating effect of competitive intensity on the relationship between tech-innovation and market-innovation and export performance.

2.1. Breakthrough innovation and export performance

The need for innovation to achieve and sustain competitive advantage has long been recognized in the literature (Day & Wensley, 1988; Hunt & Morgan, 1995). Innovation is a mechanism by which organizations can draw upon assets and capabilities and transition these into performance outcomes (Barney, 1991; Reed & DeFillippi, 1990). The process of innovation involves generating and/or accepting new ideas, processes, products, or services (García & Calantone, 2002; Hurley & Hult, 1998).

Zhou et al. (2005) identify two types of breakthrough innovations. The first, labelled tech-innovation, is based on the extent of technological advancement, which involves incorporation of radically new technological knowledge, high-quality technical innovations, and new and advanced technologies replacing inferior alternatives, any or all of which help to increase value (Ulaga & Eggert, 2006; Zeithaml, 1988; Zhou et al., 2005). The second type, labelled market-innovation, is a departure from the existing market segment and serves new customers in new markets (Benner & Tushman, 2003). This departure from existing segments and customers explains why the product requires a major learning effort on behalf of buyers in the challenge to understand or evaluate the product's full benefits (Zhou et al., 2005).

In an export context, studies have consistently found a positive link between innovation and export performance (e.g., Fernández-Mesa & Alegre, 2015; Hughes et al., 2010; Lages, Silva, & Styles, 2009; Lages, Silva, Styles, & Pereira, 2009; Pla-Barber & Alegre, 2007). To our knowledge, no export studies have analyzed the

impact of breakthrough innovation on export performance. Nevertheless, earlier research in a domestic context reports a significant and positive association between perceived performance and both tech-innovation and market-innovation (Zhou et al., 2005). More recently, a cross-country study found a significant positive direct effect between market-innovation and firm performance (Ozkaya et al., 2015). This leads us to our foundation hypotheses:

H₁. Tech-innovation is positively associated with a) economic export performance and b) strategic export performance.

H₂. Market-innovation is positively associated with a) economic export performance and b) strategic export performance.

2.2. Moderator hypotheses

A critical question with key managerial and practical implications is: under what conditions can the relationship between tech-innovation or market-innovation and firm performance be maximized? More specifically, which capabilities, resources, and external conditions enhance the impact of breakthrough innovation on performance?

In this study we investigate three possible moderating effects of the relationships between innovation and export performance: export-related resources, market orientation, and the competitive environment. These three dimensions have traditionally been treated as *antecedents* of capabilities, strategy, and export performance itself (Murray, Gao, & Kotabe, 2011; Zhou et al., 2005). However, we argue that the impact of these variables may be more complex. Specifically, we draw upon the RBV notion that it is the *combination* of resources and capabilities that creates international competitiveness and, therefore, superior performance (Hult & Ketchen, 2001; Teece et al., 1997). Our goal is, thus, to better understand if these variables play an antecedent or moderating role in the breakthrough innovation-export performance relationship.

2.2.1. Export-related resources

Exporters with more experiential, scale, financial, and physical resources are in a better position than less-equipped competitors in the international market. This has been confirmed by several authors who demonstrated that resources in an exporting context are complex to analyze and often play a moderating role (e.g., Chi & Sun, 2013; Moen & Servais, 2002; Ngo, Janssen, Leonidou, & Christodoulide, 2016). We expect that for a tech-innovation or market-innovation to have an effect on export performance, it is necessary that export resources are available to bring those innovations to the market. With these resources, firms might, for example, ensure quality, promotion in the export market, and the appropriate scale and scope required for an international business. The fewer of these resources available to the exporter, the less the firm will be able to realize the value of its tech-innovations and market-innovations. Thus, we propose the following hypotheses:

H₃. Tech-innovation will have a stronger impact on (a) economic performance and (b) strategic performance under conditions of high availability of resources.

H₄. Market-innovation will have a stronger impact on (a) economic performance and (b) strategic performance under conditions of high availability of resources.

In order to test H₃ and H₄, we will use the resources traditionally mentioned in an exporting context. Morgan et al. (2004) identified four sets of resources relevant to export performance. The first is

experiential resources, building on numerous studies that have shown that export experience plays a critical role in exporting (e.g., Cadogan, Diamantopoulos, & Siguaw, 2002; Styles & Ambler, 2000; Tsinopoulos, Lages, & Sousa, 2014). The second is scale resources, which includes number of employees and human resources allocated to export operations. The third is financial resources devoted to export operations and a specific export venture. Fourth is the use of physical resources, such as the use of modern technology equipment, preferential access to valuable sources of supply, and production capacity availability (Hall, 1993; Kaleka, 2002).

2.2.2. Market orientation

Capabilities under the RBV are organizationally embedded and socially complex routines and processes that are inimitable, rare, and valuable. They have the potential to create value, sustainable competitive advantage, and superior performance. Market orientation (i.e., customer orientation, competitor orientation, and interfunctional coordination) is the embodiment of the core marketing capability in that it consists of those actions and routines that monitor, disseminate, interpret, and act upon customer and competitor information (Narver & Slater, 1990).

Market orientation has received considerable attention in both domestic (see Kirca, Jayachandran, & Bearden, 2005; Story et al., 2015) and foreign markets (e.g., Hortinha et al., 2011; Navarro-García et al., 2014).

A key debate has been around whether market orientation is essentially a reactive concept that impedes innovation, or whether it enhances it. Some studies (Grewal & Tansuhaj, 2001) have found market orientation to have a more negative impact on performance, with the suggestion that it stifles innovation by reacting only to current customer needs. Slater and Narver (1999), however, include both current (expressed) as well as future (latent) needs in their conceptualization, making it consistent with continuous tech-innovation and market-innovation.

Several studies have found that market orientation plays a moderating role between strategy and performance (e.g., Hsieh, Tsai, & Wang, 2008; Menguc & Auh, 2008; Tantong et al., 2010), as this capability allows exporters to be dynamic, proactive, and able to respond to constant market changes in the export market environment (Navarro-García et al., 2014). Hult and Ketchen (2001) call attention to the fact that it is not market orientation on its own that drives performance, but market orientation in combination with other capabilities, such as innovation. For example, selling new technology requires interfunctional coordination to solve technical and market issues and achieve speed (Im & Workman, 2004; Zahra, Nash, & Brickford, 1995). As such, we draw from the dynamic capability framework, which considers combinations and conditions under which innovation capabilities can be enhanced. The preceding discussion positions market orientation as a positive influence on performance, although market orientation on its own does not lead to performance. Thus, we argue that the influence of market orientation on export performance exists when combined with other activities and capabilities. This is in line with the work of Cheng and Huizingh (2014), who found that market orientation enhances the relationship between open innovation and financial performance. Similarly, another recent study found that market orientation helps firms leverage their product innovativeness (Story et al., 2015). Thus, the following hypotheses are proposed:

H₅. Tech-innovation will have a stronger impact on (a) economic performance and (b) strategic performance under conditions of high availability of marketing capabilities.

H₆. Market-innovation will have a stronger impact on (a) economic performance and (b) strategic performance under conditions of high availability of marketing capabilities.

2.2.3. *Competitive intensity*

Competitive intensity is defined as “the behaviors, resources and ability of competitors to differentiate” (Jaworski & Kohli, 1993; p. 60). The RBV paradigm must include the interaction between resources and the competitive environment to more fully understand competitive dynamics (Barney, 2001). Competitors’ willingness and ability to imitate or make use of substitute resources creates greater competitive intensity and erodes positional advantage. As a result, firm performance is driven not only by the internal factor of specific resources available and capabilities developed, and the external factor of the market in which the firm is operating (Chmielewski & Paladino, 2007), but also by the interaction of the two factors. In the case of innovation, we would expect that the less competitive the market, the more value will be created by a firm’s innovative activity. When the export market is less competitive, there is less pressure for innovation because standardization and routinization are enough to lead to improved performance (Cherrington, Bischoff, Dyer, Stephan, & Stewart, 2001; Chi & Sun, 2013). On the other hand, in highly competitive markets, importers have more freedom to choose and change their exporters (Chan, He, Chan, & Wang, 2012; Zhao & Cavusgil, 2006), whereas lower competitive intensity would suggest the opposite. Thus, we hypothesize:

H₇. Tech-innovation will have a stronger impact on (a) economic performance and (b) strategic performance under conditions of low competitive intensity.

H₈. Market-innovation will have a stronger impact on (a) economic performance and (b) strategic performance under conditions of low competitive intensity.

All hypotheses are summarized in Fig. 1.

3. Methodology

3.1. *Research setting and data collection*

This study uses primary data collected from Portuguese manufacturing exporting firms. In 2014, Portugal exported \$63.1B, making it the 50th largest exporter in the world

(MIT, 2016). The exporting activity is essential for a country’s economic health due to economies of scale, possibilities for specialization, and access to technology.

