

Building a better conceptualization of the firm's "degree of internationalization" construct

ABSTRACT

This paper advances a comprehensive and dimensionally-structured conceptualization of the firm's "degree of internationalization" (DoI) construct. We argue that a new conceptual framework is needed, since the conceptual literature of firm's DoI has proposed models that have several limitations and the empirical literature has mostly employed very simplistic operational indicators of the construct: some DoI indexes have been proposed and, although controversial due to an argued lack of construct validity, they have been used in international business research. On the other hand, in many studies some single variables have been used as proxies to measure firm's DoI, even though it is well known that firm's DoI is a multifaceted latent concept. This inconsistency of DoI definition and empirical use is argued to be one of the reasons why, for instance, the relationship of firm's DoI and performance is still not conclusive. Therefore, on this study we are going to focus on the first stage of a construct definition: the construct conceptualization, trying to answer the following question: what is the conceptual map of the firm's "degree of internationalization" construct? To achieve this objective, we consider that internationalization involves firm's commitment with foreign business relationships, and we ground our research in the concepts of modularity and global value chain, resource-based view and firm's international commitment, proposing a new model that covers a multitude of DoI's facets. This model separates DoI in three different latent concepts: degree of internationalization of firm's inputs (DOI_{inputs}), degree of internationalization of firm's means (DOI_{means}), and degree of internationalization of firm's outputs ($DOI_{outputs}$). The framework also contemplates inward and outward internationalization processes, and further advanced the conceptualization by listing the

different facets related to each one of these latent concepts, defining the boundaries of each construct. We argue that our proposed conceptualization is original in two ways: (1) it is the first conceptualization of firm's DoI that take into account firm's commitment to international activities as an underlying concept that permeates all facets of degree of internationalization, and (2) it is the first conceptualization that proposes that firm's DoI should be evaluated by three latent concepts not compulsory related. Additionally, we present some limitations of the study and suggestions for future researches.

KEY WORDS

Degree of internationalization; multinationality; international commitment

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INTRODUCTION

Internationalization involves firm's commitment with foreign relationships, it is reflected by firm's resource allocation (Johanson & Vahlne, 1977, 2009) that may be tangible or intangible, or by the mode of entry and the manner by operations are established in a foreign country (Rocha *et al.*, 2012). Also, in the current complex and dynamic of international business environment, where markets are networks of relationships (Johanson & Mattsson, 1987; Johanson & Vahlne, 2009, 2011) that may enhance resource and knowledge base of firm's (Loane & Bell, 2006), where value-adding chains can be dispersed geographically and governed efficiently also through nonhierarchical means (Koza, Tallman, & Ataay, 2011), firm's integration would be operationalized by the rational of modularization (Aggarwal, Berrill, Hutson, & Kearney, 2011). As a result, from one perspective, firm's top management team (TMT) would be more and more facing decisions of strategic assembly of firm regarding which value-adding stages should be internal, which should be sourced through alliances, or left to the market (Koza *et al.*, 2011) and, from another perspective, the TMT would be more often receiving international network partner's invitation to accompany them abroad (Chandra *et al.*, 2012; Johanson and Vahlne, 2003), extending their domestic business relationships into foreign markets (Johanson and Vahlne, 2003).

In the light of this current international business context, we investigated the literature of firm's degree of internationalization (DoI), found that the literature of firm's DoI is sparse, and that it has not produced neither a solid conceptualization of the construct, nor an agreement on how to adequately measure it. Additionally, Some DoI indexes have been proposed and, although controversial due to an argued lack of construct validity, some of

them have been used by international business research. On the other hand, in many researches some single variables have been used as proxies to measure DoI, even though it is well known that DoI is a multifaceted latent concept.

There are several studies relating multinationality and performance and no agreed conclusion. One of the main arguments is related to firm's DoI and maintain that multinationality is a multidimensional phenomenon that includes all aspects of foreign value chain, but have been measured by variables that lack face validity to adequately represent it (Wiersema & Bowen, 2011). Therefore, this paper objective is to propose a new framework to advance a comprehensive and dimensionally-structured conceptualization of the firm's "degree of internationalization (DoI)" construct. To achieve this objective, we designed a research that would try to answer the following question: what is the conceptual map of the firm's "degree of internationalization" construct?

This research also answer to calls from other researches that criticized the use of a single item to represent DoI (Dörrenbächer, 2000), and that would be useful if scholars could develop an alternative valid measure for DoI (Sullivan, 1996). On the other hand, "the absence of an agreed approach to operationally defining or measuring multinationality at the level of the firm is reflected in a lack of consistency in how International Business (IB) scholars think about both high-level and domain-specific theory building and testing" (Aggarwal *et al.*, 2011, p.573). Thus, we are going to focus on the first stage of a construct definition: the construct conceptualization, leaving a suggestion for further researches to develop the subsequent stages of construct operationalization, validity and reliability assessment (MacKenzie, 2003). Therefore, considering that internationalization involves firm's commitment with foreign relationships, we ground our research in the concepts of modularity, global value chain, resource-based view and firm's international commitment to propose a new model that covers a multitude of facets of DoI. This model separates DoI in

internationalization of inputs, of firm's means and of firm's outputs, proposing three latent concepts for DoIs: degree of internationalization of firm's inputs (DOI_{inputs}), degree of internationalization of firm's means (DOI_{means}), and degree of internationalization of firm's outputs ($DOI_{outputs}$). This model also contemplates inward and outward process, and further advanced the conceptualization by listing the different facets related to each one of these latent concepts, defining the boundaries of each construct..

