

Measuring Export Readiness Using a Multiple-Item Index

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Abstract

Since the 1970s the internationalisation process of firms has attracted wide research interest. One of the dominant explanations of firm internationalisation resulting from this research activity is the Uppsala stages model. In this paper, a pre-internationalisation phase is incorporated into the traditional Uppsala model to address the question: What are the antecedents of this model? Four concepts are proposed as the key components that define the experiential learning process underlying a firm's pre-export phase: export stimuli, attitudinal/psychological commitment, resources and lateral rigidity. Through a survey of 290 Australian exporting and non-exporting small-medium sized firms, data relating to the four pre-internationalisation concepts is collected and an Export Readiness Index (ERI) is constructed through factor analysis. Using logistic regression, the ERI is tested as a tool for analysing export readiness among Australian SMEs.

Key Words:

Firm internationalisation, pre-internationalisation, export readiness, lateral rigidity

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Introduction

Since the 1960s, the study of firm internationalisation has attracted much research attention and today, this research domain remains highly relevant in the global context. Accelerating globalisation driven by falling trade barriers and advances in technology, has resulted in significant growth in world trade and international businesses generally (Johnson, Lenartowicz & Apud, 2006). According to WTO (2009) statistics, international business, if measured by the value of international trade, has actually increased by more than fivefold since the mid-1980s. With international businesses gaining more prominence, understanding the nature and development of international firms, especially small and medium firms, continues to be an important area of interest among researchers and practitioners (Knight & Cavusgil, 2004; Knight & Kim, 2009).

One prominent school of research in firm internationalisation that emerged during the 1970s focused on the sequential nature of the internationalisation process. This school of research is dominated by stages theories such as the Uppsala model (Johanson & Vahlne, 1977) and the Innovation model (Bilkey & Tesar, 1977) that describe the internationalisation of firms as a gradual learning process of increasing international involvement marked by various stages. However, a notable criticism of these models is that they do not explicitly address how the sequential process of internationalisation originates (Lamb & Liesch, 2002; Luostarinen & Welch, 1990). An early research attempt at analysing firms' pre-internationalisation behaviour was proposed through a conceptual pre-export model in the mid-1970s (Wiedersheim-Paul, Welch & Olson, 1975). Although this model was later adopted by Caughey and Chetty (1994) in a case study on New Zealand firms, there has been little scholarly research that has expanded on this theme. This is the case in spite of continuing discussion and citation of the Uppsala model (see for example Forsgren & Hagström, 2007; Johanson & Vahlne, 2006; Tan, Brewer & Liesch,

2007). It seems that research into new, exciting international business issues, such as born globals, has distracted attention from other important and pre-existing unanswered questions. This research gap is noted in Tan, Brewer and Liesch (2007) where they proposed a pre-internationalisation phase model to complement the Uppsala theoretical framework. They introduced the concept of internationalisation readiness as a point of assessment that links a firm's pre-internationalisation phase with its initial international commitment. However, to our knowledge, no empirical work has yet been undertaken in this area.

This paper addresses the important question: “where does the internationalisation process begin?” by identifying and operationalising the antecedents to Uppsala type firm internationalisation. By so doing, it contributes to better theoretical understanding of internationalisation, to better understanding by practitioners of their firms' internationalisation prospects and also to improved public policy design of export promotion programs. While it is recognised that there are several paths to internationalisation, this paper focuses on those SME firms that follow a traditional Uppsala path to internationalisation. By definition these firms take their first step on the internationalisation path through export rather than through the various other modes of entry (such as foreign direct investment or licensing). Therefore the paper is as much about export readiness as internationalisation. In the interests of clarity, we use the term export readiness within the paper, but recognising that, for Uppsala firms, this is synonymous with internationalisation readiness. The extension of the traditional stages theories to include a pre-internationalisation phase promises benefits in contributing towards a more complete understanding of the internationalisation process of firms. Indeed, the need to continue developing and expanding the Uppsala model has been underlined by two of its original proponents (Johanson & Vahlne, 2009) who note that the original model “says nothing about the beginnings of internationalization” (p.1416).

This paper has two key objectives: first, to establish the importance of export readiness as a pre-internationalisation concept that can be positioned as an extension of the Uppsala Model;

and second, to develop a practical firm Export Readiness Index (ERI). The paper begins with a review of the literature on the internationalization process of the firm and it identifies internationalization/export readiness as a potentially important concept within the Uppsala model. The major factors constituting export readiness are identified and discussed. The study then describes a survey undertaken with Australian firms, eliciting data hypothesised to be important to their export readiness. Factor analysis is used to distil the significant items conjectured to comprise readiness and an index based on those items, duly weighted, is constructed. The validity of the ERI is tested and its potential application and implications discussed. Finally some limitations and directions for future research are canvassed.

Theoretical Underpinnings of Uppsala Internationalisation Readiness

Internationalisation readiness recognises a firm's potential transition from a purely domestic firm into an international firm. Liesch and Knight (1999: 386) state that "readiness for involvement in international markets can be interpreted as being a function of its state of informedness on target foreign market(s) and the means for entering them." In this study, we define internationalisation readiness as a firm's preparedness and propensity to commence export activities overseas. As an extension of the Uppsala model theoretical framework the pre-internationalisation phase is a learning stage experienced by firms in achieving export readiness.