In line with earlier research (e.g., Hughes et al., 2010; Lages, Jap, & Griffith, 2008; Lages, Abrantes, & Lages, 2008; Styles, Ahmed, & Patterson, 2008), the unit of analysis is an export venture, i.e., a single product, or product line or group of products, exported to an importer in a foreign market. To ensure enough variance in export venture performance, the study asked half of the sample (53.6%) to report on their most successful export venture, and the remainder to respond regarding export ventures that performed less well (Morgan et al., 2004).

Before conducting the main study, we used exploratory research to refine all the items included in the questionnaire. First, a panel of academic experts with knowledge in international marketing, exporting, operations management, and/or quality management assessed face validity (cf. Hunt, Sparkman, & Wilcox, 1982). Second, a revised version of the questionnaire was discussed through a series of structured face-to-face interviews with export managers, quality managers, and managing directors of exporting firms operating in different industry sectors. The refined items are presented in Appendix A.

A sample of 1332 exporting manufacturing firms was drawn from a Portuguese governmental agency database (ICEP, 2004). Data collection involved three mailings (initial mailing plus two follow-ups). In the initial mailing a cover letter, a questionnaire, and a postage-paid business reply envelope were sent to the managing director of each firm. The questionnaire was divided into two parts: one for the person responsible for export operations (part 1), and one for the person responsible for quality management (part 2). To ensure that the informants were sufficiently knowledgeable to accurately complete the questionnaire (part 1 and part 2), we asked the managing director to pass part 1 of the questionnaire to the person in charge of export operations and part 2 to the person responsible for quality management. The job titles of respondents to part 1 included president, exporting director, managing director, marketing director, supply-chain director, and operations management director. Job titles of respondents to part 2 included quality director, quality manager, industrial director, production director, services director, and coordinator of quality and environment.

The respondents to part 1 had an average of 13 years of experience in the firm and had been in the same business function for nine years. On average, respondents to part 2 had 12 years of experience in their company and had been in the same business

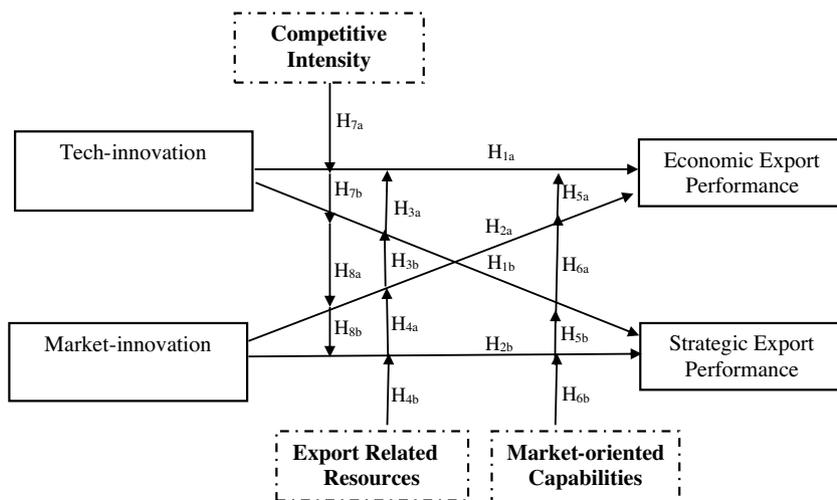


Fig. 1. Summary of Hypotheses.

function for nine years. This indicates that although the titles of the respondents' positions were wide ranging, they all seemed to have considerable knowledge and to be highly involved in exporting and quality management activities. Of the 1332 initial mailings, the postal service returned 53 questionnaires. This reduced the sample size to 1279 companies. Of these, a total of 112 respondents fully completed both part 1 and part 2 of the questionnaires, yielding a raw response rate of 8.8% (112/1279). The profile of firms and export ventures is presented in Table 1.

3.2. Non-response bias

We test for non-response bias comparing the responses of early respondents (the first 75% returning the questionnaires) and late respondents (the remaining 25%) with respect to all items included in the model, the number of years of exporting, number of full-time employees, number of importers, and age of the export venture. No significant differences were found in any of the comparisons, suggesting that response bias was not a significant problem in the study (Armstrong & Overton, 1977).

3.3. Common method bias

The study follows some of the procedural remedies suggested by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) in order to safeguard against common method bias when designing and surveying the questionnaire. Following data collection, common method bias was assessed through several tests. First, Harman's single-factor test was conducted. Thirteen factors were extracted, accounting for 78% of the variance explained, with the first extracted factor accounting for 26%. The study further controlled for the effect of a single unmeasured latent method factor (Podsakoff et al., 2003). To do so, the study creates a common method variance factor that includes the indicators of all the principal constructs and calculated the degree to which each indicator's variance was explained by the common method factor and its related construct (i.e., substantive variance). While the substantive variance was on average 0.0032, the average method-based variance was 0.787 (see Table B1, Appendix B). Second, in

line with concern about the rigor of Harman's one-factor test (Podsakoff et al., 2003) we referred to objective data from firms' annual reports for comparison purposes. We correlated responses for firm size with data from the firms' annual reports. Results show a significant correlation between data (0.540, $p < 0.05$). Following the procedure employed by Lages, Mata, and Griffith (2013) we correlate objective sales value with perceptual export venture sales value performance for all firms in the sample and for a subsample of firms for which the export venture accounts for at least 60% of the total firm sales value. Results (see Table B2, Appendix B) reveal that correlations between the objective sales value and the corresponding perceptual export venture sales value items are positive and significant for the entire sample and for the subsample. Moreover, correlations increase considerably when restricted to firms for which the export venture accounts for at least 60% of the total firm sales value. All results indicate that common method bias is not a critical issue in this study.

3.4. Measures

All the measures used in this study were sourced from the literature and, in some cases, adapted for the current research context. The scales used and their sources are shown in detail in Appendix A.

Economic export performance evaluates the results of the export venture versus existing competitors (Morgan et al., 2004). This is in line with Porter's (1985, p. 38) perspective that "value is measured by total revenue [and] a firm is profitable if the value it commands exceeds the costs involved in creating the product".

Strategic export performance analyses the extent to which the venture contributes to global competitiveness and strengthens the strategic position (Zou, Taylor, & Osland, 1998). Value creation occurs when the firm's resources are combined in ways that allow increasing the firm's productivity (Husted and Allen, 2007), with this being reflected across different performance dimensions.

Breakthrough innovation is analyzed through tech-innovation, which refers to the degree of technological advances, and market-innovation which assesses the difficulty of customers to evaluate and readily accept the product concept (Zhou et al., 2005). Market

Table 1
Firm and export venture characteristics.

Firm characteristics			
Number of full-time employees	%	Number of years in exporting	%
<50 employees	9	3–5 years	5
50–99 employees	36	6–10 years	14
100–499 employees	48	11–20 years	39
500 or more employees	7	>20 years	42
Firm characteristics			
Annual export sales (million €)	%	Number of importers	%
<€1.6M	27	≤5 importers	22
€1.6 M–€46 M.	67	6–10 importers	13
>€46M	6	11–20 importers	16
		>20 importers	49
Export venture characteristics			
Export venture markets	%	Years of operation of the export venture reported on	%
EU countries		≤5 years	31
Spain	21	6–10 years	27
France	19	11–20 years	34
United Kingdom	13	>20 years	8
Germany	10		
Netherlands	5		
Other countries	12		
Non-EU countries	20		

orientation includes three components: customer orientation, competitor orientation, and interfunctional coordination (Narver & Slater, 1990). Customer orientation refers to the understanding and satisfaction of customers' needs, and disseminating this information within the firm (Ahire, Golhar, & Waller, 1996; Narver & Slater 1990). Competitor orientation involves generating information about current and future competitors and disseminating and using it within the firm (Narver & Slater, 1990). Interfunctional coordination is defined as the degree to which the functional units in the firm interact, communicate, and coordinate with one another to collect and use market information (Narver & Slater, 1990).

Export-related resources include four types of resources considered by Morgan et al. (2004): experiential resources, scale resources, financial resources, and physical resources. Competitive intensity is defined as the degree of competition that a firm faces within its export market (Jaworski & Kohli, 1993; Zhou et al., 2005). Earlier research (e.g., Lages, Silva, & Styles, 2009; Lages, Silva, Styles, & Pereira, 2009; Zhou et al., 2005) suggests that a firm's performance may be influenced by the size of the firm. Accordingly, we controlled for firm size by taking into account the number of full-time employees of individual firms in our sample.

4. Analysis and results

To test our models we use partial least squares structural equation modeling (PLS-SEM) in smartPLS 2.0 (Ringle, Wende, & Will, 2005). Advocates of PLS-SEM argue that PLS has become a good alternative to the covariance-based technique for estimating theoretically justified cause-effect relationship models, especially when sample size is small (Hair, Sarstedt, Ringle, & Mena, 2012). Moreover, PLS-SEM is more appropriate for models that contain complex relationships such as moderating effects (Chin, Marcolin, & Newsted, 2003).