This manuscript is organized in as follows: a critical review of the three indexes proposed by the literature and other measurement of DoI is undertaken. We then present reflection over the domain map of the DoI construct, followed by our proposed framework, and finish drawing some conclusions, research limitations and suggestions for future researches.

LITERATURE REVIEW

In our literature review we firstly present a critical review of the three indexes proposed by the IB literature, and then we present other measurement of DoI that do not constitute indexes, but are also used by IB in empirical researches.

Proposals of DoI Index

In this section we are going to review three index proposed to evaluate de DoI of a firm and that are the manly used by IB literature: the first was proposed by (Sullivan, 1994), the second was proposed by United Nations Conference on Trade and Development (UNCTAD, 1995), and the third one was proposed by (Ietto-Gillies, 1998).

Sullivan's DOI_{INTS}

Sullivan (1994) based his proposal on three attributes suggested by the IB literature that could be used to analyze firm's DoI: (1) performance attribute, which was firstly proposed by Vernon (1971) as an analysis of what was "going on overseas" and was latter

defined as the degree of firm's success or failure in international activities in a certain period of time (Dörrenbächer, 2000); (2) structural attribute, which was firstly proposed by Stopford and Wells (1972) as an analysis of the resources that were overseas and latter defined as an analysis of firm's international entanglement in a certain period of time (Dörrenbächer, 2000); and (3) attitudinal attribute, which was firstly proposed as an analysis of top management international orientation (Perlmutter, 1969) and latter also defined as an analysis of how firm's view foreign countries and treat their foreign countries' subsidiaries (Dörrenbächer, 2000). After an exploratory factor analysis Sullivan (1994) proposed an index (DOI_{INTS}) compound of one performance attribute – foreign subsidiaries' sales as a percentage of total sales (FSTS) (Stopford & Dunning, 1983) –, two structural attributes – foreign assets as a percentage of total assets (FATA) (Daniels & Bracker, 1989) and overseas subsidiaries as a percentage of total subsidiaries (OSTS) (Stopford & Wells, 1972); and two attitudinal attributes – top management international experience (TMIE) (Perlmutter, 1969) and psychic dispersion of international operations (PDIO).

Regarding DOI_{INTS} index, we agree with Ramaswamy *et al.* (1996) in respect to the fact that the construct is theoretically suspect. Therefore, we would discuss different aspects related to construct conceptualization.

Sullivan (1994) latent variable DOI_{INTS} index would be a formative construct (Bollen & Lennox, 1991; Diamantopoulos, 1999), what implies that the formative measured variables (i.e. items) are the causes of the construct and are viewed as characteristics of the construct (i.e. phenomenon) rather than manifestations of it. Changes in an item would cause changes in the construct, but changes in the construct would not necessarily cause changes in all items (Burke, Mackenzie, & Podsakoff, 2003). Unidimensionality, although questioned by Ramaswamy *et al.* (1996) would not be an issue. Rather, multidimensionality is expected, since the items should represent the different facets of the construct. As a consequence o

multidimensionality, the absence of an item alters the conceptual domain of the construct (Burke *et al.*, 2003).

It seems for us that it is debatable that the items used to compound DOI_{INTS} fully represent the different facets of the firm's DoI. There are other items that should be included (see Dörrenbächer (2000)) to compose other facets and better represent an index of firm's DoI. Our analysis is that Sullivan (1994) should have spent more on the conceptual development and assessment of face validity of the construct (Spector, 1992), before empirically testing it. Additionally, confirmatory factor analysis would be the appropriate method to test construct validity (Hair Jr., Black, Babin, & Anderson, 2010), offering the possibility to analyze not only the factor loading, but also measurement errors. On the other hand, since he has defined DOI_{INTS} as an index (i.e. formative construct), it would require two additional reflective measures to achieve model identification (Burke *et al.*, 2003) necessary for construct evaluation. Maybe, this is what Ramaswamy *et al.* (1996) had in mind when they commented that it should be investigated if the index allowed the prediction of something of empirical, theoretical or practical importance. Finally, we judge that some of the measured variables – FSTS, FATA and OSTs – are actually reflexes of firm's internationalization, since are manifested facets of the phenomenon, implicating changes in DOI_{INTS} that will mischaracterize its form and computation. Therefore, the DOI_{INTS} construct lacks validity.

