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Innovativeness as a driver of the international expansion of developing markets' firms

Evidence of curvilinear effects

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Abstract

Purpose – The purpose of this paper is to examine the curvilinear effects of firm innovativeness (i.e. product, organisational and marketing innovation) on international expansion as well as the effect of expansion on performance in the developing countries (DCs) setting.

Design/methodology/approach – Research hypotheses are tested using survey data obtained from firms located in four South-East European DCs. Covariance-based structural equation modelling is used to test the proposed conceptual framework.

Findings – Empirical findings support the hypothesised U-shaped relationship between product innovation and organisational innovation and the level of international expansion of firms in developing markets. The authors found an inverse U-shaped relationship between marketing innovation and the level of international expansion. Furthermore, the existence of a strong positive link between the level of international expansion and firm performance is also confirmed.

Research limitations/implications – While this research utilises a sample of firms from a homogenous group of DCs, further research could use a more heterogeneous sample and thus control the model for various contingency effects (e.g. environment turbulence, market structure and competitive dynamics).

Practical implications – When it comes to product and organisational innovation, international expansion is achieved only with a higher level of innovativeness. On the contrary, beyond a certain level, further investments in marketing innovation do not have additional positive effects on international expansion.

Originality/value – This study is one of the first that explicitly focuses on examining the non-linear effects of innovativeness on international expansion in the DC context.

Keywords Performance, Innovativeness, Product innovation, Organizational innovation, Marketing innovation, International expansion

Paper type Research paper

1. Introduction

Firms based in developing countries (DCs) are characterised by a conventional image of copycat innovators, which focus their business attention mainly on the lower-end market segments of their domestic markets (Ernst *et al.*, 2015). Indeed, most of the available literature related to the innovation strategies of DC firms focuses on approaches and techniques – such as reverse engineering, no-frills innovation, Jugaad innovation and frugal innovation – aimed at realising less costly versions of more technologically advanced products conceived in more developed countries (Agnihotri, 2014).

However, recent evidence highlights another side of the story, revealing that an increasing number of firms based in less developed areas are expanding internationally by

leveraging innovative solutions that are appreciated even by consumers from more advanced economies (Belderbos *et al.*, 2013). Examples of such firms include the Indian Godrej and the Turkish Arçelik (owner of the BEKO brand). Both firms have become well established globally in the sector of white goods. Furthermore, according to Forbes (2015), 19 per cent of the top 100 global innovative firms worldwide in 2015 were based in DCs (South America, Africa, Middle East, Eastern European countries and the Asian Far East, excluding Japan). This supports the claim that success stories from DCs are increasing and provides an additional sign of a worldwide consolidation trend in which DC firms are important protagonists in the global innovation arena.

Nevertheless, such facts do not match the evolution of the academic debate, which still lags behind. Thus far, the debate on the relationship between innovation, internationalisation and the performance of a firm has mainly been confined to the context of developed economies (Kumar *et al.*, 2013). However, scholars argue that “context matters” for innovating and competing, and the specific features that characterise DCs may deeply challenge even the most well-established managerial preconceptions of the innovation approaches (Prahalad, 2012), internationalisation processes (Khanna *et al.*, 2005) and marketing strategies (Sheth, 2011) of firms.

In this study, we address the above-described research gap, both theoretically and empirically. In particular, we rely on the resource-based view (RBV) of a firm (Wernerfelt, 1984) to conceptualise and test specific research hypotheses that challenge the conventional vision of the relationship between innovativeness, international expansion and firm performance. We empirically test our research hypotheses on a sample of export firms based in South-Eastern Europe (SEE). SEE, and especially the former Yugoslavia territory, is a “developing region” (OECD, 2006) that has been characterised by deep transformation of its political, economic and institutional environment over the last 20 years (Radas and Božić, 2009), and it is expected to be affected even further by the imminent entrance of several countries from the region to the European Union.

Our paper contributes to the extant body of literature in several ways. First, it helps in enriching the understanding of how the innovativeness of DC firms could explain the scope of their international expansion. In this way, our study responds to calls urging for assessment of the universal applicability of theories related to innovation activities in the context of DCs (e.g. Story *et al.*, 2015). Second, our paper provides fresh empirical evidence on SEE firms, which is rare due to the lack of coverage provided by international institutions, especially the EU (no data are available for some SEE countries in relation to the Innovation Union Scoreboard and the CIS survey). Third, it provides empirical evidence for the relationship between international expansion and performance, thus contributing to the contrasting empirical evidence available in the literature.

The paper is organised as follows. First, we review relevant literature and declare our research hypotheses. In the section that follows, we clarify the methodological aspects of the study and present the empirical results. Finally, we comment on our results and conclude the paper, outlining its theoretical and practical implications.

2. Background and conceptual framework

2.1 The relationship between innovation and internationalisation in the context of DCs

Until recently, firms based in DCs did not focus much on innovation and internationalisation, mostly due to historical reasons and political events. Moreover, “internationalization, similar to innovation, was [...] long ignored by emerging market firms [and that] while, scholars have investigated the performance consequences of [...] internationalization by emerging markets firms, we do not have adequate understanding of what drives emerging market firms to internationalize” (Singh and Gaur, 2013, p. 301).

The relationship between innovativeness and internationalisation has been extensively studied from the standpoint of developed economies. According to the RBV of the firm, innovativeness can be considered a strategic resource (Teece *et al.*, 1997) that enables firms expand into international markets and achieve a competitive advantage by offering customers solutions with added and/or new sources of value relative to competitors (Kim and Park, 2010). Considering that internationalisation adds the pressure of competitiveness to firms, and as the pool of firms competing for the same domestic customers is growing, innovativeness should ultimately help in increasing the level of international expansion. This notion provides the basis for the development of the framework that we test in this study.