4.1. Assessment of the measurement model

To evaluate the measurement model we examined convergent validity and internal consistency reliability of the scales by means of average variance extracted (AVE) and composite reliabilities (CR). According to Bagozzi and Yi (1988), and Fornell and Larcker (1981), acceptable values of composite reliability are 0.7 or above, and 0.5 or above for AVE. As presented in the Appendix A, all scales exceed the recommended values. Thus, it appears that measured constructs have good reliability and convergent validity.

Table 2
Means, Standard Deviation, and Correlation between Constructs.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Tech-innovation	0.886												
2. Market-innovation	0.220*	0.813											
3. Strategic Performance	0.302**	-0.163	0.894										
4. Economic Performance	0.342**	0.048	0.556**	0.932									
5. Competitive intensity	0.033	0.114	0.072	-0.039	0.860								
6. Customer orientation	0.158	-0.052	0.149	0.140	0.029	0.771							
7. Competitor orientation	0.318**	0.029	0.310**	0.218*	0.124	0.507**	0.746						
8. Interfunctional coordination	0.321**	-0.040	0.386**	0.337**	0.244**	0.346**	0.481**	0.805					
9. Experiential resources	0.372**	0.140	0.347**	0.504**	0.112	0.277**	0.363**	0.281**	0.917				
10. Scale resources	0.131	0.017	0.171	0.201	0.000	0.184	0.188*	0.150	0.380**	0.935			
11. Financial resources	0.248**	0.052	0.225*	0.373**	-0.155	0.198*	0.211*	0.107	0.492**	0.521**	0.960		
12. Physical resources	0.324**	0.164	0.245**	0.365**	-0.098	0.144	0.271**	0.210*	0.423**	0.434**	0.553**	0.871	
13. Firm Size	-0.029	0.055	0.059	0.132	-0.172	0.132	0.072	0.086	0.060	-0.161	-0.015	-0.080	N.A.
Mean	4.369	2.25	4.820	4.453	5.657	5.922	5.185	5.130	4.849	4.000	4.184	4.515	186.65
Standard deviation	1.390	1.236	1.313	1.207	1.367	.853	.988	1.195	1.042	1.137	1.233	1.046	243.75

The diagonal (in bold) shows the square roots of the AVE. Correlations *significant at p < 0.05; ** p < 0.01 two-tailed test. N.A. = Not applicable.

Discriminant validity determines the extent to which indicators of a given construct differ from indicators of other constructs. The square root of AVE in each latent variable should be greater than the correlation values with all other variables (Fornell & Larcker, 1981). The correlation matrix in Table 2 reveals that discriminant validity was thus established for all constructs.

4.2. Model fit

The model fit was assessed as recommended by Hair et al. (2012) with the help of the explained variance of the endogenous latent variables (R²), the effect size (f²), the Stone-Geisser test criterion (Q²), and the sign, magnitude, and significance of the path coefficients. In addition, the "goodness-of-fit" (GoF) criterion proposed by Tenenhaus et al. (2005) was determined.

The main model (see Fig. 2) predicted 13.8% and 18.1% of the variance in economic export performance and strategic export performance, respectively. The values satisfy the minimum of 10% for R² (Falk & Miller, 1992). Using the guidelines for interpretation that Cohen (1988) provides, we found a moderate effect size for tech-innovation (f² = 0.14) and a weak effect size for market-innovation (f² = 0.00) on economic export performance. We found a somewhat strong effect for tech-innovation and a somewhat moderate effect for market-innovation on strategic export performance (f² = 0.17 and 0.10, respectively).

A Stone-Geisser's Q² value greater than zero for any endogenous construct indicates that the predictive relevance of the paths in the model is acceptable (Hair et al., 2012). A blindfolding procedure with an omission distance of 7 was used to compute the cross-validated redundancies (Hair et al., 2012). The cross-validated redundancy values for all endogenous constructs are well above zero (economic performance 0.104, and strategic performance 0.117), supporting the model's predictive relevance. We obtained a GoF value of 0.37, which exceeds the baseline value (0.36) for large effect sizes of R² (Chin, 1998).

In the following section, the sign, magnitude, and significance of the path coefficients with regard to the hypotheses are examined in more detail. The significance of the path coefficients was estimated using a bootstrapping procedure as suggested by Hair et al. (2012) (individual sign changes, 112 cases, 5000 samples).

4.3. Main effects

In the first stage we examined the main hypotheses (H_{1a}, H_{1b}, H_{2a}, H_{2b}) (cf. Carte & Russell, 2003). Fig. 2 shows the PLS-SEM results for the hypothesized main model.

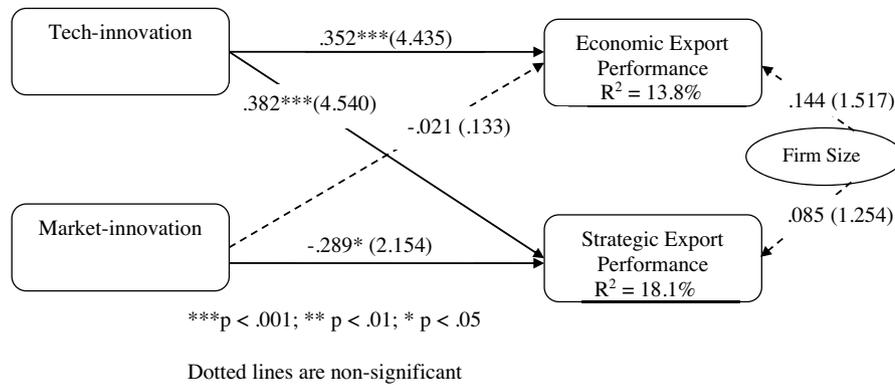


Fig. 2. PLS results for main effect model.

Hypothesis 1 predicts a positive effect of tech-innovation on economic export performance (H_{1a}) and strategic export performance (H_{1b}). The results in Fig. 2 provide support for both H_{1a} (β = 0.352; p < 0.001) and H_{1b} (β = 0.382; p < 0.001). This is consistent with earlier studies (e.g., Paladino, 2007; Zhou et al., 2005; Zou, Fang, & Zhou, 2003). Tech-innovation, which involves new and advanced technologies replacing inferior alternatives, plays an important role in improving customer value. This translates into improved economic performance (e.g. through enhanced sales and profits) and improved strategic position and global competitiveness. Moreover, it is suggested that new product attributes such as newness and uniqueness enhance a firm’s ability to meet customers’ needs and help the firm differentiate its offering from those of competitors (Zou et al., 2003).

Hypothesis 2 postulates that market-innovation has a positive effect on economic export performance (H_{2a}), and strategic export performance (H_{2b}). This hypothesis was not supported. The results provide evidence for a non-significant effect of market-innovation on economic performance (β = -0.021, n.s.) and a significant but negative effect of market-innovation on strategic performance (β = -0.289; p < 0.05). Since market-innovations require a major learning effort and may be difficult for importers to understand, these innovations do not translate into economic or positional advantage. Moreover, the sample in this study is made up primarily of small and medium sized firms with relatively small export ventures (revenue range was €500k– €1.6 m). In small firms the risk, time, and investment required for a disruptive market-innovation to affect performance may be too great. From an RBV

viewpoint, it may be that the resource constraints on smaller firms mean that they are less able to leverage these disruptions.

4.4. Moderating effects

In this study we also examined the moderating effects of export-related resources (Hypotheses H_{3a}, H_{3b}, H_{4a}, and H_{4b}), market-oriented capabilities (Hypotheses H_{5a}, H_{5b}, and H_{6a}, H_{6b}), and competitive intensity (Hypotheses H_{7a}, H_{7b}, H_{8a}, and H_{8b}) between breakthrough innovation and export performance.

The moderator effect of market-oriented capabilities will be examined through the moderating effect of three capabilities: customer orientation, competitor orientation, and interfunctional coordination. In the same vein, the moderator effect of export-related resources will be examined through the moderating effect of four resources: experiential, scale, financial, and physical.

A moderator variable can be classified as an intervening predictor, a homologizer moderator, a quasi-moderator, or a pure moderator (Sharma, Durand, & Gur-Arie, 1981). This study follows the steps suggested by Baron and Kenny (1986), in order to capture the various types of moderators. The first step is to analyze the correlations between each hypothesized moderator, and both dependent (economic and strategic export performance) and independent variables (tech-innovation and market-innovation). Table 2 shows that only three (competitive intensity, scale resources, and customer orientation) of the eight moderators are not significantly correlated with either the independent (tech-innovation and market-innovation) or dependent (strategic

Table 3
PLS path analysis results for the interaction effects.