Additionally, we agree with Ramaswamy *et al.* (1996) that top management international experience has no direct relation to attitudinal DoI, since it was measure by years spent overseas. TMIE seems to be an antecedent of top management international orientation, an item of DOI_{INTS}, rather than an antecedent of DOI_{INTS}, what would also contribute to the lack of construct validity. We presume that this misconception was also present in the theoretical part of Sullivan (1994) paper when he decided to include in the

statistical analysis the research and development intensity and advertising intensity. On the other hand, as mentioned by Ramaswamy *et al.* (1996), the operationalization of psychic dispersion is also debatable. Finally, we also agree with (Ramaswamy *et al.*, 1996) that DOI_{INTS} seem to exclude some foreign entry modes such as indirect exporting, licensing, and joint ventures, since three of the five index components (FATA, OSTs, PDIO) require foreign assets or subsidiaries to compute any measure, while another component (FSTS) is highly influenced by entry mode chosen. Consequently, there is an implicit limitation on the empirical use of the index.

Sullivan (1994) index was the result of an interesting effort to propose a manner to measure a very important variable of the IB literature, and provoked subsequent discussion and efforts to better develop the conceptual boundaries and measures. However, after this analysis we would like to propose that it would be very inappropriate to represent firm's DoI in any researcher or practical application using DOI_{INTS}.

UNCTAD Transnationality Index

Another index was proposed by United Nations Conference on Trade and Development (UNCTAD) in 1995 World Investment Report (UNCTAD, 1995) and called the Transnationality Index. UNCTAD index is calculated as the average of three ratios: the shares of foreign sales in total sales, of foreign assets in total assets and of foreign employment in total employment.

Thus, UNCTAD index consider one performance item used in DOI_{INTS}, one structural item used in DOI_{INTS} and a new structural item – foreign employment in total employment. If we consider the three distinct attributes we may directly question the absence of an attitudinal attribute in the index. Furthermore, this index is also subjected to the same considerations already discussed when we analyze DOI_{INTS}. Therefore, we believe that, when looking for a pervasive index, UNCTAD ended up measuring only part of the phenomenon, computing

companies' indexes with limited theoretical and practical application. It is not our aim to criticize the statistical effort, but to alert that it should be carefully used, understanding its intrinsic limitations.

Transnational Activities Spread Index

The last index that we are going to analyze is Jetto-Gillies (1998) Transnational Activities Spread Index (TASI). This index is based on UNCTAD's transnationality index with the addition of the effect of geographical spread of transnational corporations. This is obtained by multiplying each component of UNCTAD's transnationality index by what was called network spread index. The network spread index is simply the ratio of the number countries where the company is present by the number of countries potentially available to undertake internationalization (i.e. countries where there is already some kind of FDI).

It is questionable to measure geographic dispersion with this methodology, since, even though it is a measure that captures breadth of international operations in terms of number of countries, it does not actually capture geographic dispersion. A firm that has five subsidiaries in the same geographic region will certainly face fewer differences in structural, strategic and management idiosyncrasies than a firm that has five subsidiaries in five different geographic regions. We judge positively the intention to capture breadth in a measure of DoI, however, the way it was operationalized is rather debatable and probably misleading, when trying to correlate TASI with other variables. Finally, the same consideration already discussed regarding a formative measure and the absence of important facets also apply to this index.

There are an important amount of manuscripts that used other proxies, diverse than the indexes, to measure firm's DoI, based on the assumption that there is more than one way to measure firm's internationalization and that there is still no agreement regarding the appropriate measurement.

Other measurement of DoI

In order to synthesize the theory, in a review of existing literature, Dörrenbächer (2000) presented the different approaches to measure and to compare firm's internationalization. He also separated the measurement variables in the three attributes' classification: performance, structural and attitudinal.

Performance indicators were subdivided in operating income and foreign sales. Foreign sales were subdivided in demand and supply aspects. Demand aspect refers to the extent at turnover is generated in foreign countries and supply aspect refers to the extent to what business activity is transacted by foreign subsidiaries. We have organized the performance indicators in table 1.

----- Table 1 -----

In respect to demand side of foreign sales performance, the measure is very simplistic. For instance, we can suggest different frame of references to be used in the comparison, such as foreign sales ratio to domestic sales, or foreign sales ratio to other competitors' foreign sales. A dynamic perspective could also be included, capturing foreign sales changes and its eventual relationships with strategic changes (see Carneiro, Silva, Rocha, and Dib (2007)).

Moreover, we suggest to measure sales margin, in addition to the measurement of operational income, capturing sales performance without taking into account firm's structure related to international sales effort. In spite of the fact that **sales margin** is a measure difficult to be obtained, the collection of such data will enrich the analysis of firm's international performance through the elimination of financial items related to other facet of DoI, that are taken into account in the operational income comparison. Furthermore, we can speculate that this measure may be less affected by endogeneity (Chang, van Witteloostuijn, & Eden, 2010; Shaver, 1998) than DoI measured by operational income, since less items that may be subjected to endogeneity will be included in the analysis.

Finally, we should highlight that operating income was stated only as an absolute analysis. If the absolute value is an available measure, we also suggest a comparison of the operational income obtained abroad with the one obtained at the local market, providing inferences about company's relative capacity to generate profit from its operational activity on different countries.

The structural indicators synthesized by Dörrenbächer (2000) were subdivided on those related to foreign activities and those related to governance structure. We have organized them on table 2.