The Uppsala model's theoretical framework (Figure 1) builds on an assumption that firms internationalise through a series of incremental decisions that are framed through a link between 'state aspects' and 'change aspects' (Johanson & Vahlne, 1977). This framework is underpinned by the early behavioural-based literature of Penrose (1959) and Cyert and March (1963) which highlights the sequential nature of a firm's experiential learning in foreign commitment decisions. The Uppsala model explains that firms internationalise in stages, and their increasing foreign involvement is the result of

interplay between knowledge acquisition and market commitment (Johanson & Vahlne, 1977; Johanson & Wiedersheim-Paul, 1975). Underlying the internationalisation process as described in this model is the premise that a firm's learning experience, through knowledge gained in the foreign markets, will help to advance its degree of commitment internationally (Steen & Liesch, 2007). Lack of knowledge is perceived as a risk factor and this uncertainty is "reduced through incremental decision-making and learning about foreign markets and operations" (Johanson & Wiedersheim-Paul, 1975: 306).

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One of the most significant criticisms of the Uppsala model theory is that it does not describe the starting point of the internationalisation process. Welch (1977) argues that there is a need to backtrack on the process of international commitment in order to understand how an internationalisation orientation first originated within a firm. In Tan *et al.* (2007), a pre-internationalisation phase is proposed to provide a point of origin for the Uppsala theoretical framework. It describes a state that firms experience prior to their initial foreign market commitment. Here, the export readiness construct is identified as the initial point of potential transition from which a firm first enters the internationalisation process described in the Uppsala theoretical framework; when a firm initiates its first export decision, it exits the pre-internationalisation phase. If it decides not to export, it remains within the pre-internationalisation phase where the learning process continues. In this paper we pursue the idea that for international firms there must be a pre-internationalisation phase that can be studied and incorporated into the Uppsala internationalisation model. The degree to which firms are ready for internationalisation should also be measurable in accordance with the constructs defining readiness. This is illustrated in a reframed Uppsala-based pre-internationalisation model (Figure 2).

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It is true that the Uppsala internationalisation model has been criticised on several grounds over the years. Several researchers have pointed to the idiosyncratic behaviour of firms and describe the Uppsala model as too deterministic (eg Turnbull, 1987); some claim it does not take account of firms which leapfrog the model's stages process and which become international on or about the same time as they enter the domestic market (Axinn & Matthyssens, 2002). Whilst these (and others) are valid criticisms, rather than reflecting the invalidity of the Uppsala model they rather more point to the fact that one conceptual framework is unlikely to be able to capture the entire spectrum of internationalisation processes. In fact, there are different internationalisation "pathways" (Bell, McNaughton, Young & Crick, 2003; Jansson & Sandberg, 2008), including not only the Uppsala model but also, for example, the network model (Meyer & Skak, 2002) and the innovation model (Andersen, 1993), and the born global perspective (Knight & Cavusgil, 1996).

In essence, firms are idiosyncratic and there are several alternative explanations for internationalisation. For example, born global firms by definition do not follow the Uppsala stages of internationalisation process as these firms commence international operations early (Knight & Cavusgil, 2004). For these firms, some special factors ignite their interest in the international markets at the same time or before their domestic market interest, and "this process (of internationalisation) differs considerably from that followed by traditional internationalising SME's" that experience a stages approach (Gabrielsson, Kirpalani, Dimitratos, Solberg & Zucchella, 2008). Thus the Uppsala internationalisation model, whilst venerable and much cited, is not the only path to foreign markets. However it does remain a model that captures the internationalisation process of many firms (Du, 2003) and therefore the extension of it to include the pre-internationalisation phase is a valuable contribution in the context of Uppsala type firms.

Defining the Relevant Constructs

A search of the literature published during the development of the Uppsala model, and subsequently, reveals four key constructs associated with the model. These constructs are exposure to stimuli, attitudinal/psychological commitment, firm resources and lateral rigidity. This section discusses the origins and significance of each.

The earliest literature that addresses the issue of pre-internationalisation is a conceptual paper by Wiedersheim-Paul, Welch and Olson (1975) where a pre-export model was first proposed. This study, which was later updated in Wiedersheim-Paul, Welch and Olson (1978), complements the bulk of behavioural-based firm research and supports the Uppsala model's proposition that internationalisation is a complex process of organisational learning through which the acquisition of appropriate knowledge leads to an incremental foreign commitment (Andersen, 1993; Johanson & Vahlne, 1977; Lord & Ranft, 2000). Based on the concepts defined in this early literature and the theoretical underpinnings of the behavioural-based approach to internationalisation, the pre-internationalisation phase model (Figure 2) is composed of the following four constructs that characterise the experiential learning process leading to a firm's export commencement.

Exposure to Stimuli Wiedersheim-Paul *et al.*'s (1975; 1978) pre-export model identifies the importance of a decision-maker's exposure to and recognition of relevant information through stimuli sources which act as "motives, incentives, triggering cues or attention evokers" (Leonidou, 1998: p. 43). Export stimuli have been extensively discussed in the literature (Aaby & Slater, 1989; Bilkey, 1978; Caughey & Chetty, 1994; Evangelista, 1994) and these stimuli, both internal and external, impact on a firm's initial international involvement as well as its subsequent development (Bilkey, 1978; Dichtl, Leibold, Koglmayr & Muller, 1984; Leonidou, 1995; Morgan, 1997).