From a theoretical point of view, the prevailing assumption is that innovativeness directly affects the probability of a firm to start export operations (e.g. Cassiman and Golovko, 2011). Indeed, by internationalising, innovative firms can exploit in more markets the competitive advantages obtained in domestic markets (e.g. Kafourous *et al.*, 2008) and lower their initial investments in the development of innovation (Hitt *et al.*, 1997). In later phases, the linearity of this relationship becomes more blurred and, according to many, the relationship between innovation and international expansion becomes reciprocal (Chiva *et al.*, 2014). For example, based on the learning-by-exporting perspective, firms expanding in foreign markets are able to collect additional knowledge that aids them in conceiving more innovative products (Hitt *et al.*, 1997; Kotabe *et al.*, 2002). Furthermore, internationalised firms can also access additional innovation-related resources, such as skilled researchers, designers and technologists, benefitting their competitive strategies (Kafourous *et al.*, 2008).

In general, the available empirical evidence supports the existence of a positive and linear effect of the innovation capabilities of a firm on its international expansion (e.g. Cassiman and Golovko, 2011). Some studies suggest that this relationship could be affected by the industry context because of the different levels of dynamism that characterise different sectors (Hitt *et al.*, 1997) or by the target market context (Cadogan *et al.*, 2003). What remains unclear is whether this relationship has the same shape for firms internationalising from DCs as for firms coming from developed countries.

Our proposition is that compared with firms based in more developed markets, firms internationalising from DCs face additional challenges and constraints. First, they tend to be smaller and less internally endowed with appropriate resources and capabilities (Ren *et al.*, 2010) compared to firms in developed markets. Thus, before developing distinctive strategic capabilities that allow them to achieve a sustainable competitive advantage abroad, many of these firms must first make up for the threshold strategic capabilities they lack – that is, those capabilities that organisations need to achieve parity with incumbents already competing in a given market (Prange and Verdier, 2011).

Second, international expansion is a gradual process that is mainly based on the prior accumulation of market knowledge and organisational experience (Johanson and Vahlne, 1977), which many DC firms simply do not have (e.g. for historical and political reasons). Thus, beyond the liabilities of smallness and foreignness, these firms also have to overcome a third liability – of backwardness – that makes achieving their internationalisation goals even more challenging.

Building upon such arguments, we contend that there is a J-shaped relationship between innovativeness and the level of international market expansion of DC firms. Such reasoning leads us to posit that the traditional arguments used to support the innovation-internationalisation relationship might need to be adapted when applied to the case of DCs. In particular, at low levels of innovativeness, firms show a limited propensity and ability to expand abroad. This assumption has been widely accepted in the context of more advanced economies (e.g. Cassiman and Golovko, 2011), and we see no reason to argue differently in

the context of DCs. Of course, some level of international expansion can be achieved at low levels of innovation. For instance, firms might receive unsolicited orders from foreign buyers due to their cost competitiveness. Alternatively, firms could benefit from piggy-backing on internationalisation processes, an activity typically characteristic of small industrial suppliers and subcontractors (Balboni *et al.*, 2013). However, we expect that the low innovation firm will generally take a more reactive than proactive approach to internationalisation. Therefore, we expect that a low level of innovativeness in a firm will correspond to a low level of internationalisation.

DC firms that begin to invest proactively in the development of their innovation capabilities will need to devote more effort and time than firms based in more advanced markets to obtain significant results in international expansion. This difference is the result of the time and investments needed to overcome the gap associated with the described intrinsic liabilities of DC firms (newness, smallness and backwardness). Thus, we expect that DC-based firms with medium levels of innovativeness will be unable to commit their nascent innovative capabilities to foreign markets (Liu *et al.*, 2008), thus achieving limited results in international expansion.

Finally, we expect that firms with higher levels of innovativeness will have a greater likelihood of achieving positive results in international expansion. These firms enjoy a favourable combination of the innovation capabilities they have developed and the cost advantages derived from their access to low-cost resources and capabilities in their domestic markets that allow them to enter several foreign markets (Liu *et al.*, 2013). On this basis, we develop specific research hypotheses in the following sections, distinguishing three different levels of firm innovativeness: product innovation, organisational innovation and marketing innovation.

2.1.1 The impact of product innovation on the international expansion of a firm. Firms are more likely to expand internationally if they can rely on a strong technological profile and product innovation capabilities (e.g. Leonidou *et al.*, 2007; Cassiman and Golovko, 2011). We define product innovation as “a good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user friendliness or other functional characteristics” (OECD, 2005).

Previous studies have supported the existence of a positive relationship between product innovation and the internationalisation of a firm (e.g. Kleinschmidt and Cooper, 1988; Cavusgil and Kirpalani, 1993). Among those studies, Chiva *et al.* (2014) found that product innovation (both radical and incremental) provides concrete support to the international expansion of a firm. Moreover, Halilem *et al.* (2014) demonstrated that product innovation positively affects the expansion of firms towards both close (in the first step) and distant (in the second step) markets. Boso *et al.* (2013) also provided empirical validation for the existence of a positive relationship between product innovation and a firm’s export achievements, taking into account various contingencies. While it is reasonable to assume that firms based in DCs are not an exception to the general rule and the relationship will remain positive, consideration must be given to the technological innovation gap from which firms based in this area suffer, which can seriously hamper them from expanding in multiple markets (Radas and Božić, 2009).

Thus, in line with our previous arguments regarding the existence of a J-shaped relationship between innovativeness and the international expansion of DC firms, we expect that the influence of product innovation on the international expansion of firms will have a substantial growth only after reaching a turning point. Lower levels of innovation will correspond to limited, insignificant results in international expansion (selling fewer innovative products in undeveloped markets, leveraging low-cost resources and economies of scale). As product innovation increases to a medium level, DC firms are expected to tend

to move their offer to more knowledgeable markets, due to their ability to commit additional resources to sense and seize opportunities for their more sophisticated solutions in peripheral foreign markets. Desirable outcomes will be finally achieved at higher levels of product innovation when the firm becomes able to offer technological solutions in the global market that are at least comparable to those offered by firms based in more advanced economies. Given that, we formulate our first hypothesis as follows:

H1. Product innovation has a J-shaped relationship with the level of international expansion of developing markets firms.