	Economic Performance	Strategic Performance
Exogenous variables		
Tech-innovation	.226**	.349***
Market-innovation	0.078	-0.195
Competitive intensity	0.006	0.050
Customer orientation	0.074	0.065
Scale resources	0.101	0.061
Interaction effects		
Competitive intensity × Tech-innovation	0.008	-0.233
Competitive intensity × Market-innovation	0.254	-0.112
Customer orientation × Tech-innovation	0.157	0.149
Customer orientation × Market-innovation	-0.091	-0.142
Scale resources × Tech-innovation	-0.108	-0.125
Scale resources × Market-innovation	-0.117	-0.214
Control paths		
Firm size	0.078	0.178
R ²	36.0%	33.3%

performance, economic performance) variables. This means that the other five variables (experiential resources, financial resources, physical resources, competitor orientation, and interfunctional coordination) could not be tested as moderators and are therefore excluded from the moderating analysis (Sharma et al., 1981). Based on these results, the moderating effect of export-related resources will be evaluated only through scale resources. In the same vein, the moderating effect of market-oriented capabilities will be evaluated only through customer orientation.

The second step is to determine whether a significant interaction effect exists between the hypothesized moderator and the independent variable. To test the interaction effects, we should include the hypothesized moderators and the interaction terms in addition to the main model. As suggested by Chin et al. (2003), we mean-centered the indicators prior to multiplying them in order to reduce multicollinearity. The moderation model is presented in Table 3. Results show that none of the interaction terms are significant. Thus, the moderator Hypotheses (H_{3a} , H_{3b} , H_{4a} , H_{4b} , H_{5a} , H_{5b} , H_{6a} , H_{6b} , H_{7a} , H_{7b} , H_{8a} , and H_{8b}) are not supported in the sense of competitive intensity, customer orientation, and scale resources being pure moderators (Sharma et al., 1981).

The third step is to conduct a multi-group analysis to test the moderating hypotheses on the grounds of competitive intensity, customer orientation, and scale resources being “homologizer moderators” (Sharma et al., 1981). Since three moderator variables are involved, three subgroup analyses were conducted. The median split sample approach was employed to split the total sample of 112 cases into “high” and “low” groups for the moderator variables. In order to show the contrast between high and low subgroups, we exclude the middle 10% of cases (cf. Sharma & Patterson, 1999). We then compared coefficients for each group to test for significant differences. This comparison was carried out using a *t* test as described by Keil et al. (2000). Table 4 provides an overview of the results and Table 5 summarizes the results for the moderating hypotheses tested.

Hypothesis H_3 predicted that tech-innovation will have a stronger effect on economic (H_{3a}) and strategic (H_{3b}) performance under conditions of high availability of export-related resources. Based on previous results, the moderator effect of export-related resources will be tested only through scale resources. Table 4 shows that the effect of tech-innovation on economic export performance remains significant in both subgroups. This effect is stronger in the high scale resources group ($\beta = 0.448$; $p < 0.01$) than in the low scale resources group ($\beta = 0.308$; $p < 0.05$). There is a significant difference between these two coefficients ($t = 5.144$; $p < 0.001$). The effect of tech-innovation on strategic export performance remains significant in the high scale resources group ($\beta = 0.267$; $p < 0.05$), but it is not significant in the low scale resources group ($\beta = 0.197$; n.s.). This means that tech-innovation may not be effective in improving strategic performance under conditions of low availability of scale resources. The difference between high and low coefficients is also

statistically significant ($t = 3.228$; $p < 0.001$) for this relationship. As such, we can conclude that H_3 was supported on the grounds of scale export-related resources being a “homologizer moderator”. The results obtained for H_3 support the notion of RBV, which is the combination of resources and capabilities that creates international competitiveness and, therefore, superior performance (Hult & Ketchen, 2001; Teece et al., 1997).

Hypothesis H_4 predicted that market-innovation will have a stronger impact on economic (H_{4a}) and strategic (H_{4b}) export performance under conditions of high availability of export-related resources. Results in Table 4 show that the effect of market-innovation on economic performance is non-significant under conditions of low availability of scale resources ($\beta = 0.098$; n.s.), while it is negative under conditions of high availability of scale resources ($\beta = -0.258$; $p < 0.05$). There is a significant difference between these two coefficients ($t = -11.231$; $p < 0.001$). Similarly, the effect of market-innovation on strategic performance is negative ($\beta = -0.436$; $p < 0.01$) under conditions of high availability of scale resources, but it is not significant under conditions of low availability of scale resources ($\beta = -0.143$; n.s.). The difference between these two coefficients is also significant ($t = -10.061$; $p < 0.001$). Thus, hypothesis H_4 was not supported. Interestingly, however, we can conclude that scale resources is a “homologizer moderator” of the relationship between market-innovation and export performance (economic and strategic performance). Thus, there is a still a “combination” effect operating.

Hypothesis H_5 predicted that tech-innovation will have a stronger impact on economic (H_{5a}) and strategic (H_{5b}) export performance under conditions of high availability of marketing capabilities. As previously discussed, this hypothesis was tested only for customer orientation capability. Hypothesis H_5 was supported. While the effect of tech-innovation on economic export performance is positive and significant for the high customer orientation subgroup ($\beta = 0.374$; $p < 0.001$), it is not significant for the low customer orientation subgroup ($\beta = 0.265$; n.s.). Similarly, the effect of tech-innovation on strategic export performance is positive and significant for the high customer orientation subgroup ($\beta = 0.369$; $p < 0.001$), but is not significant for the low customer orientation subgroup ($\beta = 0.256$; n.s.). There are significant differences between high and low coefficients for both economic ($t = 4.957$; $p < 0.001$) and strategic ($t = 4.993$; $p < 0.001$) export performance. These results suggest that customer orientation is a “homologizer moderator” of the relationship between tech-innovation and export performance. This is consistent with the market orientation literature and confirms that tech-innovations produce better performance outcomes when the firm has a strong customer focus. This would likely result from the innovations themselves being driven by customer feedback and needs. Technology innovation in and of itself has a positive impact on performance, but when it is customer-driven the result is to enhance performance. This finding contradicts the long-standing

Table 4
Results of subgroup analysis with scale resources, customer orientation, and competitive intensity as moderators.

Paths	Export-related resources – Scale resources			Marketing capabilities – Customer Orientation			Competitive intensity		
	Beta high	Beta low	<i>t</i> -test ^a	Beta high	Beta low	<i>t</i> -test ^a	Beta high	Beta low	<i>t</i> -test ^a
Tech-innovation → Economic Performance	0.448***	0.308*	5.144***	0.374***	0.265	4.957***	0.163	0.444***	-10.457***
Tech-innovation → Strategic Performance	0.267*	0.197	3.228**	0.369**	0.256	4.993***	0.288*	0.349**	-1.382
Market-innovation → Economic Performance	-0.258*	0.098	-11.231***	0.060	-0.030	1.627	0.185*	-0.161	9.253***
Market-innovation → Strategic Performance	-0.436**	-0.143	-10.061***	-0.148	-0.163	1.566	-0.262*	-0.295*	-0.317
Firm size → Economic Performance	0.074	0.240		-0.033	0.243		0.165	0.191	
Firm size → Strategic Performance	0.176	0.084		0.099	0.041		0.266	-0.005	

*significant at $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ two-tailed test.
^a *t*-test of differences in coefficients between high and low subgroups.

Table 5
Summary of results for moderating effects tested (Hypotheses H3 to H8).

Moderation Hypotheses	Moderator variable tested	Moderator Type	Hypotheses supported/rejected
H _{3b} : Tech-innovation will have stronger impact on economic performance under conditions of high availability of export-related resources	Scale resources	Homologizer	Supported
H _{3b} : Tech-innovation will have stronger impact on strategic performance under conditions of high availability of export-related resources	Scale resources	Homologizer	Supported
H _{4a} : Market-innovation will have stronger impact on economic performance under conditions of high availability of export-related resources	Scale resources	Homologizer	Rejected
H _{4b} : Market-innovation will have stronger impact on strategic performance under conditions of high availability of export-related resources	Scale resources	Homologizer	Rejected
H _{5a} : Tech-innovation will have stronger impact on economic performance under conditions of high availability of marketing capabilities	Customer orientation	Homologizer	Supported
H _{5b} : Tech-innovation will have stronger impact on strategic performance under conditions of high availability of marketing capabilities	Customer orientation	Homologizer	Supported
H _{6a} : Market-innovation will have stronger impact on economic performance under conditions of high availability of marketing capabilities	Customer orientation	Not a moderator	Rejected
H _{6b} : Market-innovation will have stronger impact on strategic performance under conditions of high availability of marketing capabilities	Customer orientation	Not a moderator	Rejected
H _{7a} : Tech-innovation will have stronger impact on economic performance under conditions of low competitive intensity	Competitive intensity	Homologizer	Supported
H _{7b} : Tech-innovation will have stronger impact on strategic performance under conditions of low competitive intensity	Competitive intensity	Not a moderator	Rejected
H _{8a} : Market-innovation will have stronger impact on economic performance under conditions of low competitive intensity	Competitive intensity	Homologizer	Rejected
H _{8b} : Market-innovation will have stronger impact on strategic performance under conditions of low competitive intensity	Competitive intensity	Not a moderator	Rejected

concern that market orientation impedes breakthrough innovation (Gatignon & Xuereb, 1997), instead supporting more recent findings showing that market orientation facilitates tech-innovations (Zhou et al., 2005).