Internal stimuli refer to the driving forces that originate as a result of a firm's history, its products, or its management characteristics (Aaby & Slater, 1989; Bilkey & Tesar, 1977; Knight & Cavusgil, 1996; Oviatt & McDougall, 1994). These include factors such as organisational commitment and managerial aspirations toward internationalisation, the potential for international success due to the possession of unique or innovative products, or having excess capacity to fulfil international expansion goals. Firms are exposed to external stimuli through their daily operations. These factors could arise from both the domestic or international environment. A firm could be stimulated to commence exporting due to unsolicited orders or inquiries from new foreign customers, through encouragement from its domestic or foreign business partners, or simply due to heightened domestic competition that calls for internationalisation (Cavusgil, 1984; Dunning, 1993; Johanson & Mattson, 1988). Both internal and external stimuli share a linked and complementary relationship (Caughey & Chetty, 1994).

Attitudinal/Psychological Commitment How information presented through stimuli exposure is acted on by a firm depends on the attention and interest it is likely to induce with the decision-maker. Miesenbock (1988) notes that stimuli factors may not be effectively utilised by a firm unless the decision-makers within the firm have the ability to perceive and act on them. Being exposed to a stimulus, an

impulse may be triggered which impacts on the decision-maker. This impulse may or may not lead to further involvement but it may instil in the decision-maker some form of attitudinal or psychological commitment such that it could compel attention to be shifted towards foreign opportunities. This may trigger further information search or evaluation of alternatives regarding future firm strategies (Aharoni, 1966). This type of commitment is prevalent in the pre-internationalisation phase and it describes the decision-maker's psychological and attitudinal stake associated with motivation and involvement which is distinguished from the more common interpretation of commitment in the form of resources (Gundlach, Achrol & Mentzer, 1995; Nieminen & Törnroos, 1997). This has been highlighted by Nieminen and Törnroos (1997) as the distinctive difference between commitment on an 'individual' level that relates to a decision-maker's dedication to accept change and new methods, and commitment on an 'organisational' level that relates to a firm's investment of resources. Niemen and Törnroos (1997) distinguish between the commitment on an individual level (i.e. the manager) and commitment at the organisational level (i.e. the firm). We emphasise here that attitudinal/psychological commitment is an individual phenomenon which will ultimately decide the commitment of resources through the firm.

During the pre-internationalisation phase, the typical psychological/attitudinal commitment behaviours exhibited by decision-makers as a response to stimuli include information search on potential international markets, holding staff meetings for discussion and planning regarding the possibility of internationalisation and engaging in formal market research programmes to evaluate the alternatives regarding a firm's future strategies. Resource commitment occurs only after a decision-maker decides to take an additional step into the internationalisation process. This, highlighted as a 'state' to 'change' aspect transition according to the Uppsala theoretical model, shows a firm's desire to commit resources through its decision-maker's perception and evaluation of problems and opportunities in a foreign market (Blomstermo & Sharma, 2003).

Lateral Rigidity The above discussion on attitudinal/psychological commitment presumes that the decision-maker would respond favourably to stimuli by taking a positive step through greater involvement in export preparation activities. However, studies have shown exposure to stimuli factors alone to be insufficient as a cause of a firm's future foreign market commitment or an export commencement decision (Dichtl *et al.*, 1984; Olson & Wiedersheim-Paul, 1978). It is possible that a decision-maker could either choose to ignore or to offer only a passive response to stimuli due to the perception of (or the actual presence of) internationalisation barriers. This moderating effect in the experiential learning process has been described in Luostarinen (1979) as lateral rigidity, a behavioural characteristic that is a typical feature at every stage of a decision-making process that causes inelasticity in decision-making.

According to Luostarinen (1979: 44), the inclusion of lateral rigidity “adds to the understanding of why all the decisions leading to implementation do not necessarily go neatly through the whole process and why to become exposed to an impulse is a necessary but not sufficient condition for the company to become engaged in reaction, search and choice.” Lateral rigidity could be the result of decision-makers' limited perceptions of stimuli due to the firm's unfavourable geographic position or its inactive information search, restrictive reaction to stimuli due to the firm's lack of appropriate resources demanded, ad-hoc strategies and policies that result in selective, simple-minded or biased information search, or due to the firm being confined by preferred or familiar choices and alternatives because of its high level of complacency, uncertainty avoidance or risk aversion (Luostarinen, 1979). It can represent psychological barriers to managers taking the decision to internationalise their firm. Other examples of lateral rigidity may be an opinion on the part of decision makers that internationalisation represents an unacceptably high level of risk to the firm or an attitude of complacency in the sense that the firm is returning profit sufficient for the satisfaction of owners without internationalisation. Explicitly, lateral rigidity incorporates those factors that constrain the firm in its decision making from moving from a state

aspect to a change aspect (Johanson & Vahlne, 1977) when all other factors imply that change would be advantageous.

Firm Resources The Wiedersheim-Paul *et al.* (1978) pre-export framework suggests that a fundamental link between a firm's experiential learning process and its export commencement is established by a decision-maker's perception regarding the characteristics of the firm's resources. The importance of a firm's tangible and intangible resources for its long-term sustainable competitive advantage is well-discussed, particularly in the resource-based perspective (Andersen & Kheam, 1998; Wernerfelt, 1984). It is consistent with the Uppsala model approach which links a firm's resource capability with its increasing international commitment. This notion of internationalisation as a strategic, ongoing process of continuing development and allocation of resources in firms is highlighted in Melin (1992).

The role of firm resources has been extensively explored in the literature. Resources have been defined as both tangible and intangible inputs into a firm's operational process that include a firm's financial or human-related attributes (Hitt, Ireland & Hoskisson, 1999), product attributes such as features and quality (Khalili, 1991; Louter, Ouwerkerk & Bakker, 1991), investment in research and development (Reid, 1981), technological attributes (Aaby & Slater, 1989), distribution channel and control systems (Louter *et al.*, 1991), and management attributes such as skills and knowledge (Axinn, 1988; Bilkey, 1978). According to the pre-export literature, a decision-maker's perception regarding a firm's relative resource strength and attributes is central to the firm's stimuli response and foreign market commitment decision (Wiedersheim-Paul *et al.*, 1975; 1978). In relation to discussion in the previous section, lateral rigidity could also be caused by a decision-maker's perception of risk and uncertainty due to resource inadequacy (Luostarinen, 1979).