2.1.2 The impact of organisational innovation on the international expansion of a firm.

In order to become a stable source of sustainable competitive advantage for a firm, innovation should be carried out in a systematic way and not just occasionally or opportunistically (Miller and Shamsie, 1996). Consequently, firms need to adopt appropriate organisational structures and the organisational processes and routines aligned with their innovation ambitions (Lawson and Samson, 2001). In other words, they also need to innovate at the organisational level.

Organisational innovation refers to changes in the structures, business practices and routines in the workplace aimed at reducing administrative costs or increasing employees' productivity (Damanpour, 1991). Birkinshaw *et al.* (2008, p. 829) define organisational innovation as the "generation and implementation of a management practice, process, structure or technique that is new to the state of the art and is intended to further organizational goals". Through the routinisation of organisational activities, a firm's capabilities become embedded into organisational memory, producing a distinctive configuration of resources that support the achievement of a competitive advantage (Knight and Cavusgil, 2004).

Empirical research investigating the contribution of organisational innovation to the international expansion of a firm is limited and fragmented. Weerawardena (2003) found empirical confirmation that organisational innovation enables firms to gain a sustainable competitive advantage and market performance (O'Cass and Weerawardena, 2009). Anderson (2000) found that internationalised firms revise and introduce innovative practices and routines aimed at reducing internal costs and/or increasing productivity more often than non-internationalised firms.

In relation to firms based in DCs, Luo and Tung (2007) claimed that in their processes of international expansion, large multinational firms frequently acquire strategic assets abroad (other firms, managers, technologies) to compensate for their connate organisational weaknesses. Smaller firms do not have such arrows in their quiver, and they also tend to be less equipped from an organisational point of view compared to firms based in more developed countries (Yamakawa *et al.*, 2008).

Leveraging the same logic we used for the previous hypothesis, we claim that at lower levels of organisational innovation, it is likely that firms will gain no or limited benefit in terms of international expansion. Indeed, the use of unchanging and outdated procedures and routines will not provide sufficient support to the international expansion of a firm. At a middle level of organisational innovation, it is likely that a firm will begin to adopt more sophisticated organisational solutions. However, these modified routines and procedures will likely contribute to reducing the initial gap of the firm rather than creating a solid competitive foundation that allows the expansion into international markets. Finally, we expect that higher levels of organisational innovation will correspond to the adoption of sophisticated procedures, routines and organisational structures that are able to provide concrete support to the international expansion of a firm. More formally, we state the following:

H2. Organisational innovation has a J-shaped relationship with the level of international expansion for firms in developing markets.

2.1.3 The impact of marketing innovation on the international expansion of a firm. Research on the interplay between marketing and internationalisation has a long tradition in management studies (e.g. Simmonds and Smith, 1968; Cavusgil and Nevin, 1981). Since the pioneering work of Schumpeter (1942), entering a new market has been considered an act of innovation. This is mainly connected to the need to adapt a firm's marketing strategy (product, pricing, distribution and communication strategies), according to the unique conditions found in foreign markets. Previous studies have exhaustively described the many advantages of the export performance resulting from innovative marketing solutions (e.g. Cavusgil and Kirpalani, 1993). Bloch (2007, p. 29) defined marketing innovation as "the implementation of a new marketing method that involves significant changes in product design or packaging, product placement, product promotion or pricing". Ren *et al.* (2010) found that marketing innovation helps firms to achieve a sustainable competitive advantage. Similarly, Naidoo (2010) demonstrated that marketing innovation capabilities of a firm support the implementation of strategies aimed at achieving a competitive advantage. Furthermore, Knight (2000) confirmed that small firms use innovative marketing practices to reach higher international market performance. After examining a sample of ten young firms making their first export decisions, Crick and Crick (2015, p. 10) concluded that "the respective firms' first export order was a largely planned market innovation rather than unplanned and serendipitous".

Evidence from DCs is far more limited. In regard to Colombian firms, Zou *et al.* (1997) found that export firms tend to adopt new marketing strategies and solutions when addressing foreign markets. Leveraging on the same logic we used for *H1* and *H2*, we expect that lower levels of marketing innovation – which we picture in terms of the use of traditional and unsophisticated marketing solutions – will correspond to limited support to the international expansion of the firm. We argue that a shift on how DC firms manage their marketing efforts will not automatically boost their international expansion. In other words, it is reasonable to expect that DC firms will not be able to convert automatically their additional marketing efforts into new market expansion. Moreover, it is expected that their efforts will first have to reduce the gaps these firms suffer in comparison to competitors based in more developed countries and then to develop some sort of competitive advantage. Finally, it is with the adoption of updated and sophisticated marketing solutions, thus at high levels of marketing innovation, that firms based in DCs will have the adequate support to expand their business in multiple markets. Given that, we advance our third hypothesis as follows:

H3. Marketing innovation has a J-shaped relationship with the level of international expansion for firms in developing markets.

2.2 The relationship between international expansion and performance in the context of DCs The discussion on the influence of the international expansion process on firm performance is longstanding (e.g. Contractor *et al.*, 2007). While earlier studies claimed that the impact was generally positive (e.g. Grant, 1987), later empirical research produced contrasting evidence (Glaum and Oesterle, 2007). For example, some researchers found a negative (or at least, a non-positive) correlation (i.e. Collins, 1990), while others argued for the existence of a U-shaped (Capar and Kotabe, 2003) or inverted U-shaped relationship (Sullivan, 1994). S-shaped relationships also gained a certain degree of popularity (Lu and Beamish, 2004), while additional studies highlighted the role of moderating variables in such relationship (e.g. Kotabe *et al.*, 2002). Ruigrok and Wagner (2004) carried out a meta-review on such topic that involved more than 60 empirical studies, finding no precise patterns in the relationship between international expansion and performance. Despite the level of general disagreement, the great majority of studies converge on the fact that the relationship is a

positive one or, at least, that it turns into a positive one at a certain point in time (Ruigrok and Wagner, 2004).

