

Learning in International New Ventures: A systematic review

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Learning in International New Ventures: A systematic review

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Abstract

The present paper reports the findings of a systematic review on learning among International New Ventures (INVs). Learning has been studied fairly extensively by scholars in the field of organization theory. Learning is a prerequisite for internationalization, and the behavior of individuals working in INVs seems to indicate a strong predisposition or aptness to learning. In spite of this, research on learning among INVs has been limited and fragmented up to the present time. In seeking to advance the research niche of INV learning, we conducted a systematic review of articles published on learning within INVs. Our contributions are related to: (i) providing a review of current knowledge of learning among INVs; (ii) relating the findings of our review to the organizational learning theory proposed by March (1991); and (iii) a future research agenda.

Highlights

- We report a systematic review of 50 empirical articles discussing learning in INVs.
- We relate our findings to the organizational learning theory proposed by March (1991).
- We discuss methodological choices that may advance our understanding of INV learning.

Keywords:

International Entrepreneurship, International New Ventures, Born Globals, Learning, Organizational Learning, Systematic Review

1 Introduction

In the field of International Entrepreneurship (IE), considerable attention has been given to the internationalization of small ventures (see e.g. McDougall-Covin, Jones & Serapio, 2014). The present paper is located within the IE field, with a focus on companies that internationalize from their inception, generally referred to as *International New Ventures* (INVs) (Oviatt & McDougall, 1994), or *Born Globals* (BGs) (Knight & Cavusgil, 2004). For clarity, we shall refer to all the rapidly internationalizing new ventures as INVs in this article.

Learning is an important prerequisite for the successful internationalization of any organization (Johanson & Vahlne, 2009), and it constitutes one of the main advantages possessed by INVs, helping them to maintain growth after the firm is established (Autio, Sapienza & Almeida, 2000; Hagen & Zucchella, 2014). INVs have specific features in relation to learning: their strong knowledge base assists both in their emergence and in their rapid internationalization (Autio, George & Alexy, 2011; De Clercq, Sapienza, Yavuz & Zhou, 2012; Oviatt & McDougall, 1994; Sui & Baum, 2014). However, a prior knowledge base is not in itself a sufficient condition to advance rapid internationalization (Zheng, Khavul & Crockett, 2012). The most significant factor is that *entrepreneurs should be ready to acquire and adopt new information as soon as they step into global markets* (Prashantham & Floyd, 2012). Our contribution is related to clarifying the state of the art of INV learning, seeking thus to advance the development of the field. We conducted a systematic review (Tranfield, Denyer & Smart, 2003) of a set of 50 articles, seeking to answer the following questions:

1. What do we know about learning in international new ventures?
2. How have learning theories been applied in research on early and rapid internationalization?

Our review constitutes an in-depth analysis of what is known about learning in INVs. Thus, it aims to provide insights concerning the features contributing to learning in INVs, and further, to address the methodological issues arising in the articles reviewed. Overall, we seek to offer a comprehensive overview of what is known about learning in INVs, and to suggest areas for future research.

As distinct from the review by De Clercq et al. (2012), who focused on how learning functions within the first years of internationalization (giving attention to the outcomes of early internationalization rather than to learning *per se*), we focus on the actual learning processes of INVs over their entire life cycle. We also seek to probe more deeply into the theories and methodologies applied in articles on INV learning. Most importantly, we relate our findings to March's (1991) *organizational learning theory* (henceforth OL theory). A major aspect of this theory is the tradeoff (essential for INVs) between exploitative and explorative learning. This will be discussed in more detail below.

Our review is structured as follows. First, we present the most important theoretical insights related to INVs, learning, and OL literature. Second, we present the methodology used in the review. We then move to the results, including descriptive and empirical analyses of the articles reviewed. Finally, we discuss the findings of the review, relating them to March's (1991) OL Theory, and suggesting future research directions.

2 Literature Review

2.1 Organizational Learning

2.1.1 Organizational learning according to March (1991)

Learning has constituted an element in organizational studies for over four decades (Yu-Lin & Ellinger, 2011, p. 514), but in recent years, the organizational learning (OL) theory proposed

by March (1991) has formed a notable point of departure for discussion in the field. OL Theory has several implications for learning in a firm. According to March (1991), the main strategic choice to be made by an organization is whether to explore new possibilities (*exploration*) or to exploit old ones (*exploitation*). These two types of adaptations vary by their features and expected outcomes. Exploration has been described as search, variation, risk-taking, experimentation, play, flexibility, discovery, and innovation. In essence, its function is to experiment with new alternatives. The flip side of exploration is that its returns are uncertain, and may well be negative for the company. Exploitation is manifested more in terms of refinement, choice, production, efficiency, selection, implementation, and execution. It refines and extends existing competence, technologies, and paradigms. In the best case, the returns on exploitation are positive, proximate, and predictable (March, 1991).

According to March (1991) the trade-off between exploration and exploitation depends on two features: (i) *mutual learning* within the organization, and (ii) the external *competition intensity* that it faces. Mutual learning takes place in the interaction between individual knowledge and the organizational code (procedures, rules, and forms). The way that mutual learning affects the trade-off depends on how much the organization emphasizes individual knowledge as a source of learning, and how receptive employees are to new information. External competition steers the trade-off via competitive positioning. Explorative and exploitative learning are applied as alternatives; thus, one may consolidate one's market position (exploitative learning), or else improve it e.g. by adopting new technologies or improving the current functions of the organization (explorative learning) (March, 1991).

2.1.2 Other organizational learning Studies

Although the work of March (1991) has been influential in the field of organizational learning, other scholars, too, have made important contributions. Thus, Barkema and Vermeulen (1998) discuss the role of external influence on organizational learning, through discussion of how international expansion promotes learning in firms. Expansion exposes organizations to multinational and multiproduct diversity, which requires information on consumer need, competition, suppliers, and partners. Hence, this diversity offers opportunities for learning and for strengthening technological capabilities. However, firms can only benefit from it to a certain point. At this point they encounter the cognitive constraints of the organization. In general, international expansion and organizational growth make it harder for independent business units to share information with each other, with a consequent decline in learning.

According to Cohen and Levinthal (1990), innovative capabilities (termed *absorptive capacity*) determine an organization's ability to recognize the value of external information and to apply it commercially. One central element of the absorptive capacity is the organization's existing knowledge base. This means that prior knowledge determines how effectively an organization can recognize and evaluate external information. For example, if the technology in question is closely related to prior knowledge, it makes it easier for the organization to spot the demand and the financial benefits of the innovation (Cohen & Levinthal, 1990).

Crossan, Maurer, and White (2011) suggest that learning is a multidimensional event, within which individual, group, and organizational levels are interconnected by a knowledge transfer process (Crossan et al., 2011). According to Crossan, Lane, and White (1999), organizations need to find a balance between choices. This will involve either acquiring new knowledge (a "feedforward" process) or else applying knowledge acquired previously (a "feedback" process). The feedforward process offers new ideas from the individual level to the organizational level, whereas the feedback process distributes what has been learned from the organizational level downwards. How the information transfers through these different levels depends on four processes (termed the "4I's"), comprising *intuiting*, *interpreting*, *integrating*, and *institutionalizing* (Dutta & Crossan, 2005). We can summarize Dutta and Crossan's model

as follows: *intuiting* is an individual’s ability to discover and fulfill business opportunities, *interpreting* occurs when entrepreneurs share business opportunities with network members, *integrating* happens when the learning process becomes a collective action, and *institutionalizing* is the overall learning process of all the actors involved in the organization (Dutta & Crossan, 2005).

3 Methodology

In the present study, we began by identifying relevant keywords (Tranfield et al., 2003), and by conducting searches in several databases. We used different combinations of the terms *international new venture*, *born global*, *born-global*, *micro-multinationals*, *global startup*, *early internationalization*, *early internationalisation*, *learning*, *organizational learning*, *organisational learning*, *knowledge*, and *experience* (see Rialp, Rialp & Knight, 2005) to identify titles, abstracts, keywords, and full texts in the following databases: *ABI/INFORM*, *Business Source Elite (EBSCO)*, *Emerald*, *JSTOR*, *SAGE Journals Online*, *Science Direct (Elsevier)*, *Springerlink*, *SCOPUS*. We included articles that were published between the years 1994 and 2017.

Articles from all academic fields were candidates for inclusion, given the breadth of INV-related research. In the event, the articles were published in journals in the fields of *international business*, *marketing*, *entrepreneurship*, *management*, *international entrepreneurship*, and *strategy* (see Appendix A). However, to be included in the review, the study had to comprise a full text, to appear in a peer-reviewed academic journal, and to be published in English. The initial inclusion criteria yielded a total of 386 articles. We excluded articles that (i) did not investigate new or early internationalizing ventures, (ii) applied serial or portfolio entrepreneurs as a data source, (iii) were not empirical studies, or (iv) did not have any learning-related outcomes in them. We ended up with 50 articles. The process of categorizing the articles is summarized in Table 1 below. The articles included in the review can be found in Appendix D.