Hypothesis H₆ predicted that market-innovation will have a stronger impact on economic (H_{6a}) and strategic (H_{6b}) export performance under conditions of high availability of marketing capabilities. Similarly to H₅, this hypothesis was tested only for customer orientation capability. Hypothesis H₆ was not supported. The main effect model (see Fig. 2) shows a non-significant relationship between market-innovation and economic export performance. This relationship remains not significant in both high ($\beta = 0.060$; n.s.) and low ($\beta = -0.030$; n.s.) customer orientation groups. For strategic export performance, a negative but non-significant relationship was found for both high ($\beta = -0.148$; n.s.) and low ($\beta = -0.163$; n.s.) customer orientation groups. As such, customer orientation is not a homologizer moderator of the relationship between market-innovation and export performance.

Although somewhat counter intuitive, the explanation may be that because these innovations are disruptive, and not developed for current customers and markets, feedback from current customers about current products has little effect. These results could also be related to the fact that the customer orientation dimensions used are derived more from mainstream customer orientation factors than those applying to emerging customer orientation. A recent longitudinal study that distinguishes between these two types of orientation found that mainstream customer orientation has a positive impact on the introduction of radical product innovation (tech-innovation), but a negative impact on disruptive innovations (market-oriented), while emerging customer orientation has a positive effect on disruptive innovation but a non-significant effect on radical innovations (Govindarajan, Koppalle, & Danneels, 2011). Another possible reason for this result could be that the customer orientation scale adopted in this study reflects a market-driven view, but does not reflect new customer values for emerging markets.

Merely focusing on customers may not guarantee market-innovation, because transforming information about what customers want into relevant knowledge for innovation may require

different sets of competencies (Ozkaya et al., 2015). A customer oriented firm with a focus on serving its best current customers will be less likely to focus on investing sufficiently in pursuing opportunities in emerging markets (Christensen & Bower, 1996; Zhou et al., 2005). Breakthrough innovations that transform existing markets and industries or create new ones are defined as market-innovations (O'Connor & Rice, 2013; p. 210). This type of innovation can be associated with market-driving strategies, since they are defined as firm activities that affect market structure and market behavior (O'Connor & Rice, 2013).

Hypothesis H₇ predicted that tech-innovation will have a stronger impact on economic (H_{7a}) and strategic (H_{7b}) export performance under conditions of low competitive intensity. This was based on the notion that firm performance is driven not only by firstly the specific resources available and capabilities developed, and secondly the attractiveness of the market in which the firm is operating (Chmielewski & Paladino, 2007), but performance is also driven by the interaction of the two. Hypothesis H₇ was partially supported. The relationship between tech-innovation and economic export performance was significantly different in the high and low competitive intensity subgroups, and significantly more positive in the low subgroup ($t = -10.457$; $p < 0.001$). Although the relationship between tech-innovation and strategic export performance is stronger under conditions of low competitive intensity ($\beta = 0.349$; $p < 0.01$) than under conditions of high competitive intensity ($\beta = 0.288$; $p < 0.05$), there is no significant difference between these two coefficients ($t = -1.382$; n.s.). These results indicate that competitive intensity is a “homologizer moderator” of the relationship between tech-innovation and economic export performance, but not in the relationship with strategic export performance. This might be explained by the fact that competitive intensity is a current condition affecting current economic performance, whereas strategic performance is more long-term and not necessarily linked to short-term conditions. Indeed, under the RBV perspective, it could be argued that while competitive intensity is more important for short-term results (as opposed to long-term performance), a firm’s resources and capabilities have more impact in helping to build sustainable competitive advantage.

Hypothesis H_g predicts that market-innovation will have a stronger impact on economic (H_{8a}) and strategic (H_{8b}) export performance under conditions of low competitive intensity. This hypothesis was not supported. The effect of market-innovation on economic export performance was significantly different in the high and low competitive intensity subgroups ($t=9.253$; $p < 0.001$). However, the results obtained contradict the hypothesis postulated. That is, we found that market-innovation has a strong impact on economic performance under conditions of high competitive intensity ($\beta=0.185$; $p < 0.05$) rather than low competitive intensity ($\beta = -0.161$; n.s.). Although the relationship between market-innovation and strategic export performance is less negative under conditions of high ($\beta = -0.262$; $p < 0.05$) rather than low competitive intensity ($\beta = -0.295$; $p < 0.05$), there is no significant difference between these two coefficients ($t = -0.317$; n. s.). That means competitive intensity is a “homologizer moderator” of the relationship between market-innovation and economic export performance, but it is not a moderator of the relationship between market-innovation and strategic export performance. These results are consistent with Zhou et al.'s (2005) study, which found a positive relationship between competitive intensity and market-innovation. A possible explanation is that in highly competitive markets, a possible option for firms to beat competition is to identify a new segment and serve new customers who have different needs (Porter, 1985; Zhou et al., 2005). Thus, firms can develop market-innovations to target both unserved and new markets (Porter, 1985; Zhou et al., 2005). As stated by Zhou et al. (2005, p.54), “competitive intensity facilitates more market-innovations, meaning that firms tend to explore new markets in intense competitive conditions”.

5. Discussion and conclusions

5.1. Theoretical implications

Tech-innovations represent state-of-the-art technological advances (Benner & Tushman, 2003) which use technologies to improve customer benefit over existing products in existing market (Chandy & Tellis, 1998). In an international business context, our research revealed that tech-innovation has a positive impact on both the economic and strategic export performance of firms. This relationship becomes stronger when more human resources are available and if the exporter is more oriented toward the importer. In less competitive markets, since technological players are much weaker, the positive relationship between tech-innovation and both types of export performance becomes even stronger.

Although market-innovations often use simpler new technology, they are perceived as very different because they depart from serving mainstream markets and disrupt existing consumer preferences (Zhou et al., 2005). This might explain why customers may not easily recognize or appreciate the new benefits of a product, and consequently do not adopt these market-innovations (Adner, 2002). This explains why we found that also in an international business context, market-innovation might be negatively associated with strategic export performance. In market-innovation, the product concept and its benefits are difficult to apprehend by the importer, who takes a long time to understand the product. Market-innovation might have only a long-term impact on exporters' performance because importers will have to change their thinking and behavior (Benner & Tushman, 2003). As the critical factors for creating value in international markets are knowledge of new markets/customers, the ability to experiment, and the willingness to learn and adapt, the absence of these might tell us that the majority of our sample is not able to reply fast enough to current market/customer knowledge to drive export success. This supports recent findings

that the value created by a solution cannot be generated by the supplier alone (Macdonald, Kleinaltenkamp, & Wilson, 2016) because customer coproduction can affect the quality and the evaluation of the supplier's offering (Golder, Mitra, & Moorman, 2012). International business research has already demonstrated, from the perspectives of both importers and exporters, that aspects such as the flow of communication (Crespo, Griffith, & Lages, 2014), interaction within the network (Lages, Silva, & Styles, 2009; Lages, Silva, Styles, & Pereira, 2009), commitment (Skarmeas, Katsikeas, & Schlegelmilch, 2002), relationship capabilities (Lages, Silva, & Styles, 2009; Lages, Silva, Styles, & Pereira, 2009) and trust (Katsikeas, Skarmeas, & Bello, 2009) are all critical to improve international performance. The final outcomes will depend on the joint integration process (Macdonald et al., 2016). As such, the export solution should be designed jointly by the exporter and the importer and constantly enhanced by both parties. Moreover, the existence of a clear relationship between stakeholder orientation and firm's performance (e.g., Berman, Wicks, Kotha, & Jones, 1999; Waddock & Graves, 1997) suggests that, in addition to the exporter-importer perspectives, an innovation strategy is expected to consider the input of other stakeholders involved in the export operation.

5.2. Managerial and public policy implications

Our results are important for managers looking for continuous growth, value creation, and competitive advantage in export markets. Our findings reveal that tech-innovation is positively associated with economic and strategic export performance, suggesting that competitive advantage comes from technological advances. This should direct firms' and public policymakers' attention toward the importance of incentives that drive innovation. Another managerial implication has to do with our contingency findings. The greater the orientation toward the importer (i.e. understanding importer needs, monitoring satisfaction and complaints), the stronger the positive relationship between tech-innovation and export performance. Customer focus is important to leverage tech-innovation. It is not enough to be technically effective and able to “invent the better mouse trap”. In order to create value, firms have to be both inwardly proficient (tech-innovation) and externally responsive (customer focus). Moreover, our findings reveal that tech-innovation affects economic performance under conditions of low competitive intensity. The relationship between tech-innovation and export performance is stronger when more human resources are allocated to exporting and the when annual turnover from export activities is higher. Overall, this is aligned with the RBV perspective, which argues that while competitive intensity has an immediate effect, firm's resources and capabilities help to build sustainable long-term performance. This suggests that in order to fully leverage tech-innovation, firms need to ensure that they are committed to exporting and must have the right resources. This should influence the way firms hire the appropriate human resources to drive the export business (against, for example simply appointing an existing manager working in the domestic market) and the quantity of resources they allocate to the export activity. Similarly, public policymakers should develop incentives and programs targeting tech innovators, ensuring that these firms are technologically superior, have an appropriate customer focus, have access to the right training, and allocate appropriate export resources.