----- Table 2-----

We can notice that all the structural indicators are related to firm's internal perspective of foreign activities, what is considered a limited perspective to evaluate the complexity of an internationalized company. We mean that, in an interconnected international business environment, there should be an ample set of indicators that account for firm's interconnections with its business relationships. We base this argument upon assumptions that are different from the neo-classical market theory (Vahlne & Johanson, 2013), which state that markets are networks of relationships (Johanson & Mattsson, 1987; Johanson & Vahlne, 2009, 2011) that enhance resource and knowledge base of firm's (Loane & Bell, 2006), and grant simultaneous access to several foreign markets (García-Canal, López-Duarte, Rialp-Criado, & Valdés-Llaneza, 2002). For instance, we contend that the number of international network ties is an important aspect of firm's structure that should be accounted when evaluating the firm's DoI. This is due to the fact that, in this interconnected business environment, international expansion is less affected by countries borders and more dependent on relationship establishment and development (Johanson & Vahlne, 2003). Internationalization is an inside-network process dependent on and driven by internationalized relationship that may be at home or abroad (Johanson & Vahlne, 2009). However, this

network ties is also a constraint to the subsequent expansion of firms business activities (Johanson & Vahlne, 2011).

Therefore, we argue that the assessment of firm's internationalization should be also related to the network facet of internationalization, which means that, since an internationalization may be ventured through international networks, either being located in the domestic country or in a foreign country, the number of international network ties should be a reflective measurement of DoI, in an absolute or proportional manner. Finally, we would like to call for the fact that this structural attribute of DoI may be an antecedent of a performance attribute (e.g. FSTS), or a consequent of an attitudinal attribute (e.g. international experience of top managers), inferring that the relationships between some DoI facets may be more complex than the representation of a single DoI latent construct (i.e. a single consequent construct of a set of antecedent measurement variables).

The other set of structural attributes: financial indicators, were also considered of high relevance to the internationalization strategy and DoI of firms by Hassel, Höpner, Kurdelbusch, Rehder and Zugehör (2003). The emergent importance of financial internationalization was driven by the increasing competitive pressure, the evolution of a market for corporate control, the increase of equity capital and the evolution of an external labor market for top managers. Therefore, they decided to used three variables to measure the degree of financial internationalization: (1) the Foreign Owners as Percentage of Total Ownership (FOTO) to estimate the actual extent of foreign shareholders; (2) the number of listings in foreign stock exchanges (FSE) to measure of proximity to international capital markets and attempts to attract foreign shareholders; and (3) whether firms use German accounting rules according to German commercial legislation or whether they use international accounting standard, to evaluate their need to communicate effectively with international investors.

Finally, attitudinal indicators were subdivided in “soft” and “hard” by (Dörrenbächer, 2000), being “soft” indicators represented by qualitative indicators, which distinguishes four types of headquarters management's orientation towards their foreign subsidiaries, and “hard” indicators represented by attitudinal indicator which can be better statistically measured. We have organized the performance indicators in table 3.

----- Table 3-----

Our analysis is that attitudinal indicators ought to be further developed. For instance, an account of top management dedication to foreign ventures matters and activities should be captured in an absolute and proportional basis. On the other hand, proportion and size of the head office structure dedicated to international operations and ratio of foreign senior managers to total senior managers should also be evaluated. Since these are comparison of computed values of variables related either to international activities, we judge that they could be used as proxies to evaluate other facets of attitudinal attributes related to firm's internationalization.

In line with our suggestion to further detail the facets related of attitudinal attributes Nielsen and Nielsen (2013) added that the degree of TMT international diversity positively affects firm performance and this positive impact becomes stronger over time. This diversity, together with management international experience, which is called international orientation, was observed to be more beneficial for internationalized firms than for domestic firms. We, therefore, suggest that this is an important attitudinal aspect of the firm's DoI that should be also accounted.

Dörrenbächer (2000) also criticized the use of a single item to represent the DoI, since it would only represent part of the phenomenon. Regrettably, there is a profusion of studies that supposedly investigate the relationship of DoI with only one or two variable. The proxy mostly encountered is the ratio between foreign sales to total sales (FSTS). Hence, even

though it may be easier to obtain values of companies' foreign sales and compare them to total sales, the use of a single item to represent a multifaceted latent variable is usually misleading without the appropriate statistical evaluation of the possibility to surrogate a latent construct for an indicator (Hair Jr. *et al.*, 2010).

For instance, would it be adequate to compare FSTS of a manufacture firm with foreign subsidiaries that has the same value of foreign sales to total sales ratio, but uses only exportation as an international activity? Furthermore, would it be adequate to compare FSTS of two service firms with the same level of foreign sales to total sales ratio but one is a hard service (Erramilli, 1990), while the other is a soft service? Or a manufacturing company that is capital intense with another labor intense? Moreover, how could DoI be evaluated by a single measurement in the case of firms that develop software in a domestic country for exportation and maintain only an office in the foreign country to provide support for its customers? In our opinion, all these questions imply that the DoI should always be evaluated by a multifaceted latent variable.

A MULTIFACETED PROPOSAL FOR DOI

In this next section we will describe our suggested framework to advance the comprehensive and dimensionally-structured conceptualization of the DoI construct. Firstly, we will explain our theoretical grounding and then we will present our new dimensionally-structured conceptualization of DoI.