Table 1

Examples of categorization.

COMPETENCIES	DYNAMICS
<ul style="list-style-type: none"> • The innovative nature of BGs develops knowledge in the firm (Knight & Cavusgil, 2004) • BGs differ from other firms via a more aggressive learning style: active engagement and experimentation, tolerating failure, instantly solving problems as they arise (Chetty & Campbell-Hunt, 2004) • Prior international experience shapes learning (Yeoh, 2004) 	<ul style="list-style-type: none"> • Early internationalization is positively related to learning (Kumar, 2013) • Learning priorities change during the different phases of internationalization (Anderson, Graham & Lawrence, 1998) • Setbacks are an inevitable part of the internationalization process, providing valuable learning opportunities for INVs (Bunz, Casulli, Jones & Bausch, 2017)
NETWORKS	ENVIRONMENT

<ul style="list-style-type: none"> • Different stakeholder interactions lead to the creation of different types of international market knowledge (Fuerst & Zetting, 2015) • Networks influence the learning process of INVs (Evers, Andersson & Hannibal, 2012) 	<ul style="list-style-type: none"> • Deliberate knowledge integration from international operations increases the breadth and speed of learning (Wood, Khavul, Perez-Nordvedt, Prakhya & Dabrowski, 2011) • Competition intensity and internal social interaction increase the international learning effort (De Clercq & Zhou, 2014) • Uncertainty speeds up the learning process (Autio, George & Alexy, 2011)
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4 Findings

The findings of this review are presented in two sections. The first section (the *descriptive analysis*) presents the publication types, the methodology, and the research settings and approaches of the articles. The second part (the *empirical analysis*) offers an account of the state of current knowledge concerning learning in INVs, as revealed in the articles reviewed.

4.1 Descriptive analysis

4.1.1 Methodology and theoretical approaches

We discovered that most of the articles were published in journals in the fields of international business ($n=14$), marketing ($n=10$), and management ($n=10$) (See Appendix A). These were followed by journals in the fields of entrepreneurship ($n=9$), international entrepreneurship ($n=6$), and strategy ($n=1$). Hence, it seems that even though INVs are at the core of International Entrepreneurship research (McDougall-Covin et al., 2014), this is not manifested in the journals devoted to this field, since the articles specifically in this domain constituted only 6 out of the 50 articles reviewed. As discussed below, the multidisciplinary approaches of the articles included represent a very varied sample from different academic fields. The mean academic journal guide rating (ABS/AJG 2018) of the reviewed articles was 2.56. An inspection of the chronology revealed that the mean date of publication was within the first half of the year 2010 (2010.14). The two peak years were 2014 ($n=6$) and 2011 ($n=6$).

Thereafter, we evaluated the extent to which each study was aimed at learning (see Appendix C). The evaluation yielded three different degrees of intention: *direct*, *indirect*, or *no intention* to investigate learning. The largest group ($n=30$) consisted of studies which had no intention of investigating learning at all, or which did not use learning-based frameworks, but which nevertheless offered learning-related findings. The direct category ($n=12$) included articles that either investigated learning itself or used a clearly learning-oriented research setting to investigate new and rapidly internationalizing ventures. We considered the intention to be *indirect* ($n=8$) when learning had more of a mediating role in the research, but provided learning-related outcomes. Overall, one gains the impression that in the INV context, learning-related research has not been a particularly consistent phenomenon.

When we examined the research setting of the articles (See Appendix B), we discovered that a clear majority of the articles used a quantitative approach ($n=26$), with qualitative approaches being fewer in number ($n=20$). There was also a small group of articles ($n=4$) that applied mixed methods. The most popular sample group in the data was that of top management ($n=22$), including CEOs or other executives, followed by a group ($n=13$) that included entrepreneurs and top management team members. The rest of the studies used entrepreneurs ($n=6$) and databases ($n=4$) as data sources. There was also a group of articles ($n=5$) that did not specify their data source. The time frame of the data collection was divided fairly evenly between longitudinal ($n=18$) and cross-sectional ($n=14$) studies; however, most of the studies

($n=18$) did not define the period of data collection or the time frame at all. Most of the articles used a single country setting ($n=38$), while a minority ($n=9$) used cross-country comparisons. These latter were conducted most frequently within the continent of Europe ($n=23$), then Asia ($n=10$), North America ($n=7$), across continents ($n=4$), Oceania ($n=4$), and South America ($n=1$). The industries included in the articles were mainly in the high-technology sector ($n=19$), followed by the multi-industry sector ($n=15$), and the manufacturing sector ($n=10$).

An evaluation of the theoretical standpoints revealed that the clear majority used a combination of international business and international entrepreneurship literature ($n=34$), as exemplified in the article by Chetty and Campbell-Hunt (2004), which specifically states that the article uses both traditional and born-global approaches. In addition, there were a number of articles that used only international entrepreneurship theories ($n=14$). An example of this would be the article of Chandra, Styles, and Wilkinson (2012), which refers to the “lens of international entrepreneurship” as its means of investigating rapidly internationalizing firms. There were also a couple of articles ($n=2$) that did not use either IB or IE literature.

Multiple academic fields entered into our article set, and the fields were often mixed together. The fields consisted of management ($n=35$), marketing ($n=23$), entrepreneurship ($n=22$), strategic management ($n=16$), strategy ($n=13$), economic theories ($n=13$), and sociology ($n=10$). An example of a deliberate mixing of fields can be found in the article by Kungwansupaphan and Siengthai, 2014, p. 561, who state that they draw on “the integration of human capital theory, resource-based view theory, learning theory, and on the literature of international entrepreneurship and strategic management.”

The terminology used by the articles varied significantly. Contrary to what one might expect, the articles directly referring to INVs ($n=13$) and BGs ($n=8$) were in the minority. These were clearly outnumbered by a mixed group ($n=29$), comprising 17 different terms in total (See Appendix B).

4.1.2 Knowledge and learning premises

Examination of the learning theories revealed that nearly all ($n=42$) of the articles applied purely OL theory (See Appendix C). The most popular OL theories applied were from the works by Cohen & Levinthal 1990 ($n=28$) and Barkema & Vermeulen (1998) ($n=28$). These were followed by Huber (1991) ($n=21$), Cyert & March (1963) ($n=15$), March & Simon (1958) ($n=14$), Argyris & Schön (1978) ($n=10$), Nonaka (1991, 1994, 1996) ($n=9$), and March (1991) ($n=7$). The remaining articles applied entrepreneurial learning ($n=2$) or a combination of OL theory plus entrepreneurial learning ($n=1$) and social learning theory ($n=1$), or did not apply learning theories at all ($n=3$). Furthermore, there were four major concepts applied in defining learning. The first and most popular view ($n=22$) took learning to be about developing new knowledge, in the manner of Hessels and Stel (2011, p. 258), who referred to learning in terms of “the acquisition, assimilation, and exploitation of new knowledge,” and as “a base upon which further knowledge and innovations can be developed.”

In the second most popular ($n=14$) group, learning was linked to the development of the capabilities of the firm and its members, or to a reduction in the challenges faced during internationalization. Along these lines, Zhou, Barnes, and Lu (2010, p. 886) refer to the “entrepreneurial dynamics of learning as a driving factor for capability upgrading.”

The third group ($n=7$), conceived internationalization itself as a learning process, in the sense that firms learn during their internationalization process. Thus, Yeoh (2004, pp. 512–513) takes the view that “internationalization via geographic diversification can be viewed as a process of learning and knowledge accumulation which in turns influences firm performance.”

In the fourth group ($n=7$), prior knowledge or experience were regarded as the main contributors to learning. Sardana and Scott-Kemmis (2010, p. 442) make this point in defining

entrepreneurial learning as “the process by which entrepreneurs develop skill and competency through experience and vicarious experience.”

The final unit of the descriptive analysis was related to determining the type of knowledge that was found to contribute to the learning process of an INV. Here, there was considerable variety in the types of knowledge, information, and experiences involved. The various aspects were often covered simultaneously, but the clearly dominant category of knowledge was identifiable as internationally related ($n=34$). The next three categories were market-based knowledge ($n=21$), technologically-based knowledge ($n=17$), and industry-based knowledge ($n=10$). There was also a group ($n=10$) that could not be put into any of these categories, and a couple ($n=2$) that acknowledged customer-specific knowledge as important.