Developing the Export Readiness Index (ERI)

The primary purpose of this study is to build on the theoretical foundations of internationalisation readiness and the relevant constructs, as discussed above, to develop an appropriate index of export readiness. This section describes the procedures used in the development of the index.

The Export Readiness Survey The first step in the index construction was to assess the pre-internationalisation experience of Australian SMEs through a focus group discussion and follow up interviews with seven SME firms. Three of these firms were exporters and four were not. They were selected from a local business association that places a strong emphasis on assisting members to internationalise. The exporters were all Uppsala type firms in their internationalisation process although none had yet progressed to the FDI stage. These firms assisted in understanding the issues behind export readiness, and were an important element in the development of the items in a subsequent survey questionnaire, along with relevant literature sources.

The next step was to assess the pre-internationalisation experiences of a large sample of Australian SME's through distribution of a questionnaire. The questionnaire contained 142 questions spread across the four major constructs: exposure to stimuli, attitudinal/psychological commitment, firm resources and lateral rigidity. The items were derived from the literature and interviews and reflect the authors' attempts to cover all relevant issues. Consequently, significantly more items were included for constructs with extensive associated literature, such as resources, than those relatively unexplored, such as lateral rigidity. The questionnaire was then pre-tested to ensure there is no ambiguity or bias with the assistance of academics involved in international business research and with one of the focus group firms. After a few amendments, (for example in clarification of some items), the questionnaire was finalised. Since the study will utilise factor analysis as an analytical technique, the final items in the questionnaire were further tested for substantive validity according to the procedures proposed by Anderson and Gerbing (1991). The

questionnaires were mailed with a covering letter and return envelope to the CEO's of 4000 Australian SMEs, selected randomly from a wide range of industries. The sample consisted of both exporters and non-exporters in approximately equal numbers so as to incorporate experiences and views of both categories. The mailing list of 4000 firms was purchased from a professional listing firm that specialises in sampling.

Survey respondents were asked to respond to the items using a 5 point Likert scale; 1 = strongly agree, 2 = disagree, 3 = neither agree nor disagree or undecided, 4 = agree and 5 = strongly agree. Following a previous study on the impact of stimuli factors to exporting (Leonidou, 1998), participants were asked under the 'Exposure to Stimuli' category, how strongly they agreed that they would be stimulated by a range of stimuli factors (example item: "An unsolicited enquiry is received from abroad."). Under the 'Attitudinal/Psychological Commitment' category, questions were framed around issues highlighted in previous work by Miesenbock (1988) and Allen and Meyer (1990). Participants were asked how strongly they would respond to favourable export stimuli (example item: "After we've been exposed to a favourable export stimulus, we would try to seek more information from a local government agency."). Under the 'Firm Resources' category, participants were asked how strongly they agree that the importance of various resource attributes highlighted in the literature by Wernerfelt (1984), Aaby and Slater (1989) and Teece, Pisano and Shuen (1997), would impact on a firm's initial export commencement (example item: "Firm has patents or trademarks for its technology."). Finally, 'Lateral Rigidity' is a concept not yet operationalised in the literature but first introduced by Luostarinen (1979). Following Luostarinen (1979), we frame items that asked all participants to consider the extent to which an initial decision to commence exporting could be prevented in the presence of a range of rigidity issues (example item: "We do not wish to expose ourselves to any form of uncertainties about things that may not work out right.").

The returned surveys were inspected for completeness and consistency and a total of 290 were useable, of which 189 were from exporting firms and 101 were from non-exporting firms. This represents a response rate of about 7%. This low response rate was primarily due to two factors. Firstly, the mailing list used was very large and contained many errors. Many envelopes were returned to sender as the firm had closed, moved or the address was simply wrong. Secondly, a large number of questionnaires were not fully completed. This probably was due to its considerable length. However the low response rate was not considered problematic. According to Alreck and Settle (1995: 35) direct mail “response rates are often only about 5 or 10 per cent” and such response rates are evident in other large empirical studies (eg. Ahmed, Aoieong & Zheng, 2005; Tan & Wisner, 2003; Ward & Zhou, 2006). The sample size is also well above the minimum recommended sample size of 100 for factor analysis (Hair, Anderson, Tatham & Black, 1998). At 290, the sample size is well above the “rule of 200” (Gorsuch, 1983) and is also consistent with the “significance rule” (Lawley & Maxwell, 1971). Characteristics of the sample are shown in Table 1.

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The descriptive statistics of the respondents, as presented in Table 1, indicate that they are an adequate representation of the sample’s randomness and diversity, and are not subject to non-response bias.