Theoretical grounding: a resource-based approach

Analyzing the DoI literature, we have not found any latent construct that conceptually represents the facets of firm's DoI in an adequately manner. We suspect that it cannot be represented by a single first order formative construct, and that there is not a single second order construct that could represent coherently the underlying concepts of DoI. Instead, as we

are going to propose, we believe that there should be different latent variables for firm's DoI.

Our proposal is inspired by Aggarwal *et al.* (2011) who alerted that the complexity and dynamism of IB landscape, composed of a rich ecology of firms, would probably preclude the proposal of a single agreed classification system of the firms' DoI. This complexity and dynamism is increasing in the global business environment also as a result of the adoption of modularity architecture of firms that implement standardized interfaces, based on the idea that such architecture "facilitate the implementation of open systems and result in improved communication, allowing for superior knowledge transfer and integration" (McDermott, Mudambi, & Parente, 2013, p.1). This kind of inter-firms organization is implemented based on the expected effects on improvement of firm's capabilities in terms of learning and innovation. It is also a matter of the decision related to the extent over which part of the global value chain firm want and is able to control.

These value-adding chains can be dispersed geographically and governed efficiently also through nonhierarchical means (Koza *et al.*, 2011). Internationalization of firms would be increasingly related to the use of offshore production of goods, high-end services, and the outsourcing of resources previously supplied by the firm, such as product development and research. Some of these offshoring integration would be driven by the rational of modularization, others would be justified by the exploitation of foreign country specific advantage (Dunning, 1998). On the other hand, the "concept of a firm with an internal value-adding process chain to deliver a product to an industry sector as constituting a business is obsolescent in many ways." (Koza *et al.*, 2011, p.29). Therefore, the TMT would be facing to greater extent decisions of strategic assembly of firm concerning which value-adding stages should be kept within firm boundaries, which should be sourced through alliances, or left to the market (Koza *et al.*, 2011).

These global dynamic context have also seen the emergence of INVs (Oviatt &

McDougall, 1994), who were able to internationalize using alternative governance structure and taking advantage of complementary resources of their network partners (Coviello, 2006). The INVs would be, according to our analysis, a phenomenon sometimes directly, sometimes indirectly, related to the modularization of international value chain and to the MNE sourcing decisions. In addition, it has been observed that some emerging multinational enterprises (EMNEs) were able to internationalize, even though they apparently didn't have the traditionally known firm resources' advantages (Barney, 1991; Peng, 2001). This internationalization was noticed to be driven by the desire to access resources that the firm didn't possess, ventured by firms organized in weblink global operations (Mathews, 2006) that offered resources and capabilities to their international partners different than the resources and capabilities owned by developed countries multinational enterprises (Ramamurti, 2012). On the other side, these EMNEs may have formerly benefited from inward internationalization and contact with foreign companies to develop the firm specific advantage required to latter venture an outward internationalization (Luo & Tung, 2007), an explicit example of link between inward and outward internationalization.

As a result, the theoretical grounding that will guide the proposal our analytical model of firm's DoI will be based on four different perspectives regarding firm's internationalization. First, a framework of a generic value chain of the firm, composed by a sequence of inputs, followed by firm's means and outputs. In other words: a single module in a global value chain (McDermott *et al.*, 2013). For an internationalized company, these inputs may be knowledge, financial and materials/services outsourced by the firm through links with foreign companies, outputs may be its products and services offered to its foreign customers (i.e. foreign companies) and firm's means are comprised by its foreign assets, human resources and their internal and external organization.

Second, we will base our analysis in firm's resource-based view (Barney, 1991, 2010),

building on the assumptions of some resource's heterogeneity and immobility across firms. The four categories of resources will be considered: financial (including all "money resources"), physical (technology, plant and equipment, location, and raw materials), human (managerial and non-managerial, including "training, experience, judgment, intelligence, relationships, and insight"), and organizational (such as formal and informal structure, planning and control systems; firm relationships and reputation; organizational culture).

Third, we will make a distinction between inward and outward type of international engagement. As mentioned by Fletcher (2001), firms can internationalized also by inward-driven activities (e.g. indirect importing, direct importing, becoming the licensee for a foreign firm, or being the joint venture (JV) partner with an overseas firm in its domestic market). Inward internationalization may also be the first stage of an internationalization process, followed by an outward internationalization (Korhonen, Luostarinen, & Welch, 1996; Luo & Tung, 2007). Inward process would expand firm's business network to international markets, give access to more business opportunities, contribute to reduce time spent on the establishment of outward phase, and grant interpersonal linkages necessary to international knowledge creation and transfer (Karlsen, Silseth, Benito, & Welch, 2003). In addition, a member of a domestic networks can also trigger initial international expansion in cases where the firm that is already internationalized seek out other firms that are not yet internationalized to accompany them abroad (Chandra *et al.*, 2012; Johanson and Vahlne, 2003), extending their domestic business relationships into foreign markets (Johanson and Vahlne, 2003). Therefore, inward internationalization is also considered in our analysis of DoI facets. We firstly propose that inward internationalization is restricted to input's and means' internationalization. However, we would also like to consider a case of inward internationalization, when firm's output's is offered to a foreign company in the local market, because, as already mention, this initial domestic relationship may trigger future international

expansions. This may be the case, for instance, of a domestic supplier of auto-parts that supply a foreign automobile company in the domestic market and, because of the previous existence of this local relationship with the foreign company, the firm are driven to develop specific advantages that supports a latter the successful internationalization.