4.2 Categorization

From an analysis of the reviewed articles in terms of features influencing learning we identified four main elements that contributed to learning in INVs (See Appendix C). These were, in order of magnitude, *competencies* ($n=23$), *dynamics* ($n=20$), *networks* ($n=10$), and *the learning environment* ($n=10$). In first group (competencies), learning was influenced by a particular characteristic or experience, along the lines pointed out by Voudouris, Dimitratos, and Salavou (2011, p. 248), who referred to the “technological, industrial and international learning orientations” linked to a firm’s learning. In the second group (dynamics), the findings related to how learning changes over time, or how learning takes place at different levels, as in the study by Pellegrino and McNaughton (2015, p. 469) in which “the firms’ learning evolved as they internationalized.” The results of the third group (networks) addressed the impact of networks on learning. An example of this occurs in the research of Evers, Andersson, and Hannibal (2012, p. 48), who refer to instances in which “different stakeholder groups (allied, cooperative, neutral, and entrepreneur) influence the learning processes.” The fourth and the final group (concerning the learning environment) addressed the external influences on learning, including the competition intensity, the scale of internationalization, the home and target market conditions, and the cultural diversity within the firm. Here, one can quote from Yeoh (2004, p. 528), who concluded that “exposure to foreign markets enhances the potential for learning.” Below, we examine in more detail the findings for each thematic group.

4.2.1 Competencies related to learning

The individual competencies affecting learning consisted of three different sub-categories, namely, *orientations* ($n=10$), *skills* ($n=9$), and *experiences* ($n=4$). With regard to the first (orientations), it was found (i) that an entrepreneurial orientation is positively associated with the learning effort (Sapienza, De Clercq & Sandberg, 2005), and (ii) that entrepreneurial behavior supports the potential of the learning advantage of newness through the acquisition of network- and market-related knowledge (Zhou, et al., 2010). In addition, the following findings were obtained: (iii) industrial, technological, and international learning orientations promote entrepreneurial learning (Voudouris et al., 2011); (iv), the innovativeness of the firm develops knowledge (Knight & Cavusgil, 2004); (v) a high-technology orientation contributes to innovation, and high advertising intensity promotes greater learning (Nadkarni & Perez, 2007); (vi) internationally-oriented practices enhance the learning advantage of newness (Oxtorp, 2014); (vii) the innovative and proactive pursuit of opportunities produces foreign market-based knowledge in INVs (Zhou, 2007); (viii) a service-orientation enhances organizational learning and provides improved access to customer- and network-based knowledge (Laudien & Daxböck, 2017). However, (x) (experiential) learning is not an automatic process but requires deliberate practices from the INV in question (Bunz, Casulli, Jones & Bausch, 2017). Moreover, (xi) the degree of learning was regarded as a strategic selection; hence, INVs must

be cautious, given that a high learning orientation and international expansion consume (already limited) resources, and INVs cannot implement both at the same time. A high learning orientation will thus tend to decrease the scale and scope of internationalization and increase the firm's focus on serving particular markets – a point made also by Baum, Schwens, and Kabst (2011, p. 323), who note that “learning binds resources just as international expansion does.”

The skills which were found to contribute to learning were (i) entrepreneurial- and managerial competence (Kungwansupaphan & Siengthai, 2014), (ii) marketing, internal, and network learning capabilities (Weerawardena et al., 2014), and (iii) international entrepreneurial capability (Zhang, Tansuhaj & McCullough, 2009). In addition, there were certain specific skills that were found to support learning in INVs, namely, (iv) the creation of international business opportunities (Kauppinen & Juho, 2012), (v) an active learning style, including tolerance of failure and proactive problem-solving (Chetty & Campbell-Hunt, 2004), and (vi) trust building (Vanninen, Kuivalainen & Ciravegna, 2017).

It was further argued (vi) that as firms learn, they start to develop knowledge of internal processes, which helps them to better adapt to the environment in which they operate (Autio et al., 2011). In addition, (vii) organizational flexibility (Autio et al., 2000) and the cognitive and political flexibilities of the firm (De Clercq, Sapienza & Zhou, 2014) were found to enhance learning in INVs.

The last of the three sub-categories of individual competency (see above) was prior experience. Here, the results were contradictory. Some of the articles found international experience to be an important pre-condition for learning in INVs (Park & Rhee, 2012), and one that also shaped how they learned (Yeoh, 2004). However, not all the articles agreed on the utility of experience. Thus, it was found, for example, that learning from direct experience restrained the early internationalization of the organizations in question (Schwens & Kabst, 2009b). There were also indications that it is not the abundance of experience that guides the learning in INVs, but rather the lack of it. In a study by Sardana and Scott-Kemmis (2010), individual entrepreneurs were found to learn more if there was some “experience gap” or vacuum in their personal knowledge or expertise. Moreover, the team learnt most in cases where there was variation in the skills of the group.

4.2.2 The dynamics of learning

As regards the *dynamics of learning*, it was generally found that the timing of a firm's internationalization affects its learning. However, the results were conflicting. Some articles found that early internationalization was positively related to learning (Kumar, 2013) and to the firm's capability to absorb foreign market knowledge (Ripollés, Blesa & Monferrer, 2012); also, that the longer the firm operated in domestic markets, the less internationalization-related knowledge it possessed (Blomstermo, Eriksson & Sharma, 2004). Moreover, Chandra (2017) concluded that survival and learning are the features uppermost when entrepreneurs evaluate the international opportunities during the early stages. However, there were also findings indicating that INVs have neither the time (Almodóvar & Rugman, 2014) nor the resources (Baum, Schwens & Kabst, 2015) to learn in their early phase; thus, learning from others and imitating are the best practices in the early phases of internationalization (Schwens & Kabst, 2009b). Overall, it was difficult to reach a firm conclusion on the basis of the articles reviewed.

In addition, internationalization was itself described as a long-term learning process (Boter, 2003), such that the learning requirements seem to change over time (Anderson, Graham & Lawrence, 1998). However, there were two schools of thought on the order in which learning was likely to take place. The first of these suggested that the most effective means of learning is initially to exploit managerial experience and then to start interpreting market signals (Ruokonen & Saarenketo, 2009). Thus, in the first phase, INVs need their own or a partner's

experience. In the second phase, they start to learn from partners or clients, while in the third phase, they start to leverage the acquired knowledge (Gabrielsson, Kirpalani, Dimitratos, Solberg & Zucchella, 2008). Similarly, it was found that during the first phase of internationalization firms rely on congenital learning (Fuerst & Zettinig, 2015) and experiential learning (Pellegrino & Mcnaughton, 2015), before they start to scan their environment, at which point they observe successful examples and employ external members to increase their knowledge base:

The second school of thought relied on findings contrary to those above. Thus, Gabrielsson and Gabrielsson (2013, p. 1370) found that “opportunity creation and explorative learning were most important in the early phases while, opportunity discovery and exploitative learning became more important in latter phases.” Similarly, Zou and Ghauri (2010) found that INVs seem to augment their knowledge base in the early phases of internationalization. At present, the issue remains open.

The findings related to the dynamics of learning also highlighted the role of misfortune. Setbacks are an unavoidable part of learning in INVs, and are considered as valuable sources of learning for these firms (Bunz et al., 2017). These are particularly emphasized in the early stage of internationalization (Chandra, 2017). Hence, it seems that entrepreneurs apply “trial-and-error” and “learn by doing” types of learning during the first years of activities, and start to transform their capabilities into organizational knowledge when moving to the post-entry stage (Romanello & Chiarvesio, 2017).

Finally, regarding the *multidimensionality* of learning, Voudouris et al. (2011) found learning to be a multidimensional process that spanned from the individual level all the way to the entire organization. However, Shrader, Oviatt, and McDougall (2000) found the role of the entrepreneurial team to be more important in exploiting the foreign market knowledge than the organization. This was supported in a study by Kauppinen & Juho (2012), in which the researchers described learning in INVs as a social process. In the researchers’ view, the initial stage is particularly important, since within it the “imaginative power of becoming something other than a person among others” creates international business opportunities.

4.2.3 Networks

As regards *networks* within INV learning, the learning of the firms took place with partner firms ($n=6$), customers ($n=4$), personal contacts ($n=2$), outside institutions ($n=2$), supply chain members ($n=1$), and international networks in general ($n=1$). It thus appears that INVs use networks in a fairly versatile manner to support their learning. Networks appeared to impact on learning in two ways. They either contributed to the knowledge acquisition and information flow of an INV or affected its learning processes in some other way. In the first case, networks allowed firms to gain knowledge that was useful for internationalization (Park & Rhee, 2012). Networks provided foreign market knowledge (Presutti, Boari & Fratocchi, 2007), international market knowledge (Fuerst & Zettinig, 2015), information, opportunities, and internationalization paths (Chandra et al., 2012), technological and market knowledge (Yu, Gilbert & Oviatt, 2011), or access to the knowledge base of the network member itself (Schwens & Kabst, 2009a).

In the second case, networks were found to influence learning related to marketing, partner, and market capabilities (Evers et al., 2012). They accelerated the pace of the learning (Gabrielsson et al., 2008) and supported the learning processes in INVs (Khavul, Peterson, Mullens & Rasheed, 2010; Zou & Ghauri, 2010).