Constructing the ERI: Considerations and Procedure In this study, the proposed ‘export readiness’ latent construct is analysed with the observed indicators: ‘exposure to stimuli’, ‘attitudinal/psychological commitment’, ‘firm resources’ and ‘lateral rigidity’. As an index measure, the ERI can be constructed through either a reflective or a formative approach. The reflective approach is commonly used in psychological studies (such as in measuring job

satisfaction, personality and attitude) while the formative approach is commonly used in economics studies (such as in measuring human development and globalisation) (Coltman, Devinney, Midgley & Venaik, 2008). In this case, the ERI is established as a reflective measure based on the guidelines suggested in Coltman *et al.* (2008). First, the latent construct in this study represents a phenomenon that exists independently of the observed indicators. In terms of ‘causality’, each of the four observed indicators proposed in this study reflects a feature of export readiness on its own. Also, all four observed indicators share a common theme as each is a reflection of the decision-maker’s perception and experiential learning. In contrast, a latent construct in a formative measure is dependent on the combined effect of its observed indicators, which unlike a reflective measure, do not share a common theme and are only hypothesised to explain a phenomenon when combined as a composite (MacCallum & Browne, 1993; Diamantopoulos & Winklhofer, 2001; DeVillis, 2003; Coltman *et al.*, 2008).

Factor analysis has been proposed as an appropriate method for use in the construction of an index measure, both as a preliminary assessment tool to analyse the suitability of a data set and also as a methodological tool for exploring and grouping the data set for further analysis (Nardo, Saisana, Saltelli, Tarantola, Hoffman & Giovanni, 2005). The main objective of factor analysis is to explore the underlying dimensions within a data set by summarising information contained in a large number of items into a reduced number of representative factors (Zikmund, 2003). In this study, the use of factor analysis allows the 142 items to be reduced to a smaller number of factors.

A series of exploratory factor analyses was conducted using SPSS to refine the items in our data set. In each analysis, only factors with an Eigen value greater than 1 were extracted in accordance with standard guidelines in factor analysis (Hair *et al.*, 1998). Using varimax rotation, items with low loadings were dropped. The items retained during the first factor analysis were subject to a subsequent factor

analysis, and this process of factor extraction and item removal for re-factor analysis continued until the optimal set of factors were extracted with no lowly loaded items that could be further removed. Statistical guidelines identify a factor loading of 0.35 and above to be significant for a sample size of about 250 based on a .05 significance level (α), a power level of 80%, and with standard errors assumed to be twice those of conventional correlation coefficients (BMDP Statistical Software, 1992). This study adopts a stricter guideline and accepts the factor loading of .40 and above as the retention criterion for each factor analysis process. This is consistent with Floyd and Widamans' (1995) argument that loadings in the .40 range and above can be considered substantial. The process began with factor analysis being conducted within each individual category of the observed indicators before a full factor analysis was conducted using the retained items for all categories.

Through this procedure of factor analyses and additional data refinement, a total of 12 factors were extracted using the scree test criterion, where the maximum number of factors was extracted before the scree plot demonstrated straightening (Cattell, 1966). The 12 factors extracted explain 59.76% of the total variance and retained 58 of the original 142 items. At 59.76%, the total variance accounted for by the extracted factors was within the 50% to 60% threshold accepted in social science research (Hair *et al.*, 1998, Netemeyer *et al.*, 2003). A majority of the items retained at this stage exhibited loadings of above .60 and .70 and all were above .40.

A confirmatory factor analysis was also conducted using AMOS to test the model fit of the 12 extracted factors and their corresponding items. An evaluation of the fit indices shows a mixed result in terms of model fit. The Normed Chi-Square (χ^2/df), the most commonly used fit measure, is 2.289 which is close to 2.0 and within the recommended guideline (Hair *et al.*, 1998). Fit measures that reported inadequate fit include Goodness of Fit Index (GFI) and Normed Fit Index (NFI), with values being close to .7, and Comparative Fit Index (CFI) at around .8. Root Mean Square Error of Approximation (RMSEA), another index that has received wide acceptance as an absolute fit measure, shows a value of

near .06, an indication of good fit (Hu & Bentler, 1999). It should also be noted that the poor fit shown for some of the indices reflects the possible redundancy of some items within the factors, a likely occurrence in a study that attempts to create new scale measures, where a range of items are being explored for the very first time to capture the dimensions that make up a previously unexplored concept. These results led us to attempt further refinement of the model.

To refine the model and to improve the model fit, the AMOS model fit summary was thoroughly inspected. Rather than changing paths to match the modification indices, which tend to affect the theoretical underpinnings of the model, problematic items with low standardised regression weight and high cross-loadings were deleted. This procedure is considered a more justifiable solution in situations of measurement development and validation (Anderson & Gerbing, 1988). A new factor analysis was run on SPSS without the deleted items and a total of 8 factors were extracted. This new set of factors explains 71.638% of the total variance and retains 24 of the original items. The model was tested again using AMOS and this time, fit indices were within the recommended threshold. The Normed Chi-Square is 1.830, CFI is .9, NFI is .908, CFI is .956, RMR is .048 and RMSEA is .054. Table 2 shows the finalised 8-factor model and the retained items. The 8 factors are defined below. Among these factors, all are drivers of export readiness except for ‘satisfaction, complacency and aversion to changes’ and ‘limited knowledge and experience’, which are inhibitors.

1. Market similarities and advantages (alpha = .852): Perception by the decision-maker that a potential export market shares similarities with the domestic market in terms of culture and language, and has a stable currency exchange rate.
2. Growth and profits potential (alpha = .875): Perception by the decision-maker that there are additional profits and growth prospects for the firm through engaging in export operations.