Overall, our findings can help managers to create value by better dealing with the market-pull and technology-push paradox (Lages, 2016) and grow via new international markets. Moreover, public policymakers might also develop a number of policy initiatives to reinvigorate local economies by helping to create value in international business, and in this way improve export

performance. Some of these initiatives might include, for example, the provision of advisory services and win–win linkages between exporters and academia, such as the organization of seminars and educational/training programs for exporters.

5.3. Limitations and directions for further research

Future research is recommended to combine multiple sources of data, multiple countries, and explore the possibility of using a longitudinal study. Breakthrough innovations (both tech-innovations and market-innovations) often take time to demonstrate their full effects on performance (Chandy & Tellis, 1998). Future longitudinal research might seek a deeper understanding of breakthrough innovation in exporting markets, comparing the innovations of companies exporting to developed markets with those of companies exporting to developing markets. Further research is also required to understand what factors lead to an exporter creating value-destructing effects, and that make an importer worse off, as well as how exporters can support value creation and succeed in direct interactions with importers and consequently perform better. Finally, in the traditional concept of value creation, consumers are seen as being “outside the firm” (Prahalad & Ramaswamy, 2004). Although today there is agreement that customers should be involved in the joint development of both product and market solutions for value creation (Golder et al., 2012; Gronroos & Voima, 2013; Macdonald et al., 2016), our findings reveal that future research should delve further into this issue in the international business field.

In conclusion, we believe that this paper provides a foundation for further endeavors to advance the innovation field in international business. Overall, there was support for the central thesis of this research: In order to create value in export markets, managers must be able to deal with the market-pull and technology-push paradox and excel in both technological and customer orientations. While breakthrough tech-innovation has a direct impact on export performance, this effect is moderated by key resources and capabilities. This supports the notion that in export markets, combinations of capabilities and resources drive value creation and international competitive advantage.

Appendix A. Scales items and reliabilities

Export performance

Economic performance (AVE = 0.868/CR = 0.952)
(Adapted from Morgan et al., 2004)

Question: How do you evaluate the following export venture results compared with your main competitors in 2005?
(Scale: 1 = “much worse,” and 7 = “much better”)

EP1	Export sales volume.	0.943
EP2	Profitability.	0.937
EP3	Percentage of sales revenue derived from products introduced in this market during the past three years.	0.915

Strategic performance (AVE = 0.780/CR = 0.923)
(Adapted from Zou et al., 1998)

Question: When considering the selected export venture, what is your opinion concerning the following sentences?
(Scale: 1 = “strongly disagree,” and 7 = “strongly agree”)

SP1	This export venture has improved our global competitiveness.	0.849
SP2	This export venture has strengthened our strategic position.	0.938
SP3	This export venture has significantly increased our global market share.	0.893

Tech-innovation (AVE = 0.785/CR = 0.916)
(Adapted from Zhou et al., 2005)

Question: When considering the product of the selected export venture, what is your opinion concerning the following sentences?
(Scale: 1 = “strongly disagree,” and 7 = “strongly agree”)

TBI1	Our product is highly innovative, replacing an inferior alternative.	0.886
TBI2	Our product incorporates a radically new technological knowledge.	0.915
TBI3	High-quality technical innovations were introduced during the development of this product.	0.856
TBI4	Overall, our product is similar to our main competitors' products (R).	*
TBI5	The application of our product is totally different from that of our main competitors' products.	*

Market-innovation (AVE = 0.661/CR = 0.853)
(Adapted from Zhou et al., 2005)

Question: When considering the product of the selected export venture, what is your opinion concerning the following sentences?
(Scale: 1 = “strongly disagree,” and 7 = “strongly agree”)

MBI1	Our product concept is difficult for importers to evaluate or understand.	0.875
MBI2	The use of our product requires a major learning effort by importers.	0.841
MBI3	It takes a long time for importers to understand our product's full benefits.	0.713
MBI4	Our product involves high switching costs for mainstream importers.	*

Market orientation

Question: With regard to your company's situation, to what extent do you agree or not with the following sentences?
(Scale: 1 = “strongly disagree,” and 7 = “strongly agree”)

Customer orientation (AVE = 0.595/CR = 0.811)
(Adapted from Narver & Slater, 1990; Ahire et al., 1996)

CU1	Our strategy for competitive advantage is based on our understanding of customer needs.	0.842
CU2	Manufacturing managers are aware of the results of importer satisfaction surveys.	0.600
CU3	A summary of customer complaints is given to manufacturing managers regularly.	0.852
CU4	We constantly monitor our level of commitment and orientation to serving customers' needs.	*
CU5	Our business objectives are driven primarily by customer satisfaction.	*
CU6	Our business strategies are driven by our beliefs about how we can create greater value for customers.	*
CU7	We measure customer satisfaction systematically and frequently.	*
CU8	We give close attention to after-sales service.	*

Competitor orientation (AVE = 0.557/CR = 0.834)
(Adapted from Narver & Slater, 1990)

CO1	We rapidly respond to competitive actions that threaten us.	0.717
CO2	Our salespeople regularly share information within our organization concerning competitors' strategies.	0.777
CO3	Top management regularly discusses competitors' strengths and strategies.	0.731
CO4	We target customers where we have an opportunity for competitive advantage.	0.757

Interfunctional coordination (AVE = 0.648/CR = 0.846)
(Adapted from Narver & Slater 1990)

IC1	Our top managers of every function regularly visit our current and prospective customers.	0.764
-----	---	-------

IC2	We freely communicate information about our successful and unsuccessful customer experiences across all business functions.	0.774
IC3	Our business units share resources among each other.	0.872
IC4	All of our business functions (e.g., marketing/sales, manufacturing, research and development, etc.) are integrated in serving the needs of our target markets.	*
IC5	All of our business functions and departments are responsive to each other's needs and requests.	*
IC6	We have functional integration in strategy.	*

Competitive intensity (AVE = 0.739/CR = 0.847)

(Adapted from Jaworski & Kohli, 1993)

Question: When considering the export market characteristics of your company, what is your opinion concerning the following sentences?

(Scale: 1 = “strongly disagree,” and 7 = “strongly agree”)

CI1	Competition in our export market is cut-throat.	0.971
CI2	There are many promotion wars in our export market.	0.731
CI3	Price competition is a hallmark of our export market*.	*
CI4	Anything that one competitor can offer others can match easily*.	*
CI5	One hears of a new competitive move almost every day*.	*

Export-related resources

(Adapted from Morgan et al., 2004)

Question: How do you evaluate your company compared with your main competitors in terms of:

(Scale: 1 = “much worse,” and 7 = “much better”)

Experiential (AVE = 0.840/CR = 0.913)

EXP1	Knowledge of export venture market.	0.929
EXP2	Length of firm's export experience.	0.904
EXP3	Number of export ventures in which the firm has been involved.	*
EXP4	Past export performance.	*

Scale (AVE = 0.875/CR = 0.933)

SCL1	Number of full-time employees involved in export activities.	0.964
SCL2	Percentage of employees mainly involved in the export function.	0.905
SCL3	Annual turnover with export activities.	*

Physical (AVE = 0.758/CR = 0.904)

PHY1	Use of modern technology and equipment.	0.912
PHY2	Preferential access to valuable sources of supply.	0.875
PHY3	Production capacity availability.	0.824

Financial (AVE = 0.921/CR = 0.959)

FIN1	Availability of financial resources to be devoted to export activities.	0.966
FIN2	Availability of financial resources to be devoted to the export venture.	0.953

Notes: AVE = variance extracted, and CR = composite reliability. (R) indicates items that were reverse-coded. The values (in bold) next to each item are standardized loadings.* We deleted these items from further analysis because of low factor loading or high cross-loadings.

Appendix B.

See Tables B1 and B2.

Table B1
Common method variance analysis.

Item	Construct loading (CL)	CL ²	Method-Factor Loading (MFL)	MLF ²
TBI1	0.889	0.790	-0.009	0.000
TBI2	0.917	0.841	-0.006	0.000
TBI3	0.851	0.724	0.016	0.000
MBI1	0.767	0.588	-0.043	0.002
MBI2	0.868	0.753	0.061	0.004
MBI3	0.863	0.745	-0.023	0.001
EP1	0.941	0.885	-0.046	0.002
EP2	0.934	0.872	-0.078	0.006
EP3	0.920	0.846	0.125	0.016
SP1	0.851	0.724	0.050	0.003
SP2	0.931	0.867	0.023	0.001
SP3	0.900	0.810	-0.073	0.005
Average	0.886	0.787	-0.0002	0.0032

Table B2
Post hoc performance metrics.