4.2.4 The learning environment

Environmental features were related to multiple aspects on learning in INVs. Overall, it was found that the integration of international operations increased the breadth and speed of learning

(Wood, Khavul, Perez-Nordvedt, Prakhya & Dabrowski, 2011). However, the benefits of increased internationalization are not endless, and do not come without a price. Bunz et al. (2017) found that increasing exposure to foreign markets pushed INVs to learn from their experience (Bunz et al., 2017), which implies that internationalization and learning compete for the same resources among INVs. Zahra, Ireland, and Hitt (2000) found that the benefit of international diversity has limits, since at some point international expansion can reduce the speed of technological learning. Similarly, Yeoh (2004) found that although exposure to multiple markets may increase the potential of learning, “over diversification” may decrease technological learning.

In addition, it was found that learning in INVs depends on where they operate, since some countries of origin may provide better access to knowledge and resources than others (Chandra et al., 2012). A further finding was that low perceptions of financial barriers (Baum, Schwens & Kabst, 2013) plus the availability of technologies can increase knowledge intensity among INVs (Hessels & Stel, 2011). With regard to foreign markets, technological and cultural diversity were found to increase technological learning among INVs (Zahra et al., 2000). Overall, as noted by Chandra et al. (2012, p. 95), it appears that “the pace of learning and feedback processes depends in part on a firm’s resources and abilities but also on the context in which it operates.”

In an investigation specifically directed at INVs, it was found that cultural diversity within an INV seems to increase knowledge flow within the organization, but also the risk of conflicting opinions and behavior inside the company, which can impede learning. Thus, Zou and Ghauri (2010, p. 237) found that cultural differences may aid learning, making it easier to gain information and capabilities from foreign firms. However, they also noted that behavior related to traditions may “jeopardize the knowledge learning of new ventures and the internalization of knowledge.”

Finally, the uncertainty and the intensity of competition faced in foreign markets can have effects contrary to what one might expect. Thus, uncertainty within foreign markets was actually found to speed up the learning process by expanding the diversity of organizational processes and by improving the skills to implement necessary processes in markets (Autio et al., 2011). Moreover, it was found that the intensity of competition in international markets pushed firms to renew their knowledge base and hence their learning efforts (De Clercq & Zhou, 2014).

5 Discussion and implications for future research

In this section, we take as our starting point the three dimensions previously mentioned (see Section 4.2), namely *competencies in learning*, *the dynamics of learning*, and *environmental features*. We have used these in arriving at a model (See Figure 1) summarizing the state of the art in understanding INV learning. We shall consider each of these three dimensions, relating them to the OL model proposed by March (1991). From our own findings, related to those of March (1991), we shall present some methodological considerations and future research directions.

	MARCH (1991)	FUTURE RESEARCH
I COMPETENCIES OF LEARNING		
A) Includes innovativeness, failure tolerance and problem-solving	Missing aspect in OL theory by March (1991)	i) Need to acknowledge and investigate entrepreneurial dimension of learning in INVs
B) The decision between exploitative and explorative learning is based on balance between internationalization and learning	Conflicting results: The decision-making of learning Findings: Either learning or international expansions March 1991: Learning decision is based on the expected financial returns	ii) Need to investigate how INVs balance between internationalization and learning
II DYNAMICS OF LEARNING		
A) Learning priorities change over time, conflicting results among the sample -> <i>Exploitative-explorative vs. Explorative-exploitative learning</i>	Research implication: Environmental turbulence affects the ratio between exploitative and explorative learning	i) Need to investigate how learning priorities change over time, e.g. by acknowledging the environmental turbulence
B) The role of misfortune in learning -> <i>Setbacks are significant part of the learning</i>	Missing aspect in OL theory by March (1991)	ii) Need to acknowledge and investigate how the setbacks and failures affect learning in INVs
III ENVIRONMENT		
A) The main environmental feature affecting learning in INVs is internationalization	Missing aspect in OL theory by March (1991)	i) Need to investigate how internationalization affects learning, e.g. observing the balance between market and technological learning
B) Competition intensity pushes INVs to renew their knowledge base and increase their learning efforts	Conflicting results: How competition steers learning Findings: INVs apply only explorative learning March 1991: Both exploitative and explorative learning	ii) Need to investigate how competition intensity affects learning, e.g. to the balance between exploitative and explorative learning
C) Uncertainty speeds up the leaning process	Missing aspect in OL theory by March (1991)	iii) Need to investigate how the faced uncertainty affects learning in INVs

Fig. 1. Model. Relating findings to OL theory by March (1991).

5.1 Competencies in learning

Our analysis (See Figure1) contains features bound up with the *entrepreneurial* aspect of learning, namely innovativeness (Knight & Cavusgil, 2004), plus failure-tolerance and problem-solving behavior (Chetty & Campbell-Hunt, 2004). These are absent from March's (1991) model, and are not particularly well represented in our sample.

March (1991) links uncertainty to *explorative learning* in particular. This type of learning involves experimentation with new alternatives, within which returns are far from certain, and may well be negative for the organization. Nevertheless, the insight that learning would be assessed against financial returns (March, 1991) did not come up in our results. In paying attention to these aspects, future research could investigate how explorative learning is present or absent among INVs. This will involve the tolerance of uncertainty, and the possibilities of risk and failure.

In addition, we found a dissimilarity related to the *trade-off between exploitative and explorative learning*. In March's (1991) model, this trade-off is estimated according to the expected financial returns. However, this was not the case in our sample. We did find one article indicating that INVs seek to achieve a balance between international expansion and learning (Baum et al., 2011). Nevertheless, this was an insight from a single article, and no definitive conclusions can be made from it. Future studies could thus investigate more fully the trade-off between learning and internationalization in INVs.

5.2 The dynamics of learning

The *dynamics* of learning constituted a second feature emerging from our review. Our analysis indicated that learning is a long-term process, with priorities changing over time. However,

there were two perspectives on how this might occur. In one group of articles, learning in INVs starts off as exploitative, after which it becomes explorative (Fuerst & Zettinig, 2015; Gabrielsson et al., 2008; Pellegrino & Mcnaughton, 2015; Ruokonen & Saarenketo, 2009). In another group (two articles), the contrary was true. Thus, explorative learning was seen as the most significant type of learning during the early phase (Gabrielsson & Gabrielsson, 2013; Zou & Ghauri, 2010). Nevertheless, neither of the latter two articles provides an in-depth description of why this might be the case.

March's model (1991) does not cover all the causalities involved, but it provides an interesting perspective. He suggests that the environmental turbulence is one of the key features affecting the balance between exploitative and explorative learning. According to his model, environmental turbulence increases the need for adaptation and decreases the possibility to learn from the experience. Moreover, this effect is emphasized if the knowledge is gained during an early time period. This could be a significant perspective for future research. Overall, one can suggest that future studies could investigate how learning priorities vary over time, and what kinds of features influence this change.

Another issue that arises from our analysis is the role of misfortune, which is absent from March's model. Learning in INVs seems to be full of setbacks, which can be regarded as inevitable, and as significant sources of learning (Bunz et al., 2017). Moreover, it seems that the setbacks are especially present in the early stages of internationalization (Chandra, 2017). This can partly explain why the "trial-and-error" type of learning is emphasized in the early stages (Romanello & Chiarvesio, 2017). More research is required to confirm this insight.

5.3 *The environment*

The last feature emerging from the reviewed articles was *the learning environment*. Our findings indicate that internationalization is the most significant environmental dimension. However, this aspect is absent from March's (1991) model. An article from our review (Wood et al., 2011) found that internationalization increases the breadth and speed of learning. However, the picture appears to be contradictory or nuanced in a number of ways. Firstly, it seems that the more firms internationalize, the more they must rely on their experiential learning (Bunz et al., 2017). Secondly, international diversity may actually decrease the speed of technological learning (Zahra et al., 2000). Moreover, the degree of internationalization may affect the balance between the market and technological learning (Yeoh, 2004). Thus, there are avenues for future research on how the scope of internationalization affects learning in INVs. This could encompass, for example, the relative distributions of technological and market-based learning, or how international expansion affects the speed of learning among INVs.

In addition, our results suggest that the competition intensity (De Clercq & Zhou, 2014) and uncertainty (Autio et al., 2011) can influence learning. There are indications that competition intensity pushes INVs to renew their knowledge base and increase their learning efforts (De Clercq & Zhou, 2014). Competition is indeed present in March's (1991) model, promoting both exploitative and explorative learning. However, in our material, according to De Clercq & Zhou (2014) the only way for INVs to respond to increased competition is to renew their knowledge base. Hence, exploitative learning would not be an option for INVs. However, this finding is based on a single article (De Clercq & Zhou, 2014), and corroborative research is needed. Another study (Autio et al., 2011) indicated that uncertainty speeds up the learning process in INVs. Such a feature is absent from March's (1991) model. Nevertheless, we are once again faced with a single finding, and a need for future research to investigate how environmental uncertainty affects learning in INVs.