3. Limited growth and profits ($\alpha = .883$): Perception by the decision-maker that the firm's domestic market has limited scope for expansion and that profits derived through local sales could be declining.
4. Market evaluation and assessment ($\alpha = .851$): Decision-maker's response to export stimuli through an internal (firm) and external (target market) assessment for export feasibility.
5. Satisfaction, complacency and aversion to changes ($\alpha = .886$): Decision-maker's unwillingness to response to export stimuli due to satisfaction with the firm's current state of operations.
6. Limited knowledge and experience ($\alpha = .927$): Decision maker's unwillingness to response to export stimuli due to lack of knowledge and experience in export operations and requirements.
7. Managerial competence ($\alpha = .793$): Decision-maker's perception that the firm has resource strength in the form of competent managers who are driven by the benefits of exporting.
8. Network membership and ties ($\alpha = .868$): Decision-maker's perception that the firm has resource strength in the form of network membership and business ties with other firms.

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This new 8-factor model was then tested for discriminant validity to assess whether there was a definitional overlap. A test using Pearson correlation showed absence of high correlation between the factors, with the average level of correlation ranging between .20 to .40, which is well below the general guideline of .85 (Hair *et al.*, 1998). Additionally, the factor analysis conducted did not highlight any noticeable cross-loading among the items that made up the 8 factors. This is a validation that the 8 factors measure dissimilar concepts, are individually unique and do not converge. The extracted factors, their relevant items and factor loadings were used as scales for the observed indicators in the ERI. Through SPSS computation, a conventional reliability analysis was performed on the extracted factors. Under

statistical guidelines, a Cronbach's alpha (α) value of .70 and above shows internal consistency and reliability for a measurement scale (Peter, 1979; Robinson, Shaver & Wrightsman, 1991). In this case, the extracted factors satisfy the criterion of reliability as measurement scales. All factors have an alpha value above .70, with the majority of the factors having an alpha value above .80.

Evaluating the Export Readiness Index (ERI) As with any scale development procedure, a key issue of concern in the development of the ERI is construct and content validity. It is essential in this case to ensure that the ERI actually measures what it is supposed to measure, and that there is a degree of correspondence between the retained factors and items in relation to the conceptual definition of export readiness as earlier defined (Hair *et al.* 1998). As discussed in Parasuraman (2000), assessing content validity in index construction requires thoroughness in establishing a construct's domain as well as the need to have adequate scale items that represent all facets of the domain. In this case, the ERI is developed through an intensive literature review to define the concept and its domain followed by a multiphase study incorporating both qualitative and quantitative research studies.

To further evaluate the ERI's construct validity, logistic regression is run on SPSS to test whether the ERI discriminates well between exporters and non-exporters. If the ERI is a robust measure, it should accurately predict exporters in the sample. According to the test result, the ERI has an overall accuracy of 72.8% in discriminating between exporters and non-exporters (Table 3). The classification table from SPSS also shows that it is 90.5% accurate in predicting exporters from the sample but is less accurate in predicting non-exporters (39.6%).

PLACE TABLE 3 HERE

The above prediction statistics represent positive outcomes for the study. The ERI is developed with an aim at assessing a firm's preparedness and propensity to commence export operations. As such, a high level of prediction accuracy in exporters enhances its validity as a tool for analysing export readiness. Although the ERI seems less reliable as a predictor of non-exporters in the sample, this could be viewed as a favourable rather than negative outcome. The low prediction accuracy is likely attributed to the fact that a number of non-exporters in the sample are export-ready but are not exporting. This highlights an important issue among non-exporting firms in that it appears many may have missed out on potential opportunities since they are ready to commence exporting but have yet to do so.

Besides testing the ERI's accuracy in predicting exporters from the sample, the logistic regression analysis provides further insights into understanding export readiness as conceptualised in this study. The analysis can be used to identify the factors that are the most significant predictors of a firm's preparedness and propensity to export. Looking at the SPSS output (Table 4), two factors are identified as significant ("growth and profits potential" and "limited knowledge and experience") while one has marginal significance ("market evaluation and assessment"). The beta coefficient shows that "growth and profits potential" (which retains items that are categorised as 'internal and external stimuli') is positively correlated to export readiness. On the other hand, "limited knowledge and experience" (which retains items categorised as 'lateral rigidity') and "market evaluation and assessment" (which retains items categorised as 'attitudinal/psychological commitment') are negatively correlated to export readiness.

The odds ratio, shown under the Exp(B) column in Table 4, implies that firms exposed to stimuli in the form of future growth and profits potential are 2.747 times more likely to export. Firms that faced lateral rigidity in the form of limited knowledge and experience are 1.559 times less likely to export, while firms that commit through market evaluation and assessment are .708 times less likely to export.

PLACE TABLE 4 HERE

The ERI: Application and Implications

The increasing scholarly and practitioner interest in foreign market opportunities and business activities across borders in recent decades highlights the importance of the ERI as a practical tool for both exporting as well as non-exporting SMEs. For a non-exporter, the ERI presents an opportunity for the firm to better understand the requirements for export preparedness, while for exporting firms, the ERI allows an exporter to be more conscious of its strengths and weaknesses. In addition, the ERI has major public policy implications for governments. In Australia for example, exporting has been recognised for its economic benefits not only to the country but also to regional states and firms (DFAT, 2009), and the ERI could provide local export promotion agencies with a better understanding of the required guidelines in evaluating the export readiness of local firms before committing program assistance to them.

Several managerial and research implications can be drawn from this study. First of all, despite it being a well-established argument that many firms export in order to gain more profits from external markets and as a part of their growth strategy (Cavusgil & Nevin, 1981; Aaby & Slater, 1989; Knight & Cavusgil, 1996), an additional point to consider is that such stimuli (as noted in Leonidou, 1998) are internal to a firm and therefore require a more proactive approach in order that they be perceived and acted upon. This raises the need for a firm to be proactive as part of its strategy to become export-ready.