The market context of internationalising firms has been considered to be an important “shaper” of the relationship between expansion and performance, and the performance consequences of internationalisation vary consistently, even across different contexts (Singh and Gaur, 2013). In this regard, Contractor *et al.* (2003) discussed how firms based in more developed markets tend to experience negative returns during the beginning of their expansion processes. Some, albeit limited, evidence is also available regarding the international expansion processes of firms based in DCs. The market context of internationalising firms has been considered to be an important shaper of the relationship between expansion and performance, and the performance consequences of internationalisation have been found to vary consistently, even across different contexts (Singh and Gaur, 2013). In particular, Contractor *et al.* (2003) discussed that firms based in more developed markets tend to experience negative returns early in the expansion processes. Some, albeit limited, evidence is also available regarding the international expansion processes of DC-based firms. After hypothesising a U-shaped relationship, Singh and Gaur (2013) found empirical evidence that the internationalisation-performance relationship remains positive in DC-based firms with any degree of internationalisation (low, medium and high). The authors explained that firms based in DCs could have different cost structures than firms based in advanced countries that allow them to obtain positive returns from early international expansion and to continue along the same path throughout the process.

In our paper, we build on these results. Furthermore, considering the resource starvation that characterises firms based in DCs, we expect these firms to be especially cautious in managing international expansion, following a step-by-step process and avoiding bold, initial investments to immediately achieve profitable results. Given the foregoing arguments, we advance our fourth and final hypothesis:

- H4. The level of international expansion of a firm has a positive and significant effect on its performance.

The outlined hypotheses of our conceptual framework are summarised in Figure 1.

3. Methodology

3.1 Research context

Firms from SEE do not differ from those in other DCs in terms of some mainly historically related facts. First, SEE has experienced a highly centralised and regulated economic environment in which incentives for firms to innovate were practically absent. Incentives to internationalise were also limited for political reasons connected with the peculiar positioning of former Yugoslavia as a socialistic-inspired but not-aligned economy. Moreover, SEE currently does not have a consistent level of development. Some countries have already achieved the status of developed countries and are better at accepting and implementing changes (e.g. Bulgaria, Romania, Croatia, Slovenia), whereas others (e.g. Serbia, Bosnia and Herzegovina, Montenegro, Albania), which are the focus of this study, are still in the process of development. Major economic reforms – in particular, massive privatisation and liberalisation operations – were introduced only after the end of the war (in 1990s) that led to the dissolution of the Yugoslavian state (Buck *et al.*, 2000). Reforms encouraged foreign firms to invest in such areas by opening markets to global competition. At the same time, reforms indirectly forced local firms to invest heavily in innovation and the international expansion process in order to preserve their competitiveness. Therefore, both innovation and internationalisation can be considered relatively recent occurrences for firms based in SEE (Radas and Božić, 2009).

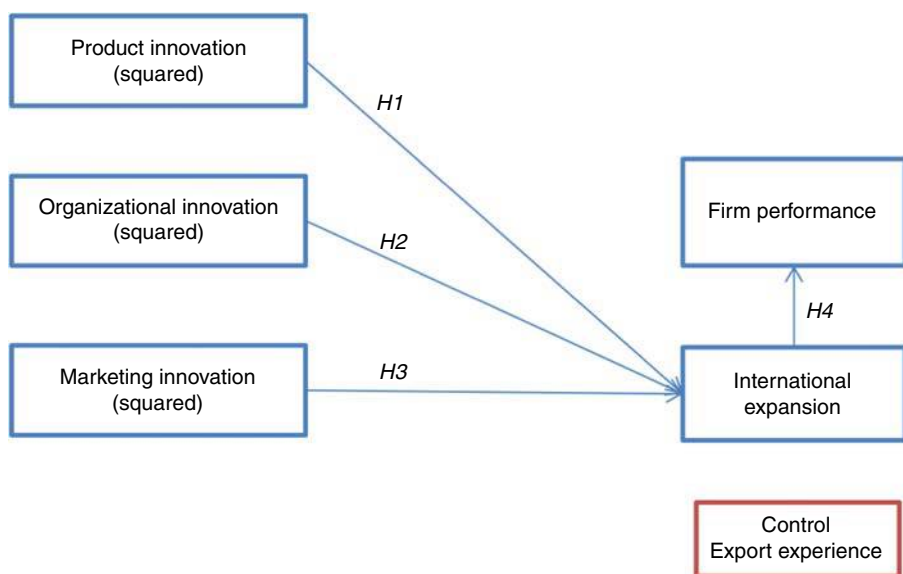


Figure 1.
Conceptual framework

3.2 Research design

We collected data from export firms based in four DCs that share a common history: Albania, Bosnia and Herzegovina, Serbia and Montenegro. The same research approach was followed in all four countries. In accordance with the practice in international marketing research (e.g. Bello *et al.*, 2010), our study relied on one key export informant in the firm rather than multiple informants from each firm. Therefore, e-mail invitations were sent from a university e-mail address within each of the four different countries to the key export decision maker of the firm that is a registered exporter located in that particular country. To obtain a diversity of market settings, firms from a variety of industry types were included (e.g. manufacturing, services, automotive, pharmaceutical and financial services sectors). Sample sizes for the four countries were determined after discarding partially completed (with more than 10 per cent of missing values) surveys: Albania ($n = 107$), Bosnia and Herzegovina ($n = 109$), Serbia ($n = 71$) and Montenegro ($n = 118$). The response rates were 24 per cent for Albania, 19 per cent for Bosnia and Herzegovina, 15 per cent for Serbia and 27 per cent for Montenegro. These rates are comparable to the response rates reported in other export surveys (e.g. Souchon *et al.*, 2015). Descriptive information about the four samples is shown in Table I.

Descriptive	Albania	Bosnia and Herzegovina	Serbia	Montenegro
Firm size (average number of employees)	104	25	61	28
Export experience (average until 2014, years)	9.3	8.8	6.6	6.4
Export sales (average 2013, % of total sales)	40.7	27.3	42.1	13.0
<i>Business activity</i>				
Manufacturing (%)	57	38	68	15
Services (%)	43	62	32	85
<i>n</i>	107	109	71	118

Table I.
Profile of the sample

3.3 Measures

The survey questions were selected based on an extensive literature review, previous research and exploratory interviews with export firm managers. Firm performance was measured relative to competitors, based on items recommended by Auh and Merlo (2012). Product and service innovations and marketing innovation measures were adapted from Škerlavaj *et al.* (2010), and organisational innovation items were adapted from Vaccaro *et al.* (2012). The level of international market expansion was assessed based on geographical market coverage (including Adriatic countries, Western and Central Europe, Eastern Europe, North America, South and Central America, East Asia, Middle East, North Africa and all other countries as categories). An explanation of each geographical market was given to respondents.