Performance variable	All firms (n = 112)	Firms for which the export venture accounts for at least 60% of firm sales (21)
Satisfaction with export sales revenue	0.203 [†]	0.449 [†]
Export revenue intensity	0.210 [†]	0.357 [*]

[†] Significant at p < 0.10.

^{*} Significant at p < 0.05.

References

Adner, R. (2002). When are technologies disruptive? A demand-based view of the emergence of competition. *Strategic Management Journal*, 23(8), 667–688.

Ahire, S. L., Golhar, D. Y., & Waller, M. A. (1996). Development and validation of TQM implementation constructs. *Decision Sciences*, 27(1), 23–56.

Amit, R., & Zott, C. (2001). Value creation in e-business. *Strategic Management Journal*, 22(6–7), 493–520.

Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 16(August), 396–400.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.

Barney, J. (2001). Is the resource-based ‘view’ a useful perspective for strategic management research? Yes. *Academy of Management Review*, 26(1), 41–56.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.

Benner, M. J., & Tushman, M. L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *Academy of Management Review*, 28(2), 238–256.

Berman, S. L., Wicks, A. C., Kotha, S., & Jones, T. M. (1999). Does stakeholder orientation matter? The relationship between stakeholder management models and firm financial performance. *Academy of Management Journal*, 42(5), 488–506.

Cadogan, J. W., Diamantopoulos, A., & Siguaw, J. A. (2002). Export market-oriented activities: Their antecedents and performance consequences. *Journal of International Business Studies*, 33(3), 615–626.

Carte, T. A., & Russell, C. J. (2003). In pursuit of moderation: Nine common errors and their solutions. *MIS Quarterly*, 27(3), 479–501.

Chan, R. Y., He, H., Chan, H. K., & Wang, W. Y. (2012). Environmental orientation and corporate performance: The mediation mechanism of green supply chain management and moderating effect of competitive intensity. *Industrial Marketing Management*, 41(4), 621–630.

Chandy, R. K., & Tellis, G. J. (1998). Organizing for radical product innovation: The overlooked role of willingness to cannibalize. *Journal of Marketing Research*, 35(4), 474–487.

Cheng, C. C. J., & Huizingh, E. K. R. E. (2014). When is open innovation beneficial? The role of strategic orientation. *Journal of Product Innovation Management*, 31(6), 1235–1253.

Cherrington, D. J., Bischoff, S. J., Dyer, W. G., Stephan, E. G., & Stewart, G. L. (2001). *Organizational effectiveness*. Provo, UT: Brigham Young University Press.

- Chi, T., & Sun, Y. (2013). Development of firm export market oriented behavior: Evidence from an emerging economy. *International Business Review*, 22(1), 339–350.
- Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least square latent variable modelling approach for measuring interaction effects: Results from a Monte Carlo simulation study and Electronic Mail Emotion/Adoption Study. *Information Systems Research*, 14(2), 42–63.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. G. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Mahwah, NJ: Lawrence-Erlbaum.
- Chmielewski, D. A., & Paladino, A. (2007). Driving a resource orientation: Reviewing the role of resource and capability characteristics. *Management Decision*, 45(3), 462–483.
- Christensen, C. M., & Bower, J. L. (1996). Customer power, strategic investment, and the failure of leading firms. *Strategic Management Journal*, 17(3), 197–218.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*, 2nd ed. Hillsdale, NJ: Erlbaum.
- Crespo, C. F., Griffith, D. A., & Lages, L. F. (2014). The performance effects of vertical and horizontal subsidiary knowledge outflows in multinational corporations. *International Business Review*, 23(5), 993–1007.
- Day, G. S., & Wensley, R. (1988). Assessing advantage: A framework for diagnosing competitive superiority. *The Journal of Marketing* 1–20.
- De Luca, L. M., Verona, G., & Vicari, S. (2010). Market orientation and R&D effectiveness in High-Technology firms: An empirical investigation in the biotechnology industry. *Journal of Product Innovation Management*, 27(3), 299–320.
- Deshpandé, R., & Farley, J. U. (2004). Organizational culture, market orientation, innovativeness and firm performance: An international research odyssey. *International Journal of Research in Marketing*, 12, 3–22.
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modelling*. Akron: University of Akron Press.
- Fernández-Mesa, A., & Alegre, J. (2015). Entrepreneurial orientation and export intensity: Examining the interplay of organizational learning and innovation. *International Business Review*, 24(1), 148–156.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Garcia, R., & Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *Journal of Product Innovation Management*, 19(2), 110–132.
- Gatignon, H., & Xuereb, J.-M. (1997). Strategic orientation of the firm and new product performance. *Journal of Marketing Research*, 34(1), 77–90.
- Ghemawat, P. (2007). *Redefining global strategy: Crossing borders in a world where differences still matter*. Boston: Harvard Business School Publishing.
- Golder, P. N., Mitra, D., & Moorman, C. (2012). What is quality? An integrative framework of processes and states. *Journal of Marketing*, 76(4), 1–23.
- Govindarajan, V., Kopalle, P. K., & Danneels, E. (2011). The effects of mainstream and emerging customer orientations on radical and disruptive innovations. *Journal of Product Innovation Management*, 28(S1), 121–132.
- Grewal, R., & Tansuhaj, P. (2001). Building organizational capabilities for managing economic crisis: The role of market orientation and strategic flexibility. *Journal of Marketing*, 65(2), 67–80.
- Gronroos, C., & Voima, P. (2013). Critical service logic: Making sense of value creation and co-creation. *Journal of the Academy of Marketing Science*, 41(2), 133–150.
- Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414–433.
- Hall, R. (1993). A framework linking intangible resources and capabilities to sustainable competitive advantage. *Strategic Management Journal*, 14(8), 607–618.
- Hamel, G., & Prahalad, C. K. (1994). *Competing for the future*. Boston: Harvard Business School Press.
- Hortintha, P., Lages, C., & Lages, L. (2011). The trade-off between customer and technology orientations: Impact on innovation capabilities and export performance. *Journal of International Marketing*, 19(3), 36–58.
- Hsieh, M. H., Tsai, K. H., & Wang, J. R. (2008). The moderating effects of market orientation and launch proficiency on the product advantage-performance relationship. *Industrial Marketing Management*, 37(5), 580–592.
- Hughes, M., Martin, S. L., Morgan, R. E., & Robson, M. J. (2010). Realizing product-market advantage in high-technology international new ventures: The mediating role of ambidextrous innovation. *Journal of International Marketing*, 18(4), 1–21.
- Hult, G. T. M., & Ketchen, D. J. (2001). Does market orientation matter?: A test of the relationship between positional advantage and performance. *Strategic Management Journal*, 22(9), 899–906.
- Hunt, S. D., & Morgan, R. M. (1995). The comparative advantage theory of competition. *Journal of Marketing*, 59(April), 1–15.
- Hunt, S. D., Sparkman Jr, R. D., & Wilcox, J. B. (1982). The pretest in survey research: Issues and preliminary findings. *Journal of Marketing Research*, 19(May), 269–273.
- Hurley, R. F., & Hult, G. T. M. (1998). Innovation, market orientation, and organizational learning: An integration and empirical examination. *The Journal of Marketing* 42–54.
- Husted, B. W., & Allen, D. B. (2007). Strategic corporate social responsibility and value creation among large firms: Lessons from the Spanish experience. *Long Range Planning*, 40(6), 594–610.
- ICEP (2004). CD-Export Database: Disk 1, European Union, Dataware Technologies, Cambridge, MA.
- Im, S., & Workman, J. P. Jr. (2004). Market orientation, creativity, and new product performance in high-technology firms. *Journal of Marketing*, 68(2), 114–132.
- Jaworski, B. J., & Kohli, A. J. (1993). Market orientation: Antecedents and consequences. *The Journal of Marketing*, 57(3), 53–70.
- Kaleka, A. (2002). Resources and capabilities driving competitive advantage in export markets: Guidelines for industrial exporters. *Industrial Marketing Management*, 31(3), 273–283.
- Katsikeas, C. S., Skarmeas, D., & Bello, D. C. (2009). Developing successful trust-based international exchange relationships. *Journal of International Business Studies*, 40(1), 132–155.
- Keil, M., Tan, B. C. Y., Wei, K. K., Saarinen, T., Tuunainen, V., & Wassenaar, A. (2000). A cross-cultural study on escalation of commitment behavior in software projects. *MIS Quarterly*, 24(2), 299–325.
- Kim, N., Im, S., & Slater, S. F. (2013). Impact of knowledge type and strategic orientation on new product creativity and advantage in high-technology firms. *Journal of Product Innovation Management*, 30(1), 136–153.
- Kirca, A. H., Jayachandran, S., & Bearden, W. O. (2005). Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance. *Journal of Marketing*, 69(2), 24–41.
- Kyläheiko, K., Jantunen, A., Puumalainen, K., Saarenketo, S., & Tuppur, A. (2011). Innovation and internationalization as growth strategies: The role of technological capabilities and appropriability. *International Business Review*, 20(5), 508–520.
- Lages, L. F., Jap, S. D., & Griffith, D. A. (2008a). The role of past performance in export ventures: A short-term reactive approach. *Journal of International Business Studies*, 39(2), 304–325.
- Lages, L. F., Abrantes, J. L., & Lages, C. R. (2008b). The STRATADAPT scale: A measure of marketing strategy adaptation to international business markets. *International Marketing Review*, 25(5), 584–600.
- Lages, L. F., Silva, G., & Styles, C. (2009a). Relationship capabilities, quality, and innovation as determinants of export performance. *Journal of International Marketing*, 17(4), 47–70.
- Lages, L. F., Silva, G., Styles, C., & Pereira, Z. L. (2009b). The NEP Scale: A measure of network export performance. *International Business Review*, 18(4), 344–356.
- Lages, L. F., Mata, J., & Griffith, D. A. (2013). Change in international market strategy as a reaction to performance decline. *Journal of Business Research*, 66(12), 2600–2611.
- Lages, L. F. (2016). VCW—Value creation wheel: Innovation, technology, business, and society. *Journal of Business Research*, 69(11), 4849–4855.
- Leonidou, L. C., Katsikeas, C. S., & Coudounaris, D. N. (2010). Five decades of business research into exporting: A bibliographic analysis. *Journal of International Management*, 16, 78–91.
- Lepak, D. P., Smith, K. G., & Taylor, M. S. (2007). Value creation and value capture: A multilevel perspective. *Academy of Management Review*, 32(1), 180–194.
- Love, J. H., Roper, S., & Zhou, Y. (2016). Experience, age and exporting performance in UK SMEs. *International Business Review*, 25(4), 806–819.
- MIT (2016). *MIT-Observatory of economic complexity*. <http://atlas.media.mit.edu/en/profile/country/prt/> (retrieved 12/06/2016).
- Macdonald, E. K., Kleinaltenkamp, M., & Wilson, H. N. (2016). How business customers judge solutions: Solution quality and value in use. *Journal of Marketing*, 80(3), 96–120.
- Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, 22(5), 387–401.
- Menguc, B., & Auh, S. (2008). The asymmetric moderating role of market orientation on the ambidexterity-firm performance relationship for prospectors and defenders. *Industrial Marketing Management*, 37(4), 455–470.
- Moen, O., & Servais, P. (2002). Born global or gradual global? Examining the export behavior of small and medium-sized enterprises. *Journal of International Marketing*, 10(3), 49–57.
- Morgan, N. A., Kaleka, A., & Katsikeas, C. S. (2004). Antecedents of export venture performance: A theoretical model and empirical assessment. *Journal of Marketing*, 68(1), 90–108.
- Murray, J. Y., Gao, G. Y., & Kotabe, M. (2011). Market orientation and performance of export ventures: The process through marketing capabilities and competitive advantages. *Journal of the Academy of Marketing Science*, 39(2), 252–269.
- Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing*, 54(4), 20–35.
- Navarro-García, A., Arenas-Gaitán, J., & Rondán-Cataluña, F. J. (2014). External environment and the moderating role of export market orientation. *Journal of Business Research*, 67(5), 740–745.
- Ngo, V. D., Janssen, F., Leonidou, L. C., & Christodoulides, P. (2016). Domestic institutional attributes as drivers of export performance in an emerging and transition economy. *Journal of Business Research* in print.
- O'Connor, G. C., & Rice, M. P. (2013). New market creation for breakthrough innovations: Enabling and constraining mechanisms. *Journal of Product Innovation Management*, 30(2), 209–227.
- Ozkaya, H. E., Droge, C., Hult, G. T. M., Calantone, R., & Ozkaya, E. (2015). Market orientation, knowledge competence, and innovation. *International Journal of Research in Marketing*, 32(3), 309–318.