And forth, we will consider the existence and extent (i.e. amount and proportion) of international commitment of firm's resources. The resources committed determine the extent to which a firm is capable of exploring opportunities and of facing the challenges posed by competitors in new and existing markets (Barney, 1991, 2010). Previous theoretical and empirical studies have seen resource allocation as a major manifestation of international commitment. Firm's commitment to internationalization is reflected by the resource allocation that affects firm capability of exploring international opportunities (Johanson & Vahlne, 1977, 2009). Investigating emerging market entrepreneurial firms Rocha *et al.* (2012) found different manifestations of commitment to internationalization: allocation of managerial resources, organization resources (e.g. status of the person or organization in charge of foreign operations), mode of entry and operations established, and the existence of a planning for internationalization: all related to company's structure and organization (i.e. what we are calling company's "means"). These manifestations involve the employ of resources on the international venture, whether they are located offshore, whether they are located in the domestic country, but remain related to international activities.

Commitment may be represented by tangible and intangible manifestations. For instance, an offshore investment is a tangible international commitment and may be evaluated in terms of volume and relative measures. On the other hand, a company's official support and a public statement of a top executive supporting a project are two examples of intangible commitments. These intangible manifestations of commitment may sometimes precede future tangible commitments (Rocha *et al.*, 2012). Also in respect to resource commitment, Ripollés,

Blesa, and Monferrer (2012) found that international market orientation influences the decision of INVs to use higher resource commitment entry modes in foreign markets and also enabled new firms to identify and proactively develop new business opportunities in international markets. This international market orientation was generated by a previous entrepreneurial orientation. This finding leads us to infer that the attitudinal commitment represented by international market orientation is a type of resource commitment (i.e. managerial commitment) that is an antecedent of the commitment of physical resources (i.e. asset commitment). Therefore, if we evaluated the DoI of a firm in terms of managerial commitment and assets dedicated to international *versus* domestic operations, it would not be appropriate to consider them as antecedents of the same DoI construct, because one would precede the other. However, if we are to analyze the structural attribute of managerial commitment (i.e. proportion of managers at foreign subsidiaries versus total manager's headcount) with proportion of foreign assets, we may conclude that this is not a relationship of antecedent and consequent variables, but a relationship of interdependence of variables that may be part of the same construct.

Moreover, Pedersen and Petersen (1998) found that resource commitment to a foreign market is driven by factors derived from different theoretical perspectives: (1) the accumulation of knowledge about the foreign market; (2) the company's growth and broadening of product range; (3) the foreign sales growth; and (4) the integration of national markets. The first three are internal factors and the others are external factors. However, the internal factors differ according to the fact that knowledge may be an input or an internally developed aspect of company's means; while growth and product range are related to company's outputs. Again, is it possible to consider interconnections between DoI facets to form a single construct (i.e. index) when they are referring to different aspects of a company's value chain not forcedly related? Company's outputs may be internationalized, while means

and inputs are not (e.g. exportation). On the other hand, inputs may be internationalized, while operations and outputs are not (e.g. international outsource). Also, is it adequate to consider equivalent two companies with the same DOI_{INTS} index value, but one being an example of an exporting company and the other an example of a company that has undertaken an FDI? We judge that it is not advisable to adopt a single latent concept of DoI to compare these firms' internationalization. We argue that DoI is composed of a fragmented composition of subset of facets representing different latent concepts of DoI that do not relate to the same theoretical domain of concept.

Inputs, Means and Outputs: a new dimensionally-structured conceptualization

In this sub-session we present a new dimensionally-structured conceptualization of DoI construct with three different facets.

The baseline for our proposed model of conceptualization of DoI is represented by the framework in figure 1 that represents in a reductionist manner a module of a generic value chain. According to this framework, our proposed model implies that there are three different broader possibilities of internationalization: (1) the internalization of firm's inputs, (2) the internationalization of firm's means, and (3) the internationalization of firm's outputs. Distinction between internationalization of inputs, means and outputs is the key point of our proposed model, since we consider that they represent different manifestations of firm's international commitment (i.e. different latent concepts), which are driven by different strategic motives and represent distinct strategic implications.

This framework is our reference to analyze three different latent concepts that may be involved in firm's internationalization process: degree of internationalization of firm's inputs (DOI_{inputs}), degree of internationalization of firm's means (DOI_{means}), and degree of internationalization of firm's outputs (DOI_{outputs}). In a firm's internationalization process one, some or all of this latent concepts may be observed, depending on the characteristics and

complexity of the firm's international commitment.