To test the robustness of our proposed relationships, several covariates were included. First, the model included all lower-level linear variables. Second, following previous literature in the area of export and innovation, we also included export experience as a control variable. Following Diamantopoulos and Winklhofer (1999), we measured export experience by the number of years firm has been involved in exporting activities. Export experience was included in the model as through logarithmic transformation.

4. Results

4.1 Measurement assessment

We used a confirmatory factor analysis (CFA) with maximum likelihood estimation in LISREL 8.7, to assess measurement model in all four samples. The model fit was assessed using a χ^2 test and several fit heuristics (Bagozzi and Yi, 2012). All items are entered into a single CFA model for each country independently (see Table II), which returned a converged solution; with all fit heuristics well within cut-off ranges.

Countries	χ^2	CFA model fit			CR	1	2	3	4
		RMSEA	NNFI	CFI					
<i>ALB</i>	119.22	0.054	0.957	0.967					
1. Product innovation					0.864	<i>0.68</i>	0.004	0.045	0.000
2. Organisational innovation					0.860	0.067	<i>0.56</i>	0.110	0.030
3. Marketing innovation					0.703	0.212	0.331	<i>0.54</i>	0.096
4. Firm performance					0.909	0.020	0.174	0.310	<i>0.72</i>
<i>BH</i>	164.21	0.086	0.881	0.910					
1. Product innovation					0.791	<i>0.56</i>	0.000	0.005	0.000
2. Organisational innovation					0.862	0.010	<i>0.56</i>	0.000	0.000
3. Marketing innovation					0.777	0.072	0.001	<i>0.64</i>	0.027
4. Firm performance					0.921	0.000	0.001	0.165	<i>0.75</i>
<i>MNE</i>	205.89	0.104	0.882	0.910					
1. Product innovation					0.875	<i>0.70</i>	0.004	0.070	0.031
2. Organisational innovation					0.872	0.061	<i>0.58</i>	0.092	0.057
3. Marketing innovation					0.693	0.264	0.303	<i>0.54</i>	0.021
4. Firm performance					0.935	0.175	0.239	0.144	<i>0.79</i>
<i>SRB</i>	127.78	0.076	0.900	0.916					
1. Product innovation					0.806	<i>0.59</i>	0.077	0.004	0.020
2. Organisational innovation					0.818	0.278	<i>0.48</i>	0.001	0.002
3. Marketing innovation					0.547	0.064	0.035	<i>0.45</i>	0.002
4. Firm performance					0.902	0.140	0.040	0.041	<i>0.70</i>

Notes: CR: composite reliability; ALB, Albania; BH, Bosnia and Herzegovina; MNE, Montenegro; SRB, Serbia. df = 91. Correlation matrix is given below diagonal, squared correlations above diagonal while AVE values are given on diagonal in italic

Table II.
Correlations, construct reliability, average variance extracted and discriminant validity

Next, in order to evaluate reliability, we assessed the convergent and discriminant validity of our constructs in all countries. All factor loadings were high and significant ($p < 0.01$) in all countries, and we obtained significant t -values and satisfying criteria for convergent validity. As can be seen in Table II, most of the average variance extracted (AVE) values were above the recommended 0.5 cut-off (Fornell and Larcker, 1981), which was taken as an indication that the constructs had convergent validity. However, in the Albanian sample, the AVE values for organisational innovation (0.48) and marketing innovation (0.45) were slightly below the 0.5 cut-off. While this implies that the majority of the variance in those constructs was due to error, the proportion is not especially high. Furthermore, measures with lower AVE results have been used successfully in previous literature (e.g. Netemeyer *et al.*, 1997; Souchon *et al.*, 2015) and it has been suggested that AVE values even lower than 0.4 are not severe problems (e.g. Diamantopoulos and Siguaw 2000). In addition, composite reliability values were well above the critical level of 0.60 (Bagozzi and Yi, 1988). For examining of discriminant validity, we followed the procedure recommended by Fornell and Larcker (1981), comparing the AVE scores of each construct with the shared variances (i.e. square of all construct correlations). All AVE estimates were greater than the shared variance of latent variables (squared correlations) (Table II). It was therefore concluded that discriminant validity was achieved in the study.

4.2 Assessment of the common method bias (CMB)

The study relied on a single respondent for all variables, which could lead to CMB (Podsakoff *et al.*, 2003). To prevent CMB, we used different *ex ante* and *ex post* remedies, as suggested by Chang *et al.* (2010). First, we tried to avoid CMB through the research design. In that stage, the questionnaire was designed carefully, and reflective items that measured the same underlying constructs were scattered throughout the questionnaire. In addition, respondents were assured of anonymity and confidentiality and were advised that there were no good or bad answers to the questionnaire and that their personal opinions were the only answers that mattered.

Second, we used different *ex post* statistical remedies to test how likely it was that CMB influenced the data. First, our hypothesised model contains multiple complex quadratic relationships between the dependent and independent variables, which makes it very difficult and improbable for respondents to have the cognitive ability to predict the complex relationships involved in the study.

In addition, Harman's one-factor test was administered to the data as well. All the items in the study were constrained to load on a single factor in CFA (Podsakoff *et al.*, 2003) in each country. The fit statistics of the models were poor in all countries, indicating that a single factor did not explain an overly large percentage (i.e. > 40 per cent) of the variance in the items, and CMB was not a threat to the study constructs. However, we also added a single unmeasured latent method factor directly to the CFA (Podsakoff *et al.*, 2003) in all countries as the Harman test is generally regarded as the lower bound of the likelihood of CMB and to control for the systematic measurement error on the relationships between the latent constructs. Comparing the models with and without the unmeasured latent factor controlled for the portion of variance attributable to obtaining measures from the same source (Bagozzi, 2011). Thus, after inclusion of the unmeasured latent factor, the manifest indicators were allowed to load on their respective theoretical constructs, as well as on the unmeasured latent factor. The results show that all item loadings remained significant after inclusion of the unmeasured latent method factor. In summary, it is unlikely that the study results are affected by CMB.