- Paladino, A. (2007). Investigating the drivers of innovation and new product success: A comparison of strategic orientations. *Journal of Product Innovation Management*, 24(6), 534–553.
- Pla-Barber, J., & Alegre, J. (2007). Analyzing the link between export intensity, innovation and firm size in a science-based industry. *International Business Review*, 16(3), 275–293.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. New York: Free Press.
- Prahalad, C. K., & Ramaswamy, V. (2004). *The future of competition: Co-creating unique value with customers*. Boston: Harvard Business School Press.
- Ray, G., Barney, J. B., & Muhanna, W. A. (2004). Capabilities, business processes, and competitive advantage: Choosing the dependent variable in empirical tests of the resource-based view. *Strategic Management Journal*, 25(1), 23–37.
- Reed, R., & DeFillippi, R. J. (1990). Causal ambiguity, barriers to imitation, and sustainable competitive advantage. *Academy of Management Review*, 15(1), 88–102.
- Ringle, C. M., Wende, S., & Will, A. (2005). *SmartPLS version 2.0*. Hamburg: University of Hamburg.
- Schumpeter, J. A. (1934). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*. Cambridge, MA: Harvard University Press.
- Sharma, N., & Patterson, P. G. (1999). On the role of experience in developing service satisfaction in consumer financial planning services. *Journal of Customer Service in Marketing & Management*, 5(4), 33–48.
- Sharma, S., Durand, R. M., & Gur-Arie, O. (1981). Identification and analysis of moderator variables. *Journal of Marketing Research*, 18(3), 291–300.
- Skarmeas, D., Katsikeas, C. S., & Schlegelmilch, B. B. (2002). Drivers of commitment and its impact on performance in cross-cultural buyer-seller relationships: The importer's perspective. *Journal of International Business Studies*, 33(4), 757–783.
- Slater, S. F., & Narver, J. C. (1999). Market-oriented is more than being customer-led. *Strategic Management Journal*, 20(12), 1165–1168.
- Sorescu, A. B., Chandy, R. K., & Prabhu, J. C. (2003). Sources and financial consequences of radical innovation: Insights from pharmaceuticals. *Journal of Marketing*, 67(4), 82–102.
- Story, V. M., Boso, N., & Cadogan, J. W. (2015). The form of relationship between firm-level product innovativeness and new product performance in developed and emerging markets. *Journal of Product Innovation Management*, 32(1), 45–64.
- Styles, C., & Ambler, T. (2000). The impact of relationship variables on export performance: An empirical investigation in Australia and the UK. *Australian Journal of Management*, 25(3), 261–281.
- Styles, C., Patterson, P. G., & Ahmed, F. (2008). A relational model of export performance. *Journal of International Business Studies*, 39(5), 880–900.
- Tantong, P., Karande, K., Nair, A., & Singhapakdi, A. (2010). The effect of product adaptation and market orientation on export performance: A survey of Thai managers. *Journal of Marketing Theory and Practice*, 18(2), 155–170.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Tenenhaus, M., Vinzi, V. E., Chatelin, Y.-M., & Lauro, C. (2005). PLS path modeling. *Computational Statistics & Data Analysis*, 48(1), 159–205.
- Tsinopoulos, C., Lages, L. F., & Sousa, C. M. (2014). Export experience counts: Exploring its effect on product design change. *R&D Management*, 44(5), 450–465.
- Ulaga, W., & Eggert, A. (2006). Value-based differentiation in business relationships: Gaining and sustaining key supplier status. *Journal of Marketing*, 70(1), 119–136.
- Waddock, S. A., & Graves, S. (1997). The corporate social performance-financial performance link. *Strategic Management Journal*, 18, 303–317.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.
- Wong, S. K. S., & Tong, C. (2012). The influence of market orientation on new product success. *European Journal of Innovation Management*, 15(1), 99–121.
- Zahra, S. A., Nash, S., & Bickford, D. J. (1995). Transforming technological pioneering into competitive advantage. *Academy of Management Executive*, 9(1), 17–31.
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52(3), 2–22.
- Zhao, Y., & Cavusgil, S. T. (2006). The effect of supplier's market orientation on manufacturer's trust. *Industrial Marketing Management*, 35, 405–414.
- Zhou, K. Z., Yim, C. K., & Tse, D. K. (2005). The effects of strategic orientations on technology and market-based breakthrough innovations. *Journal of Marketing*, 69(2), 42–60.
- Zou, S., Taylor, C. R., & Osland, G. E. (1998). The EXPERF scale: A cross-national generalized export performance measure. *Journal of International Marketing*, 6(3), 37–58.
- Zou, S., Fang, E., & Zhao, S. (2003). The effect of export marketing capabilities on export performance: An investigation of Chinese exporters. *Journal of International Marketing*, 11(4), 32–55.



本文献由“学霸图书馆-文献云下载”收集自网络，仅供学习交流使用。

学霸图书馆（www.xuebalib.com）是一个“整合众多图书馆数据库资源，提供一站式文献检索和下载服务”的24小时在线不限IP图书馆。

图书馆致力于便利、促进学习与科研，提供最强文献下载服务。

图书馆导航：

[图书馆首页](#) [文献云下载](#) [图书馆入口](#) [外文数据库大全](#) [疑难文献辅助工具](#)