----- Figure 1 -----

In respect to the internationalization of firm's inputs, firm would internationalize to have access to knowledge, financial resources and materials/services available in a foreign country. This process would be driven by either a resource seeking internationalization strategy, or an efficiency seeking strategy (Dunning, 1988), or both, what frequently involves the search for a reduction on firm's costs. On the other hand, the internationalization of firm's means would involve the internationalization of firm's tangible and intangible assets, human resources and also implicating on the internationalization of its organization, whether internal (e.g. subsidiaries and other aspects of firm's internal organization), whether external (e.g. international networks relationships). This process would be driven by a strategic asset seeking and/or an efficiency seeking strategy (Dunning, 1988), also involving the search for a reduction on firm's costs, or an increase in firm's revenue through an increase of production capacity. One could argue that the internationalization of firm's means could also be driven by a resource seeking strategy, but we disagree, since outsourced resources are considered inputs in our framework, while an internal (or acquired) resource is a company's asset. Finally, the internationalization of firm's outputs would involve the internationalization of its products or services delivered to the market. This process would be driven by a market seeking strategy (Dunning, 1988) and would have direct impact on firm's revenue.

As it may be noticed, different perspectives of firm's internationalization refer to different motives, different impacts and different parts of firm's value chain. In a business environment characterized by fragmented and interconnected global value chains we consider this approach an appropriate framework to analyze firm's internationalization and, consequently, the appropriateness of the use of the proposed three different latent concepts of firm's DoI in international business studies. We, additionally, argue that these three different

latent concepts are part of different aspects of firm's value chain that are not forcedly interdependent. In a macro perspective, the fact that firm's outputs are internationalized does not implicate on the internationalization of firm's means, or inputs. On the other hand, the fact that firm's inputs are from foreign sources (i.e. internationalized) does not implicate on the internationalization of firm's means, and outputs. And finally, the fact that firm's means are internationalized does not forcedly mean that firm's outputs are sold in the international market, since the firm can send back its international production (e.g. intermediary products) to the domestic part of the firm. Therefore, it is our contend that it is not possible to consider the existence of a second order latent construct of DoI composed by these three different latent concepts (Rindskopf & Rose, 1988). Supporting some previous critics to existing DoI concepts used by IB researchers, we argue that DoI is a multifaceted and fragmented concept that should be evaluated by the three different latent concepts of DoI.

In order to detail the facets of these three latent concepts, we summarize the facets discussed in this text that are respectively associated with each of them. These facets of the three latent concepts are presented in tables 4, 5 and 6. All the three tables detail whether it is an inward or outward perspective.

----- Table 4-----

----- Table 5-----

----- Table 6-----

These facets are evidently not measurement variables. Thus, further construct development requires that these facets be developed into operationalized measurement variables and then tested to evaluate construct validity and reliability (MacKenzie, 2003). However, this is beyond our proposal. Our objective was only to advance a comprehensive and dimensionally-structured conceptualization of the firm's "degree of internationalization" construct.

CONCLUSIONS

With this manuscript we have contributed to one important call from previous IB researchers: to develop a new comprehensive and dimensionally-structured conceptualization of the firm's "degree of internationalization (DoI)", not yet available in the literature, although its extreme importance.

Our proposed conceptualization is original in two aspects: (1) it is the first conceptualization of DoI that take into account firm's commitment to international activities as an underlying concept that permeates all facets of degree of internationalization, and (2) it is the first conceptualization that proposes that DoI should be evaluated by three not compulsory related latent concepts: DoI_{inputs}, DoI_{means} and DoI_{outputs}.

We further advanced the conceptualization by listing the different facets related to each one of these latent concepts, defining the boundaries of each construct. However, we have not discussed its operationalization in terms of definition of its measurement variables.

As a downturn, we recognize that the dimensionally-structured conceptualization of DoI is very complex, what may extremely complicate its empirical and practical use. To this argument we cannot provide an answer at this moment because it is too premature to confirm its complexity without the appropriate statistical evaluation through a confirmatory factor analysis (Hair Jr. *et al.*, 2010), that may eventually reduce the number of indicators in a reflective construct. At the same time, we have already mentioned that it is not advisable to use one of the proposed latent concepts of DoI that is not related to an empirical phenomenon under study, what may contribute to reduce the complexity inherent to our proposal depending on its empirical use. On the other hand, the adoption of our proposal will force the researchers to evaluate and consider, or not, each the facets just described, provoking a more rigorous analysis of firm's degree of internationalization.

We have also contributed to IB literature by expanding the discussion regarding the

misconception of previous DoI indexes available at the IB literature, mentioning further expanding reasons why researchers and managers should not use these indexes in their empirical and practical works. Further, we have joined other researchers alerting that the use of surrogate variables to measure DoI is frequently a misleading methodological procedure, because of the intrinsically multifaceted concept of DoI, not fully represented by a surrogate measurement variable.

Limitations and Suggestions for Future Researches

Although we have extensively undertaken a bibliographical research to obtain the relevant references related DoI, and though we have discovered that this is a relevant subject of international business research that counts on a very sparse bibliography related exclusively to its conceptualization, even though we have included the most cited manuscripts, we cannot guarantee that we have included all the relevant references. As a consequence, we cannot guarantee that we have exhausted the possibilities of proposed items to represent the different facets of DoI.