Next, the significance of limited knowledge and experience in reducing export readiness highlights the moderating influence of lateral rigidity in the internationalisation process. This is consistent with the proposals put forward by Luostarinen (1979). The results indicated in this study imply that government export promotion agencies would have a vital role to play in assisting inexperienced firms with an interest in exporting. It should also be noted that, to date, lateral rigidity remains a concept that has received scant

attention in firm internationalisation literature. Its significance as observed in this study calls for a more detailed exploration of the topic in future research.

And finally, it is interesting to note from the results that market evaluations and assessments to obtain more information could actually have a negative rather than positive impact on export readiness. The problems associated with information search have already received attention in the research fields of management and organisational behaviour, highlighted as the potential problem of ‘information overload’ (Oppenheim, 1997; Edmunds & Morris, 2000). From this perspective, firms should be aware that although information on foreign markets is useful, the search procedure should be one that is cautious and selective to avoid collecting more information that can be properly assimilated or efficiently processed (Butcher, 1995)

Conclusion

This study presents an in-depth breakdown and analysis of the dimensions of a previously unexplored concept (export readiness) and develops an appropriate multiple-item export readiness index. The study contributes to firm internationalisation understanding in two important ways. It improves the theoretical foundations established in traditional stages theories of firm internationalisation by identifying export readiness as the transition point between a firm’s pre-internationalisation learning phase and its first international commitment through an export venture. Secondly, through a nationwide survey performed in Australia, using factor analysis, an export readiness index has been constructed and tested against a sample to establish its explanatory and predictive power. The pre-internationalisation state aspect shown in Figure 2 has been examined and explained. Results suggest that the ERI presents a meaningful interpretation and has potential practical implications as an assessment tool for both firms and governments.

It should be noted that the sample size used in this study, although within the guidelines as established in the literature (Hair *et al.*, 1998) is relatively small. Also, only Australian firms were included in the sample which could raise the issue of generalisability of the ERI to other contexts. Future research should consider a larger sample and perhaps also a cross-national replication of the study. In addition, a longitudinal study which tracks the change of state of firms against the ERI prediction would be informative. Such a study could be conducted on a sample of non-exporting firms to determine their status under the ERI at a point in time and then to retest them some time later to determine whether the ERI has predicted a state change from domestic to export.

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Figure 1: Uppsala Model's Theoretical Framework (Johanson & Vahlne, 1977)

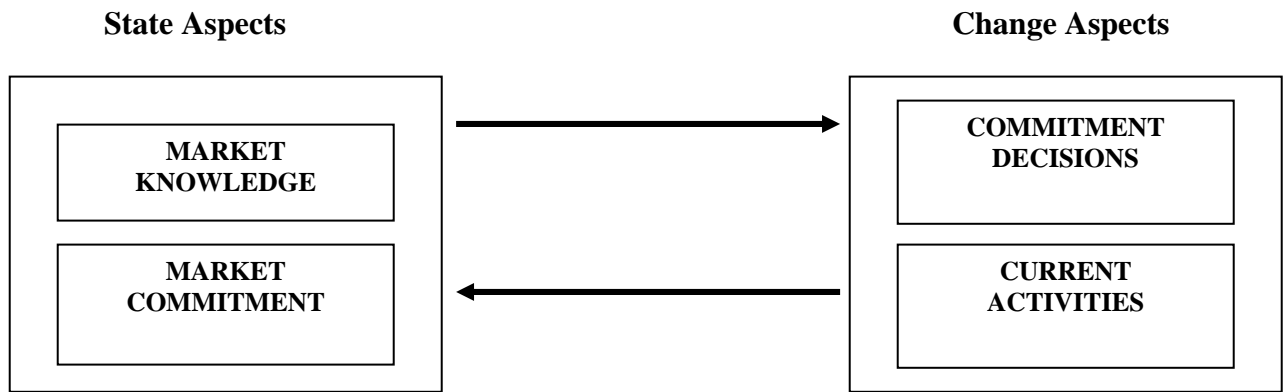


Figure 2: A Reframed Uppsala-Based Pre-Internationalisation Model (Tan *et al.*, 2007)