4.3 Measurement invariance

When setting down our research design, special attention was given to achieving instrumentation, calibration and translation invariance across all four research contexts.

Our instrument had instrumentation invariance since all items used across all four countries had identical content (Cavusgil and Das, 1997). To assure calibration invariance, we used the same seven-point scales across all four countries. When considering translation invariance, we developed the questionnaire in the English language first and then translated it into the (four) languages of the countries where the research was conducted. In the first step of this iterative translation process, the items of each scale were double-blind translated into the local language and back into the original (English) version. Next, a group of four multilingual marketing scholars per each country carefully inspected the items in order to eliminate items with limited conceptual equivalence and ensure that literal language translation was avoided.

As we collected data through cross-national research, we needed to prove that our measures were measuring the same underlying constructs across all countries. Therefore, in order to achieve transferability of our model and to establish generalisability, we tested the instrument for measurement invariance.

Having in mind that sample sizes in all four countries were limited (from 71 in Serbia to 118 in Montenegro), following the practice advanced in the recent international research (e.g. Hohenberg and Homburg, 2015), we created two groups, each made of two countries that share a similar historic and economic background (Tellis *et al.*, 2009, p. 18), as well as the same borders. We grouped sample from Montenegro with sample from Albania (obtaining sample size of 180), and Bosnia and Herzegovina with Serbia (sample size 225). Furthermore, following Steenkamp and Baumgartner (1998), we performed a hierarchical test for configural, metric and factor variance invariance between two groups. The results are presented in Table III.

Configural invariance was satisfied, as the basic model structure was invariant across the groups. Having achieved configural invariance, we tested for metric invariance, which examines whether the respondents understood the items in the same way. Therefore, we constrained the factor loadings to be equal across both groups. The χ^2 difference test between configural and metric invariance model was insignificant ($\Delta\chi^2(\Delta df) = 14.73(10)$; $p > 0.01$) supporting metric invariance. Finally, factor variance invariance was examined by constraining all factor variances to be equal across groups. Again, χ^2 difference between metric invariance and scalar invariance is observed ($\Delta\chi^2(\Delta df) = 22.73(10)$; $p > 0.01$) as insignificant. Our results confirmed existence of configural, metric and factor variance invariance across all samples, which by Steenkamp and Baumgartner (1998) implies that our items are equally reliable meaning that the measures can be used for hypotheses testing. Thus, we merged our data sets and performed an additional CFA analysis on the merged data set (see Tables IV and V).

4.4 Hypotheses testing

We tested our hypotheses using the maximum likelihood estimation method in covariance-based structural equation modelling (using LISREL 8.7). To ensure model parsimony, we followed recommended procedures (Aiken and West 1991) and estimated three nested models (see Table VI). In Model 1, we first test the relationships related to the international expansion by estimating only linear latent variables, both control and independent. In Model 2, we added quadratic variables. Following a traditional product-term approach,

Models testing	χ^2 (df)	$\Delta\chi^2$ (Δdf)	RMSEA	CAIC	NNFI	CFI
Configural invariance	417.08 (148)		0.094	1,038.293	0.922	0.936
Metric invariance	431.81 (158)	14.73 (10)	0.093	992.125	0.923	0.933
Factor variance invariance	454.12 (162)	22.31 (10)	0.095	986.418	0.921	0.930

Table III.
Evaluating cross-country invariance of measures

we created a multiplicative product terms and entered them to the structural equations in Model 2. Therefore, we created product terms from aggregated scores of all three constructs following Ping (1995) to reduce model complexity. As the presence of product quadratic terms may cause issues associated with multicollinearity in model testing, we followed Little *et al.*'s (2006) procedure and orthogonalised all the quadratic terms. Finally, in Model 3, we added the second criterion variable, firm performance.

By comparing χ^2 difference between Models 3, 2 and 1, it was evident that a decrease in χ^2 (Model 2 to Model 1 $\Delta\chi^2(3) = 41.4$ and Model 3 to Model 2 $\Delta\chi^2(3) = 10.51$) is significant. Moreover, fit indices in Table VI show that Model 3 (which is the higher-order nested model)

Construct	Mean	SD	CR	1	2	3	4	5	6
1. Product innovation	5.73	1.00	0.82	<i>0.61</i>	0.008	0.158	0.036	0.063	0.000
2. Organisational innovation	4.06	1.32	0.86	0.087	<i>0.55</i>	0.117	0.094	0.014	0.002
3. Marketing innovation	5.11	1.42	0.66	0.397	0.342	<i>0.50</i>	0.163	0.002	0.000
4. Firm performance	4.58	1.38	0.92	0.191	0.306	0.404	<i>0.74</i>	0.036	0.000
5. International expansion	2.55	2.16	<i>N/A</i>	0.250	0.120	0.045	0.190	<i>N/A</i>	0.001
6. Export experience	9.30	3.90	<i>N/A</i>	-0.004	-0.044	-0.004	-0.022	0.038	<i>N/A</i>

Notes: CR, composite reliability. Correlation matrix is given below diagonal, squared correlations above diagonal while AVE values are given on diagonal in italic