On the other hand, we would like to evoke the fact that we are not including the dynamic capabilities theory in our analysis (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997). We have based on Barney's resource-based view. Maybe, a future development should examine the contribution of the dynamic capabilities concept to any facet of firm's commitment to internationalization and incorporate a missing facet to our proposed latent constructs. Additionally, we have not analyzed some mentioned competitive advantages of EMNEs (Ramamurti, 2012), what could also contribute to our research.

Furthermore, we have not included in our analysis the concepts of depth, breadth (Aggarwal *et al.*, 2011; Ietto-Gillies, 1998, 2009) and heterogeneity (Kotabe, Srinivasan, & Aulakh, 2002) in the internationalization of a firm. We recommend the inclusion of these concepts in the scope of a study that would have the intention to develop measurement

variables to operationalize the constructs proposed, and test validity and reliability.

We have implicitly focused on an analysis of an international or multinational firm. An analysis of a transnational corporation (Bartlett & Ghoshal, 1989) would add more complexity to the phenomenon that was not in the scope of our discussion, such as foreign sales among foreign subsidiaries, or trade of inputs among foreign subsidiaries. This adds a complexity that was not in the scope of our analysis and should, thus, be included in future developments of the conceptualization proposed.

As our intention was to exclusively adhere to our objective to conceptually scrutinize the theoretical concept of firm's DoI, in order to contribute to the future development of a better measure, we have proposed an extremely complex set of indicators that may be impossible to operationalize. However, we encourage that may specify the use of the different latent concepts and contribute to the refinement and further development of DoI latent concepts presented.

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TABLES AND FIGURES

Table 1:
Performance indicators of DoI

Aspect	Foreign sales		Operating income
	Demand	Supply	
Description	Amount of foreign sales by customer location	Amount of sales of foreign affiliates	Amount of operating income of foreign affiliates
Measures	Total exports from the home country + total revenues of foreign affiliates - revenues of foreign affiliates to the home country	Ration between the turnover of foreign subsidiaries to the sum of turnover of the parent company and its national subsidiaries	sum of operating income generated by all foreign affiliates

Source: Adapted from Dörrenbächer (2000)

Table 2:
Structural indicators of DoI

Aspect	Related to foreign activities		Related to governance structure	
	Amount	Ratio	Amount	Ratio
Description	Amounts related to foreign activities indicators	Ratios related to foreign activities indicators	Amounts related to governance structure indicators	Ratios related to governance structure indicators
Measures	n° of countries a company is active in			
	n° of foreign affiliates	proportion of foreign affiliates	n° of stock markets on which a company is listed	
	n° of cases of non-capital involvement abroad*	proportion of cases of non-capital involvement abroad*	amount of shares owned by foreigners	proportion of shares owned by foreigners
	amount of foreign assets	proportion of foreign assets	n° of non-nationals in the board of directors	proportion of non-nationals in the board of directors
	amount of value added abroad	proportion of value added abroad		
	amount of sourcing abroad	proportion of sourcing abroad		
	number of foreign employees	proportion of foreign employees		

* e.g. strategic alliances, franchised operations

Source: Adapted from Dörrenbächer (2000)

Table 3:
Attitudinal indicators of DoI

Aspect	Soft	Hard
Description	Ethno-, poly-, regio- or geocentric management style	International experience of top managers
Measures	organizational complexity	cumulative duration of the years top managers spent working abroad weighted by the total years of their working experience
	authority/decision making	
	evaluation/control	
	rewards/punishment	
	communication/information	
	recruiting/staffing	

* e.g. strategic alliances, franchised operations

Source: Adapted from Dörrenbächer (2000)



Figure 1:
Framework used to develop a proposed DoI measure

Table 4:
Facets of Firm's DoI of Inputs (DoI_{inputs})

	<u>Inward</u>	<u>Outward</u>
Knowledge	Product technology* Process technology* Administrative knowledge*	
Financial	Debts with foreign lenders Shares owned by foreign investors International accounting standards	Credits with foreign borrowers* Foreign equity owned Stock listed in foreign markets
Materials/Services	Direct/Indirect importing	

*proposed by the authors

Table 5:
Facets of Firm's DoI of Means (DoI_{means})

	<u>Inward</u>	<u>Outward</u>
Assets	Foreign proprietary asset outsourcing Foreign brands acquired*	Assets owned abroad License of own brands in foreign countries*
People	Foreign employees in domestic market Senior management of foreign origin Foreigners in TMT	Foreign employees abroad Senior management abroad Expatriate employees
Internal Organization	International structure at head office Local management dedication to foreign ventures Social support to local relationship with foreign companies*	Foreign affiliates abroad Planning intensity for international activities Social support to foreign ventures
External Organization	Local network ties with foreign companies JV with foreign company in the domestic market Domestic commercialization agreement with foreign firm	Foreign network ties JV with foreign company in the foreign market License to foreign firm commercialize company's outputs

*proposed by the authors

Table 6:
Facets of Firm's DoI of Outputs (DoI_{outputs})

	<u>Inward</u>	<u>Outward</u>
Products	Products sold to foreign companies in the domestic market	Products sold to foreign countries:
Services	Service provided to foreign companies in the domestic market:	Services provided in foreign countries: Product technology* Process technology* Administrative knowledge*

*proposed by the authors