5.4 Definitional and methodological suggestions for future research

We suggest that in future INV learning research, scholars should pay attention to defining INVs more clearly and consistently. This will enable a more coherent understanding of the phenomenon (see e.g. Madsen & Servais, 1997, p. 579). In future, more data should be collected from locations other than developed Western countries, with INVs from other than the high-technology sector (Nadkarni & Perez, 2007). INVs in the high-technology sector seems to require more entrepreneurial and marketing competencies than firms that apply less advanced solutions (Andersson & Berggren, 2016), but more research is needed. We also recommend cross-country comparison.

With regard to methodological approaches, we see several alternatives as having potential. These can be listed as follows:

- (i) *Longitudinal comparative case studies* (Pettigrew, 1990) are an excellent means of arriving at process theorizing from empirical findings. This approach would enable in-depth investigations and comparisons in the learning curves of various INVs, potentially leading to new insights into the true nature of INV learning.
- (ii) A *hermeneutic approach* could bring about insights on INV learning, taking into consideration the operational context and company-internal time aspects over an extended time-period, and encompassing the socially-constructed storyline of an INV (Hurmerinta, Paavilainen-Mäntymäki & Hassett, 2016).
- (iii) *Narrative analysis* (Pentland, 1999) would allow the individual voices of INV entrepreneurs to be heard. This approach could lead to new explanations of the learning of INVs, with stories embracing entire life spans, and taking also other life events into consideration. All of these could constitute potential sources of learning or learning capability.

In line with Coviello (2005), we suggest that in the future, our unit of analysis could be the individual entrepreneur. Altogether, the evidence of our material suggests that OL theory only partially explains learning among INVs. Deeper, processual studies could lead to novel insights, relatable to both INV and OL literatures. Moreover, we suggest that other learning theories could be applied also in future studies. These would include entrepreneurial learning, and social learning theory. In the case of Social Learning theory, the advantage would be that this would take into account non-economic features of learning (Kauppinen & Juho, 2012). The application of entrepreneurial learning could lead to a deeper understanding of individual and team-level learning in INVs (Sardana & Scott-Kemmis, 2010).

6 Conclusion, and limitations of the study

Learning has been acknowledged as a central feature for the new and rapidly internationalizing ventures. This systematic review confirmed this view and discusses in-depth the role of competencies, dynamics, networks and the learning environment in learning among INVs (See Table 1). We compared the state-of-the-art with March's (1991) OL theory, and discovered that there are several promising avenues for future research (See Fig. 1) that could lead to a more in-depth understanding of the INV phenomenon and, hence, contribute significantly to the field of IE. We also contribute by discussing methodological choices and theoretical approaches (See Appendices B and C), suggesting some alternatives, and conclude that there is a need to pay particular attention on the quality and validity of future studies.

The limitations of the paper are related to the limited number of articles reviewed. However, we would argue that positive aspects include clear criteria for the inclusion and exclusion of the articles in question (see the Methods section).

A second limitation is related to the inclusion of merely International New Ventures and Born Globals. However, the specificity in this regard, we would suggest, is part and parcel of the setting up of the study. It can be argued that this comprises both a limitation and a virtue of the study, in relation to IE literature more broadly.

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Journal	1994-1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total	Abs	
The Academy of Management Journal (MAN)			3																			3	4	
Journal of International Entrepreneurship (IE)							1						2			1						1	6	7
Journal of World Business (JB)										1									1				2	4
Journal of International Marketing (IMARK)							1						1			2		1				1	5	3
Journal of International Business Studies (IB)							1				1												4	4
Small Business Economics									1														1	3
Journal of Business Venturing (ENTR)																							1	4
International Entrepreneurship and Management Journal (ENTR)																		1					1	7
European Business Review (MAN)												1								1			2	2
Journal of Small Business Management (ENTR)													1	2									3	3
International Business Review (IB)												2	1			1		1				2	7	3
Journal of the Academy of Marketing Science (MARK)																		1					1	4
International Small Business Journal (ENTR)														1			1						2	3
Entrepreneurship, Theory and Practice (ENTR)														1									1	4
Industrial Marketing Management (MARK)																	1						1	3
International Marketing Review (IMARK)								1					1										2	3
Strategic Management Journal (STR)														1									1	4
Management Decision (MAN)																							1	2
British Journal of Management (MAN)																		1					1	4
The Journal of Management Development (MAN)		1																					1	7
Journal of Global Marketing (MARK)							1																1	7
Asian Business & Management (IB)																	1						1	2
Management International Review (MAN)																			1				1	3
Management Research Review (MAN)																						1	1	7
Total	0	1	0	3	0	0	1	4	1	0	2	2	4	6	5	3	6	3	3	3	1	50	AVG 2,56	

Appendix A. Publications and publication years.

#	Author(s)	Learning theories Applied	Learning Theories Applied Directly	Learning Theories Applied Indirectly (Secondary Reference)	Aims	Learning Related Outcomes
1	Almodóvar & Rugman (2014)	OL	OL: Barkema, Bell, & Pennings, 1996	Lu & Beamish, 2004 (OL): Barkema, H. G., & Vermeulen, F. 1998	Investigates the internationalization process of the Spanish INVs (N/A)	INVs do not have time to learn about foreign markets in the beginning (Dynamics)
2	Anderson, Graham & Lawrence (1998)	OL	OL: Argyris, 1976; Argyris & Schön, 1978; Nonaka 1996	x	Investigates the learning needs of managers in organizations that operate internationally for the first time (Direct)	Learning priorities change during the different phases of internationalization (Dynamics)
3	Autio, George & Alexy (2011)	OL	OL: Barkema & Vermeulen, 1998	x	Investigates how new capabilities emerge and solidify in new ventures that are faced with fundamental uncertainty from their environment (N/A)	As firms learn, they increase their knowledge of their internal processes that allows the reconfiguration of the business model to adapt the environment (Competencies, Skills); Uncertainty speeds up the learning process (Environment)
4	Autio, Sapienza & Almeida (2000)	OL	OL: Barkema & Vermeulen 1998; Cohen & Levinthal 1990; Nonaka 1994	Autio, Sapienza & Almeida 2000 (OL): Barkema & Vermeulen, 1998 (OL) Hult & Ferrell 1997 (OL): Argyris & Schön 1978, 1976; Sinkula, Baker & Noordewier 1997 (OL): Argyris & Schön 1978, Huber 1991, Fiol & Lyles 1985, Levitt & March 1988, Nonaka 1991	Investigates the effect of age in the firm, knowledge intensity and imitability of core technology on international growth (N/A)	The learning advantage of newness (the flexibility of a new venture) enables firms to learn competencies for international growth (Competencies, Skills)

Appendix C. Learning theories applied.

5	Baum, Schwens & Kabst (2011)	OL	x	<p>Autio, Sapienza & Almeida 2000 (OL): Barkema & Vermeulen, 1998 (OL) Hult & Ferrell 1997 (OL): Argyris & Schön 1978, 1976; Sinkula, Baker & Noordewier 1997 (OL): Argyris & Schön 1978, Huber 1991, Fiol & Lyles 1985, Levitt & March 1988, Nonaka 1991</p>	Investigates the determinants of different INV types (N/A)	The learning orientation differentiates between different INV types: learning orientation takes resources away from the international expansion and vice versa (Competencies, Orientation)
6	Baum, Schwens & Kabst (2013)	OL	x	<p>Autio, Sapienza & Almeida 2000 (OL): Barkema & Vermeulen, 1998</p>	Investigates how the firm- and entrepreneur-based determinants of international new venturing are moderated by perceived barriers to internationalization (N/A)	The environmental conditions of the country of origin impact the impact of knowledge intensity: the low financial barriers increase the knowledge intensity of INV (Environment)
7	Baum, Schwens & Kabst (2015)	OL	x	<p>Autio, Sapienza & Almeida 2000 (OL): Barkema & Vermeulen, 1998 Bruneel, Yli-Renko & Clarysse 2010 (OL): Cohen & Levinthal, 1990; Huber, 1991; Levitt & March, 1988; Eriksson et al. 1997 (OL): Cyert & March 1963; March & Simon 1958; Hult & Ferrel 1997 (OL): Argyris & Schön 1978, 1976; Johanson & Vahlne 2009 (OL): Argote, 1999; Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; March, 1991; Weick, 1995; Sinkula, Baker & Noordewier 1997 (OL): Argyris & Schön 1978, Huber 1991, Fiol & Lyles 1985, Levitt & March 1988, Nonaka 1991</p>	Investigates how the capabilities and resources impact internationalization patterns (Indirect)	Born-globals do not have resources for learning during the early years of international expansion (Dynamics)