Items	SE	t-value
<i>Product innovation (Škerlavaj et al., 2010)</i>		
We constantly emphasise development of particular products and services	0.827	–
We continuously modify design of our products and services and rapidly enter new markets	0.685	13.28
Our firm manages to deliver special products/services flexibly according to customers' orders	0.822	14.82
<i>Organisational innovation (Vaccaro et al., 2012)</i>		
Rules and procedures within our organisation are regularly renewed	0.705	–
We regularly make changes in our employees' tasks and functions	0.732	13.19
Our organisation regularly implements new management systems	0.801	14.22
The policy with regard to compensation has been changed in the last three years	0.707	12.78
The intra- and inter-departmental communication structure within our organisation is regularly restructured	0.750	13.48
<i>Marketing innovation (Škerlavaj et al., 2010)</i>		
Development of new channels for products and services offered by our corporation is an on-going process	0.704	–
In marketing innovations (entering new markets, new pricing methods, new distribution methods, etc.) our company is better than competitors	0.704	7.68
<i>Firm performance (Auh and Merlo, 2012)</i>		
Market share (compared to the most direct competitor)	0.795	–
Revenues (compared to the most direct competitor)	0.972	23.47
Profit (compared to the most direct competitor)	0.878	21.89
Cash flow (compared to the most direct competitor)	0.785	17.88
<i>International expansion</i>		
Geographic market coverage	0.840	–
<i>Export experience</i>		
Years exporting	0.845	–

Table V. Merged sample: CFA results
Notes: CFA Fit: $\chi^2 = 299.63$; df = 91; RMSEA = 0.075; NNFI = 0.930; SRMR = 0.046, CFI = 0.947

	Model 1		Model 2		Model 3	
	β	<i>t</i> -value	β	<i>t</i> -value	β	<i>t</i> -value
<i>Control effects</i>						
Export experience → international expansion	0.04	0.57	0.05	0.80	0.06	0.88
Export experience → firm performance					-0.06	-0.94
<i>Linear effects</i>						
H4 International expansion → firm performance					0.22**	3.64
Product innovation → international expansion	0.27**	3.98	0.23**	3.59	0.24**	3.72
Organisational innovation → international expansion	0.11*	1.75	0.11*	1.76	0.13**	2.08
Marketing innovation → international expansion	-0.03	-0.48	-0.05	-0.85	-0.03	-0.63
<i>Curvilinear effects</i>						
H1 Product innovation squared → international expansion			0.15**	2.63	0.15**	2.70
H2 Organisational innovation squared → international expansion			0.28**	4.76	0.28**	4.78
H3 Marketing innovation squared → international expansion			-0.12**	-2.19	-0.12**	-2.13
$R^2_{\text{Performance}}/R^2_{\text{International expansion}}$	0.08		0.21		0.22/0.05	
$\chi^2(\text{df})$	413.56 (132)		372.16 (129)	361.65 (127)		
$\Delta\chi^2(\Delta\text{df})$	–		41.4 (3)	10.51 (3)		
RMSEA	0.073		0.068		0.068	
NNFI	0.91		0.92		0.92	
CFI	0.93		0.94		0.94	
GFI	0.90		0.91		0.92	
SRMR	0.10		0.09		0.08	

Notes: Critical *t*-values are 1.645 and 2.325 for $\alpha = 0.05$ and $\alpha = 0.01$, respectively. * $p < 0.05$; ** $p < 0.01$

Table VI.
SEM results

returned a superior model fit compared to Models 2 and 1 ($\chi^2 = 361.65$; $\text{df} = 127$; $\text{RMSEA} = 0.068$; $\text{NNFI} = 0.92$; $\text{CFI} = 0.94$). As such, we relied on Model 3 to interpret our hypotheses.

The study argues in *H1-H3* that product innovation, organisational innovation and marketing innovation are related to international expansion in a J-shaped manner. The findings reported in Table VI confirm *H1* and *H2*, suggesting a significant quadratic relationship between product innovation and international expansion ($\beta = 0.15$; $t = 2.70$; $p < 0.01$) and organisational innovation and international expansion ($\beta = 0.28$; $t = 4.78$; $p < 0.01$). In both cases, we found an association of the positive quadratic terms with the positive linear terms.

Contrary to our expectations, we found a significant, inverted U-shaped effect of marketing innovation on international expansion ($\beta = -0.12$; $t = -2.13$; $p < 0.10$). Hence, we reject *H3*. This result implies that the initiation phase of marketing innovation has positive effects on the international expansion, while additional efforts on marketing activities are associated with diminishing returns in terms of international scope.

In order to obtain better insights into our curvilinear relationships and to help interpretation of the influence of innovativeness on international expansion, we are presenting plots (see Figures 2-4) made by using the graphing method by Aiken and West (1991).

Based on plots in Figures 2 and 3 (square terms for our product innovation and organisational innovation were both positive and significant), a J-shaped relationship is indicated. This suggests that low levels of product and organisational innovation will correspond almost insignificant levels of internationalisation. The situation will be no different at medium levels of innovation, while only further improvements in both the

Figure 2.
Curvilinear effect of
product innovation on
international
expansion

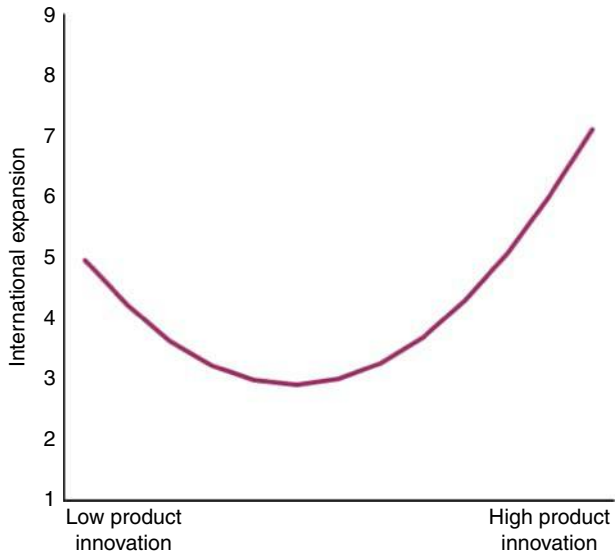
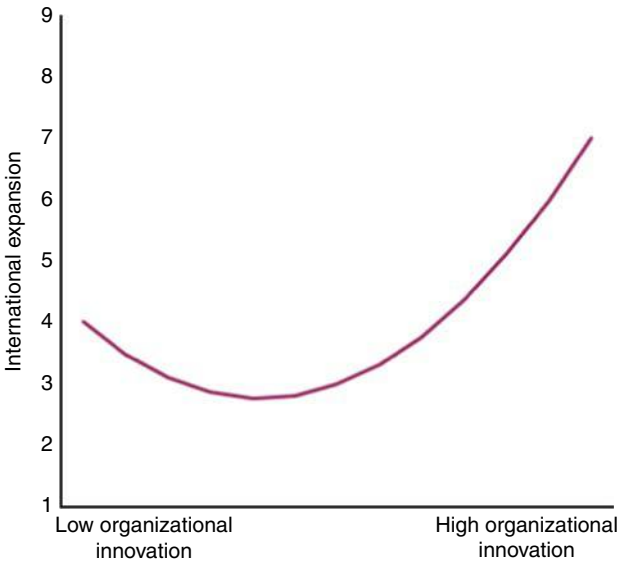