8	Blomstermo, Eriksson & Sharma (2004)	OL	OL: Argyris & Schön 1978; Cohen & Levinthal, 1990; Duncan and Weiss 1979; Fiol and Lyles 1985; March 1991; Weick, 1991	Eriksson et al. 1997 (OL): Cyert & March 1963; March & Simon 1958	Investigates the effects of duration of domestic operations on the knowledge accumulation (Indirect)	The length of domestic activities affects the accumulation of experiential knowledge: the longer the firm operates domestically before internationalization the more it lacks internationalization knowledge (Dynamics)
9	Boter (2003)	N/A	x	x	Investigates the role of management perceptions in exporting and non-exporting SMEs (N/A)	Internationalization is a long-term learning process (Dynamics)
10	Bunz, Casulli, Jones & Bausch (2017)	OL	OL: Barkema & Vermeulen 1998	Autio, Sapienza & Almeida 2000 (OL): Barkema & Vermeulen, 1998 (OL); Sapienza et al. 2006 (OL): Barkema, Bell & Pennings, 1996; Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; Huber, 1991, Vermeulen & Barkema, 2001; Weerawardana et al. 2007 (OL): Bell, Whitwell & Lukas, 2002; Cohen & Levinthal, 1990; Day, 1994; Nonaka & Takeuchi, 1995; Zhou et al. 2012 (OL): Cohen & Levinthal, 1990; Day, 1994, Huber, 1991	Investigates how does an INV in the professional service sector learn and adapt its human capital requirements during internationalization (Direct)	Experiential learning is not automatic but requires deliberate practices (Competencies, Orientation); Setbacks are inevitable part of the internationalization process, which provide valuable learning opportunities for INVs (Dynamics); During the increasing foreign exposure the professional service INV learns from its experience and iterates through the phases of developing, revising, and finalizing its criteria for the requirements of suitable human capital (Environment)

11	Chandra (2017)	OL	x	Zahra et al., 2005 (OL): Daft & Weick, 1984; Weick, 1995	Investigates how entrepreneurs evaluate international entrepreneurial opportunities (N/A)	The early stage international opportunity evaluation is dominated by the need for survival and learning while later stage is influenced by the desire to optimize economic value and efficiency (Dynamics); Mistakes and setbacks are common in early stage internationalization but offer substantial learning opportunities to improve and revise the decision making rules over time (Dynamics)
12	Chandra, Styles & Wilkinson (2012)	OL, Social Learning	x	Corbett 2007 (OL): Cohen & Levinthal, 1990; Hutzschenreuter, Pedersen & Volberda 2007 (OL): Cohen & Levinthal, 1990; Ucbasaran, Westhead & Wright 2009 (Social learning): Bandura, 1994; Wood & Bandura, 1989	Investigates the rapid internationalization through opportunities (N/A)	Networks are important sources of information, opportunities and internationalization paths (Networks); The pace of learning and feedback depends on context where the firm operates (Environment)
13	Chetty & Campbell-Hunt (2004)	OL	OL: Cohen & Levinthal 1990	x	Compares the differences between traditional and BG approaches (N/A)	BGs differentiate from other firms with the more aggressive learning style: active engagement and experimentation, tolerating the failure, instantly solve problems as they arise (Competencies, Skill)

14	De Clercq & Zhou (2014)	OL	OL: Cohen & Levinthal 1990; Huber 1991	<p>Autio et al. 2000 (OL): Barkema & Vermeulen, 1998; Eriksson et al. 1997 (OL): Cyert & March 1963; March & Simon 1958; Sapienza et al. 2006 (OL): Barkema, Bell & Pennings, 1996; Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; Eriksson et al., 1997; Huber, 1991; Vermeulen & Barkema, 2001</p>	<p>Investigates the mediating role of international learning effort at the relationship between international young ventures' entrepreneurial strategic posture and international performance and investigates how external and internal factors moderate this role (Indirect)</p>	<p>Competition intensity and internal social interaction increases the international learning effort (Environment)</p>
15	De Clercq, Sapienza & Zhou (2014)	OL	<p>OL: Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; Levinthal & March, 1993</p>	<p>Autio et al. 2000 (OL): Barkema & Vermeulen, 1998; Eriksson et al. 1997 (OL): Cyert & March 1963; March & Simon 1958; Sapienza et al. 2006 (OL): Barkema, Bell & Pennings, 1996; Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; Eriksson et al., 1997; Huber, 1991; Vermeulen & Barkema, 2001; Sapienza et al. 2005 (OL): Cohen & Levinthal, 1990; Levinthal & March, 1993 & Nonaka et al., 2000; Zahra et al., 2005 (OL): Daft & Weick, 1984; Weick, 1995</p>	<p>Investigates the contribution of international ventures' entrepreneurial strategic posture to their actual learning efforts at foreign markets depends on various flexibilities that underlie their operations (Indirect)</p>	<p>Entrepreneurial strategic posture enhances learning when venture possesses more cognitive and political flexibilities (Competencies, Skills)</p>
16	Evers, Andersson & Hannibal (2012)	OL	<p>OL: Argyris & Schön 1978</p>	<p>Brady & Davies 2004 (OL): March, 1991; Weerawardana et al. 2007 (OL): Bell, Whitwell & Lukas, 2002; Cohen & Levinthal, 1990; Day, 1994; Nonaka & Takeuchi, 1995</p>	<p>Investigates the role of stakeholders in marketing capability building process (N/A)</p>	<p>Networks influence the learning process of INVs (Networks)</p>

17	Fuerst & Zettinig (2015)	OL	OL : Cohen & Levinthal 1990; Huber 1991	Autio et al. 2000 (OL) : Barkema & Vermeulen, 1998; Eriksson & Chetty 2003 (OL) : Cohen & Levinthal, 1990; Barkema, Bell & Pennings, 1996; Eriksson et al. 1997 (OL) : Cyert & March 1963; March & Simon 1958	Investigates the knowledge acquisition creation of INVs through the interaction with network partners (Direct)	Congenital (technological) knowledge constitutes the starting point for all firms, followed by focused search process and leading to vicarious learning (Dynamics); Different stakeholder interactions lead to the creation of different types of international market knowledge (Networks)
18	Gabrielsson & Gabrielsson (2013)	OL	x	Autio et al. 2000 (OL) : Barkema & Vermeulen, 1998; Johanson & Vahlne 2009 (OL) : Argote, 1999; Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; March, 1991; Weick, 1995	Investigates the growth and survival of high-tech B2B INVs in small and open economies through decision-making logic (N/A)	The role of learning in INVs changes over time: the opportunity creation and explorative learning is important in the early phases. Opportunity discovery and exploitative learning are essential in the latter phases (Dynamics)
19	Gabrielsson, Kirpalani, Dimitratos, Solberg & Zucchella (2008)	OL	x	Ireland, Hitt, Camp, & Sexton, 2001 (OL) : Cohen, D. 1998; Nonaka, 1994; Nonaka, I., & Takeuchi, H. 1995; Zahra, Ireland, & Hitt, 2000 (OL) : Barkema & Vermeulen, 1998; Bartlett & Ghoshal, 1987; Hitt, Hoskisson & Ireland, 1994; Huber, 1991	Investigates the definition of BG and the behavior of BGs over time (N/A)	Organizational learning develops over time: in the first phase INVs need the experience of the managers or partners, in the second phase they learn from partners or clients and in the third phase they leverage what they have learned (Dynamics); Networks speed up the pace of learning (Networks)
20	Hessels & Stel (2011)	OL	OL : Cohen & Levinthal 1990	Autio et al. 2000 (OL) : Barkema & Vermeulen, 1998; Sinkula, Baker & Noordewier 1997 (OL) : Argyris & Schön 1978, Huber 1991, Fiol and Lyles 1985, Levitt and March 1988, Nonaka 1991; Yeoh 2004 (OL) : Cohen and Levinthal 1990 Zahra et al. 2000 (OL) : Barkema & Vermeulen, 1998; Bartlett & Ghoshal, 1987; Hitt, Hoskisson & Ireland, 1994; Huber, 1991	Investigates the relationship between new venture creation and economic growth (N/A)	The availability of technologies increases the firm's specialization in knowledge-based activities (Environment)