Figure 3.
Curvilinear effect of
organisational
innovation on
international
expansion



levels will lead to significant international expansion. Controversially, our results suggest that marketing innovation does not behave in the same manner as product and organisational innovation. Plot in Figure 4 suggests the existence of declining returns between marketing innovation and international expansion. Thus, contrary to our expectations and to our third research hypothesis as well, marketing innovation immediately triggers the international expansion of the firm, while the effects start to get eroded at higher levels of marketing innovation.

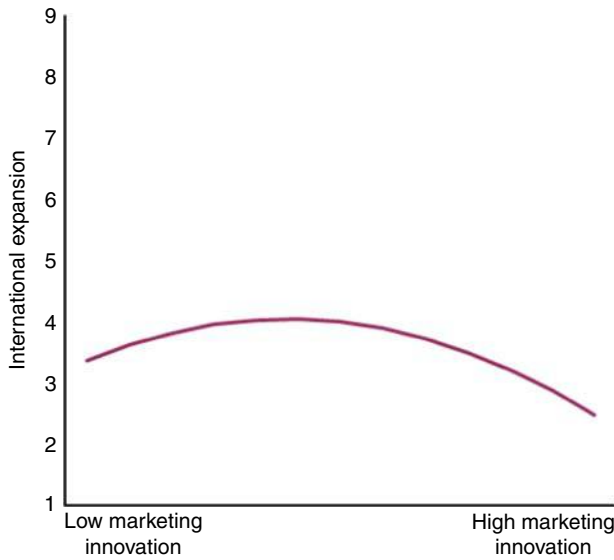


Figure 4.
Curvilinear effect of
marketing innovation
on international
expansion

5. Discussion and conclusion

In this paper, we challenge the applicability of the conventional wisdom that innovativeness has a positive, linear effect of on international expansion (Kleinschmidt and Cooper, 1988; Cavusgil and Kirpalani, 1993; Cassiman and Golovko, 2011) in the DC context. This paper's main contribution to the theoretical discussion is to unveil the non-linear link between innovativeness and international expansion in firms based in DCs, especially in the SEE region.

By confirming that product innovation and organisational innovation are linked with international expansion in a J-shaped relationship, we support the view that, in the DC context, specificities exist in how the firm's resources and capabilities support the process of international expansion (Contractor *et al.*, 2007). In particular, a two-phase approach can be observed (Kleinschmidt and Cooper, 1988). In the first phase, the development of product innovation and organisational innovation capabilities helps fill the initial gap resulting from the many liabilities suffered by DC firms. However, in the second phase, the firm can finally exploit all the supporting potential of its capabilities for international expansion. Finally, we can conclude that the level of international expansion increases more rapidly when firms have high levels of product and organisational innovation.

Indeed, our findings do not support similar arguments in the case of marketing innovation capabilities. To the contrary, our findings indicate an inverted U-shaped relationship between marketing innovation and internationalisation. Thus, the initial positive effects are counterbalanced by decreasing returns at higher levels of marketing innovation. In other words, excessive efforts at new marketing activities do not guarantee additional benefits in the firm's international expansion. It is interesting, though not easy, to speculate why this happens. Some marketing innovation seems to help DC-based firms grab the attention of clients in new markets, but after the initial trigger, the effect ceases. A possible reason is that, if marketing innovation is not adequately supported by other dimensions of international expansion, such as product quality, product reliability and support services, clients call the bluff sooner or later. Another possible and

complementary explanation is that marketing innovation can help DC-based firms appear out of nowhere, but they need more to build the solid market reputation necessary to establish a firm in new markets.

Regarding the relationship between internationalisation and performance, our results fully support the findings of a study by Singh and Gaur (2013) that, unlike what happens in more advanced markets, DC-based firms benefit in a quite straightforward way from their processes of international expansion. Turning to managerial implications, our paper offers relevant insights for the export managers of DC firms. Our evidence suggests that managers must be aware that the initial investments in product and organisational innovation might not pay off immediately in the firm's international expansion. However, the lack of effects is only preliminary, and positive results can be achieved by persevering in both efforts. Regarding marketing innovation, our results suggest that managers should perform the opposite behaviour: they should take advantage of the immediate benefits of marketing innovation (new distribution channels, market positioning, pricing methods and communication strategies) for the firm's international expansion while staying aware that such efforts will show decreasing returns in the medium term and probably will need support from proper actions in product and organisational innovation.

This study has certain limitations. Although it was conducted in an under-researched, multi-country setting, it focused on a homogenous group of related but distinct DCs from the SEE region that share a common history, culture and institutional features. Our findings would benefit from further validation based on another group of DCs with different historical, cultural and institutional backgrounds than the SEE countries that we selected (e.g. Asian DCs). This would control for the contingency effect of context-specific factors, such as environment turbulence, market structure and competitive dynamics.

As well, the inverse U-shaped relationship of marketing innovation with international expansion should be further verified and examined. Additional aspects of internationalisation could also be considered, including export intensity, internationalisation modes and the number of foreign markets reached. According to our study, different forms of innovations are necessary for internationalisation and higher firm performance; therefore, it is important that managers know how they can increase innovation activities beyond the minimum level that returns positive outcomes for internationalisation and firm performance. Accordingly, we call for additional research to examine the antecedents and drivers of innovativeness in DC-based firms. Furthermore, this study uses cross-sectional data. Future studies should obtain longitudinal data and examine whether the effects persist over time.

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