21	Kauppinen & Juho (2012)	OL, Social Learning	Social learning: Engeström 1987, 2001	Johanson & Vahlne 2009 (OL): Argote, 1999; Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; March, 1991; Weick, 1995	Investigates the internationalization through the social learning theory (Direct)	Entrepreneurial actions (the creation of an international business opportunity) are about learning that constructs and co-creates knowledge (Competences, Skills); Learning in INVs is a social and cyclical process (Dynamics)
22	Khavul, Peterson, Mullens & Rasheed (2010)	OL	OL: Argote & Todorova 2007; Argote 1999; Huber 1991; March 1991	x	Investigates the role of international customer support in exploiting the innovation (N/A)	International customer support is positively associated with organizational learning (Networks)
23	Knight & Cavusgil (2004)	OL	OL: Cohen & Levinthal 1990	Auñó et al. 2000 (OL): Barkema & Vermeulen, 1998; Zahra et al. 2000 (OL): Barkema & Vermeulen, 1998; Bartlett & Ghoshal, 1987; Hitt, Hoskisson & Ireland, 1994; Huber, 1991	Investigates the role of innovative culture and organizational capabilities on early internationalization and international performance (Indirect)	The innovative nature of BGs develops knowledge in the firm (Competences, Orientation)
24	Kumar (2013)	OL	x	Baker & Sinkula 1999 (OL): Argyris & Schön, 1978; Huber, 1991; Sinkula, Baker & Noordewier 1997 (OL): Argyris & Schön 1978, Huber 1991, Fiol and Lyles 1985, Levitt and March 1988, Huber 1991, Nonaka 1991; Zollo & Winter 2002 (OL): Argote, 1999; Argyris & Schön, 1978; Cohen & Levinthal, 1990; Levitt & March, 1988; March, 1991; Nonaka, 1994; Weick, 1979,1991	Investigates the factors of early internationalization in Indian knowledge-intensive service firms (KISFs) (N/A)	Early internationalization is positively related to learning (Dynamics)
25	Kungwansupaphan & Stengthai (2014)	OL	OL: Huber 1991	x	Investigates the role of human capital in the learning orientation of early internationalizing firm (Direct)	Entrepreneurial- and managerial competence have a positive effect on the learning orientation (Competences, Skills)

26	Laudien & Daxböck (2017)	OL	x	Weerawardena et al., 2007 (OL): Bell, Whitwell & Lukas, 2002; Cohen & Levinthal, 1990; Day, 1994; Nonaka & Takeuchi, 1995	Investigates how growing service orientation affects international new ventures (N/A)	Service-orientation enhances organizational learning (Competencies, Orientation); Increased service orientation goes along with a development of capabilities and allow for an improved access to customer-based and network-based knowledge (Competencies, Orientation)
27	Nadkarni & Perez (2007)	OL	OL: Barkema & Vermeulen 1998; Vermeulen & Barkema 2001; Weick 1995	Eriksson et al. 1997 (OL): Cyert & March 1963; March & Simon 1958	Investigates firm-specific explanations for early international commitment (N/A)	High-technology resource orientation implies a focus on innovation (Competencies, Orientation); High advertising intensity implies that firms seek new ways to compete and differentiate their products and this promotes greater learning and knowledge creation (Competencies, Orientation)
28	Oxtorp (2014)	OL	x	Weerawardena et al., 2007 (OL): Bell, Whitwell & Lukas, 2002; Cohen & Levinthal, 1990; Day, 1994; Nonaka & Takeuchi, 1995	Investigates the challenges technology-based INVs face after their initial internationalization phase and the dynamic managerial capability (N/A)	Internationally oriented practices create routines that provide the learning advantages of newness (Competencies, Orientation)
29	Park & Rhee (2012)	OL	OL: Cohen & Levinthal 1990	Autio et al. 2000 (OL): Barkema & Vermeulen, 1998; Yi-Renکو et al. 2001 (OL): Cohen & Levinthal, 1990; Zahra et al. 2009 (OL) = Cohen & Levinthal, 1990; Zahra & Hayton 2008 (OL): Argyris & Schön, 1978; Cohen & Levinthal, 1990; Dodgson, 1993; Huber, 1991) Zahra & George 2002 (OL): Cohen & Levinthal, 1990; Huber, 1991	Investigates the antecedents of knowledge competency and international performance (Indirect)	The prior international experience and use of networks are important pre-conditions for acquiring knowledge-based resources (Competencies, Experience; Networks)
30	Pellegrino & Menaughton (2015)	OL	OL: Huber, 1991	x	Investigates the co-evolution of learning and internationalization strategy (Direct)	Learning changes as INVs internationalize: at the time of founding, INVs rely on congenial learning, but as they internationalize they use more experiential, vicarious, searching and noticing based learning (Dynamics)

31	Presutti, Boari & Fratocchi (2007)	N/A	x	x		Investigates the growth of INVs through social capital theory (Indirect) Investigates the company specific factors that enhance the choice of higher resource commitment entry modes in INVs (N/A)	Network ties between the key foreign customers are positively related to foreign knowledge acquisition (Networks) Early internationalization influences INV capability to absorb foreign market knowledge (Dynamics)
32	Ripollés, Blesa & Monferrer (2012)	OL			OL: Cohen & Levinthal, 1990 OL: Barkema, Bell & Pennings, 1996; Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; Huber, 1991; Vermeulen & Barkema, 2001; Eriksson et al. 1997 (OL): Cyert & March 1963; March & Simon 1958		
33	Romanello & Chiarvesio (2017)	Entrepren. Learning			Entreprenurial learning: Zhou 2007	Investigates which factors influence international growth during the entry and post-entry phases of BG and how the factors change during the life cycles of the firms (N/A)	The learning methods of entrepreneurs change as the firm moves from the first years of activity to the post-entry stage. During the first years of activities, founders approached markets with a trial-and-error and "learn by doing" methods. As they reach post-entry stage, entrepreneurs start to transform their capabilities into organizational knowledge (Dynamics)
34	Ruokonen & Saarenketo (2009)	OL			OL: Argyris & Schön, 1978; Barkema & Vermeulen, 1998	Investigates the strategic orientations of rapidly internationalizing small software companies (N/A)	The most effective way to learn in the beginning is to use managerial experience and in the later phase the learning is focused more on interpreting market signals and adjusting the strategy (Dynamics)
35	Sapienza, De Clercq & Sandberg (2005)	OL			OL: Cohen & Levinthal, 1990; Levinthal & March, 1993 Entreprenurial learning: Cope 2003, 2005; Harrison & Leitch 2008; Politis 2005	Investigates the antecedents of international and domestic learning effort at independent firms (Direct)	Entrepreneurial orientation is positively associated to international- and domestic learning effort (Competencies, Orientation)
36	Sardana & Scott-Kemmis (2010)	Entrepren. Learning				Investigates the impact of entrepreneurial team and entrepreneurs' role in learning (Direct)	The learning is the highest when there is an experience gap (Competencies, Experience)

37	Schwens & Kabst (2009 a)	OL	OL: Barkema & Vermeulen 1998	Autio et al. 2000 (OL): Barkema & Vermeulen, 1998	Investigates how asset specificity, prior international experience and international network contacts impact early internationalization (N/A)	International networks seem to facilitate learning via access to the knowledge of network members (Networks)
38	Schwens & Kabst (2009 b)	OL	OL: Cohen & Levinthal (1990); Levitt & March (1988)	x	Investigates learning in the entry phase of internationalization (Direct)	Learning from the experience affects negatively to the early internationalization (Competencies, Experience); Learning from others, and imitating the best practices for the early internationalization (Dynamics)
39	Shrader, Oviatt & McDougall (2000)	N/A	x	x	Investigates how the risks of accelerated internationalization may be engaged (N/A)	The locus of foreign market knowledge may be more the entrepreneur or the entrepreneurial team than the whole organization decision making system (Dynamics)
40	Vanninen, Kuivalainen & Ciravegna (2017)	OL	x	Johanson & Vahlne 2009 (OL): Argote, 1999; Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; March, 1991; Weick, 1995	Investigates how born micromultinationals multinationalize (N/A)	Trust building (management) is a prerequisite for efficient learning (Competencies, Skills)
41	Voudouris, Dimitratos & Salavou (2011)	OL, Entrepreneurial Learning	Entrepreneurial learning: Lumpkin & Lichtenstein, 2005; Minniti & Bygrave, 2001; Politis, 2005, Zhang et al, 2006 OL: Dutta & Crossan, 2005	Autio et al., 2000 (OL) = Barkema & Vermeulen, 1998; Kuemmerle 2002 (OL): Cohen & Levinthal 1990, 1994; Sapienza 2005 (OL): Cohen & Levinthal, 1990; Levinthal & March, 1993 & Nonaka et al., 2000) Weerawardena et al. 2007 (OL): Bell, Whitwell & Lukas, 2002; Cohen & Levinthal, 1990; Day, 1994; Nonaka & Takeuchi, 1995 Eriksson et al. 1997 (OL): Cyert & March 1963; March & Simon 1958	Investigates the entrepreneurial learning in early internationalizing firms (Direct)	Industrial, technological and international learning orientations affect the entrepreneurial learning (Competencies, Orientation); Entrepreneurial learning is a multidimensional process that spans from individual level to the whole organization (Dynamics)

42	Weerawardena, Mort, Salunke, Knight & Liesch (2014)	OL	OL: Cohen & Levinthal 1990; March 1991; Powell et al. 1996	x	Investigates the organizational learning in the context of INVs (Direct)	Learning capabilities (marketing-, internal learning- and network learning capabilities) of the entrepreneurs creates knowledge and marketing capabilities needed for the internationalization (Competencies, Skills)
43	Wood, Khavul, Perez-Nordvedt, Prakhya, Dabrowski & Zheng (2011)	OL	x	Autio, Sapienza & Almeida 2000 (OL): Barkema & Vermeulen, 1998; Zahra, Sapienza, and Davidsson 2006 (OL): Cyert & March, 1963; Zahra, Ireland, and Hitt 2000 (OL): Barkema & Vermeulen, 1998; Bartlett & Ghoshal, 1987; Hitt, Hoskisson, & Ireland, 1994; Huber, 1991	Investigates the strategic early internationalization (N/A)	Deliberate knowledge integration from international operations increases the breadth and speed of learning (Environment)
44	Yeoh (2004)	OL	OL: Barkema & Vermeulen, 1998; Duncan & Weiss, 1979	Eriksson et al. 1997 (OL): Cyert & March 1963; March & Simon 1958	Investigates technological-, market- and social learning during internationalization (Direct)	Prior international experience shape the learning (Competencies, Experience); Exposure to the foreign markets enhances the potential of learning (Environment); Over diversification lead to decline in technological learning (Environment)

45	Yu, Gilbert & Oviatt (2011)	OL	OL: Cohen & Levinthal, 1990	<p>Autio et al., 2000 (OL): Barkema & Vermeulen, 1998; De Clercq, Sapienza & Crijns 2005 (OL): Cohen & Levinthal, 1990; Cyert & March, 1963; Levinthal & March, 1993; Eriksson et al. 1997 (OL): Cyert & March 1963; March & Simon 1958; Roth et al. 2009 (OL): Cohen & Levinthal, 1990; Sapienza et al. 2006 (OL): Barkema, Bell & Pennings, 1996; Barkema & Vermeulen, 1998; Cohen & Levinthal, 1990; Eriksson et al., 1997; Huber, 1991; Vermeulen & Barkema, 2001; Simonin 1999 (OL): Nonaka, 1994;</p>	Investigates the role of networks in accelerating new ventures sales into foreign markets (N/A)	Technological alliances provide rapidly changing and complex technological knowledge (Networks); Marketing alliances provide stable knowledge about the foreign markets (Networks)
46	Zahra, Ireland & Hitt (2000)	OL	OL: Barkema & Vermeulen, 1998; Bartlett & Ghoshal, 1987, 1987; Hitt, Hoskisson, & Ireland, 1994; Huber, 1991	x	Investigates the effects of international expansion, measured by the international diversity and mode of market entry, on firm's technological learning and the effects of this learning on the financial performance (N/A)	The entry to new international markets increases the potential for the greater breadth and depth of technological learning, but the greater diversity of foreign markets can reduce the speed of technological learning (Environment)

47	Zhang, Tansubhai & McCullough (2009)	OL	OL: Cohen & Levinthal, 1990; Weick, 1995	Autio et al., 2000 (OL); Barkema & Vermeulen, 1998; Ireland, Hitt, Camp, & Sexton, 2001 (OL); Cohen, D., 1998; Nonaka, 1994; Nonaka, I., & Takeuchi, H., 1995; Zahra, Ireland, and Hitt 2000 (OL); Barkema & Vermeulen, 1998; Bartlett & Ghoshal, 1987; Hitt, Hoskisson, & Ireland, 1994; Huber, 1991	Investigates the development and application of entrepreneurial capability (N/A)	International entrepreneurial capability has positive effect on learning (Competencies, Skills)
48	Zhou (2007)	OL	OL: Barkema, Bell, & Pennings, 1996	Autio et al., 2000 (OL); Barkema & Vermeulen, 1998; Eriksson et al. 1997 (OL); Cyert & March 1963; March & Simon 1958; Sapienza, De Clercq, and Sandberg, 2005 (OL); Cohen & Levinthal, 1990; Levinthal & March, 1993 & Nonaka et al., 2000; Zahra, Ireland, and Hitt 2000 (OL); Barkema & Vermeulen, 1998; Bartlett & Ghoshal, 1987; Hitt, Hoskisson, & Ireland, 1994; Huber, 1991	Investigates the factors of early internationalization (N/A)	The innovative and proactive pursuit of entrepreneurial opportunities produces foreign market knowledge (Competencies, Orientation)
49	Zhou, Barnes & Lu (2010)	OL	x	Autio et al., 2000 (OL); Barkema & Vermeulen, 1998; Sapienza, De Clercq, and Sandberg, 2005 (OL); Cohen & Levinthal, 1990; Levinthal & March, 1993 & Nonaka et al., 2000; Zahra, Ireland, and Hitt 2000 (OL); Barkema & Vermeulen, 1998; Bartlett & Ghoshal, 1987; Hitt, Hoskisson, & Ireland, 1994; Huber, 1991	Investigates the mechanisms underlying learning advantage of newness related performance advantages in new venture internationalization (Indirect)	Entrepreneurial behavior supports the full potential of learning advantage of newness through the entrepreneur's dynamics of learning to upgrade network and market knowledge (Competencies, Orientation)
50	Zou & Ghauri (2010)	OL	x	Zahra & Hayton 2008 (OL); Argyris & Schön, 1978; Cohen & Levinthal, 1990; Dodgson, 1993; Huber, 1991; Zahra et al., 2005 (OL); Daif & Weick, 1984; Weick, 1995	Investigates how Chinese high-technology ventures internationalize (N/A)	High-tech ventures have the tendency to acquire knowledge at their early entry phases (Dynamics); INVs rely on networks to facilitate learning (Networks); Cultural diversity within the INV influence the knowledge flow (Environment)

Appendix D. The reviewed articles. N=50.

1. Almodóvar, P. & Rugman, A.M. 2014, "The M Curve and the Performance of Spanish International New Ventures", *British Journal of Management*, vol. 25, pp. S6-S23.
2. Anderson, V., Graham, S. & Lawrence, P. 1998, "Learning to internationalize", *The Journal of Management Development*, vol. 17, no. 7, pp. 492-502.
3. Autio, E., George, G. & Alexy, O. 2011, "International Entrepreneurship and Capability Development--Qualitative Evidence and Future Research Directions", *Entrepreneurship Theory and Practice*, vol. 35, no. 1, pp. 11-37.
4. Autio, E., Sapienza, H.J. & Almeida, J.G. 2000, "Effects of Age at Entry, Knowledge Intensity, and Imitability on International Growth", *The Academy of Management Journal*, vol. 43, no. 5, pp. 909-924.
5. Baum, M., Schwens, C. & Kabst, R. 2011, "A Typology of International New Ventures: Empirical Evidence from High-Technology Industries", *Journal of Small Business Management*, vol. 49, no. 3, pp. 305-330.
6. Baum, M., Schwens, C. & Kabst, R. 2015, "A latent class analysis of small firms' internationalization patterns", *Journal of World Business*, vol. 50, no. 4, pp. 754-768.
7. Baum, M., Schwens, C. & Kabst, R. 2013, "International as opposed to domestic new venturing: The moderating role of perceived barriers to internationalization", *International Small Business Journal*, vol. 31, no. 5, pp. 536-562.
8. Blomstermo, A., Eriksson, K. & Sharma, D.D. 2004, "Domestic Activity and Knowledge Development in the Internationalization Process of Firms", *Journal of International Entrepreneurship*, vol. 2, no. 3, pp. 239-258.
9. Boter, H. 2003, "Management Perspectives as Catalysts for Exporting", *Journal of Global Marketing*, vol. 16, no. 3, pp. 31-52.
10. Bunz, T., Casulli, L., Jones, M.V. & Bausch, A. 2017. "The dynamics of experiential learning: Microprocesses and adaptation in a professional service INV". *International Business Review*, vol. 26, no. 2, pp. 225-238.
11. Chandra, Y. 2017. "A time-based process model of international entrepreneurial opportunity evaluation", *Journal of International Business Studies*, vol. 48, no. 4, pp.423-451.
12. Chandra, Y., Styles, C. & Wilkinson, I.F. 2012, "An Opportunity-Based View of Rapid Internationalization", *Journal of International Marketing*, vol. 20, no. 1, pp. 74-102.
13. Chetty, S. & Campbell-Hunt, C. 2004, "A Strategic Approach to Internationalization: A Traditional Versus a "Born-Global" Approach", *Journal of International Marketing*, vol. 12, no. 1, pp. 57-81.
14. De Clercq, D. & Zhou, L. 2014, "Entrepreneurial Strategic Posture and Performance in Foreign Markets: The Critical Role of International Learning Effort", *Journal of International Marketing*, vol. 22, no. 2, pp. 47-67.
15. De Clercq, D., Sapienza, H.J. & Zhou, L. 2014, "Entrepreneurial strategic posture and learning effort in international ventures: The moderating roles of operational flexibilities", *International Business Review*, vol. 23, no. 5, pp. 981-992.
16. Evers, N., Andersson, S. & Hannibal, M. 2012, "Stakeholders and Marketing Capabilities in International New Ventures: Evidence from Ireland, Sweden, and Denmark", *Journal of International Marketing*, vol. 20, no. 4, pp. 46.
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