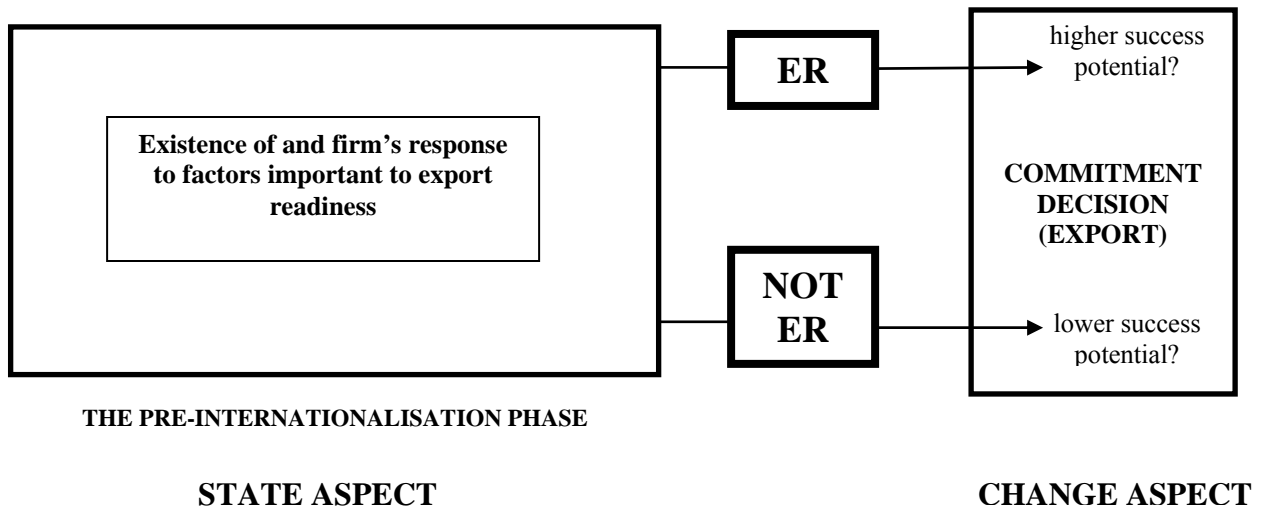


Table 1: Sample characteristics.**RESPONDENT CHARACTERISTICS**

INDUSTRY	NUMBER OF FIRMS	PERCENTAGE OF FIRMS EXPORTING
AGRICULTURE	21	55%
BUILDING & CONSTRUCTION	29	41%
MANUFACTURING	94	79%
MINING	8	92%
RETAIL	21	34%
INNOVATION, SCIENCE & TECH.	39	87%
SERVICE	29	45%
TOURISM	3	80%
TRANSPORT	4	86%
MULTIPLE INDUSTRIES	42	68%
TOTAL	290	65%

FIRM SIZE ACCORDING TO NUMBER OF EMPLOYEES

NUMBER OF EMPLOYEES	FIRMS
0	0%
1 TO 10	22.7%
11 TO 50	52.5%
51 TO 100	16.4%
101 TO 200	5.6%
201 TO 500	1.1%
501 AND ABOVE	1.7%
TOTAL	100%

**RESPONDENTS ACCORDING TO THEIR
NUMBER OF YEARS IN BUSINESS/EXPORT**

NUMBER OF YEARS	FIRMS IN BUSINESS	FIRMS IN EXPORT
5 AND LESS	28	51
6 TO 10	39	63
11 TO 20	98	45
MORE THAN 20	124	19
UNCERTAIN	1	11
TOTAL	290	189

NON-EXPORTERS THAT HAVE PREVIOUSLY EXPORTED

PREVIOUS EXPORTER?	NUMBER	PERCENTAGE
YES	15	5.2%
NO	86	29.7%
NUMBER OF NON-EXPORTERS	101	34.8%
TOTAL NUMBER OF EXPORTERS	189	65.2%
NUMBER OF RESPONDENTS	290	100%

**EXPORTERS: NUMBER OF EXPORT YEARS &
PERCENTAGE OF REVENUE EARNED THROUGH EXPORTING**

		PERCENTAGE OF REVENUE EARNED THROUGH EXPORTING						Total
		5% & LESS	6% TO 10%	11% TO 20%	21%TO 30%	31% TO 50%	MORE THAN 50% UNCERTAIN	
EXPORT YEARS	5 & LESS	16	8	2	0	3	6	51
	6 TO 10	10	11	11	5	4	5	63
	11 TO 20	9	5	7	4	4	10	45
	MORE THAN 20	3	4	5	1	0	2	19
	UNCERTAIN	2	3	1	0	0	0	11
Total		40	31	26	10	11	23	189

Table 2: Export Readiness Index (ERI) – Refined 8 Factors Model with Factor Loadings

		ERI Concepts							
		Exposure to Internal & External Stimuli			Attitudinal Commitment	Lateral Rigidity		Firm Resources	
ERI Dimensions	Items	Market Similarities & Advantages	Growth & Profits Potential	Limited Growth & Profits	Market Evaluation & Assessment	Satisfaction, Complacency & Aversion to Changes	Limited Knowledge & Experience	Managerial Competence	Network Membership & Ties
	Q208	-	.721	-	-	-	-	-	-
	Q209	-	.853	-	-	-	-	-	-
	Q210	-	.786	-	-	-	-	-	-
	Q214	-	-	.879	-	-	-	-	-
	Q215	-	-	.927	-	-	-	-	-
	Q216	-	-	.717	-	-	-	-	-
	Q230	.820	-	-	-	-	-	-	-
	Q231	.905	-	-	-	-	-	-	-
	Q232	.663	-	-	-	-	-	-	-
	Q314	-	-	-	.794	-	-	-	-
	Q315	-	-	-	.883	-	-	-	-
	Q316	-	-	-	.693	-	-	-	-
	Q419	-	-	-	-	.723	-	-	-
	Q420	-	-	-	-	.924	-	-	-
	Q421	-	-	-	-	.838	-	-	-
	Q430	-	-	-	-	-	.915	-	-
	Q431	-	-	-	-	-	.924	-	-
	Q432	-	-	-	-	-	.780	-	-
	Q512	-	-	-	-	-	-	.634	-
	Q514	-	-	-	-	-	-	.893	-
	Q515	-	-	-	-	-	-	.683	-
	Q541	-	-	-	-	-	-	-	.826
	Q542	-	-	-	-	-	-	-	.951
	Q543	-	-	-	-	-	-	-	.702
	Cronbach's Alpha	.852	.875	.883	.851	.886	.927	.793	.868

Table 3: Logistic Regression – Classification Table (SPSS Output)

Observed			Predicted		
			EXPORT		Percentage Correct
			Yes	No	
Step 1	EXPORT	Yes	171	40	90.5
		No	61	18	39.6
Overall Percentage					72.8

a. The cut value is .500

Table 4: Logistic Regression – Variables in the Equation (SPSS Output)

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a Growth & Profits Potential	1.010	.214	22.355	1	.000	2.747	1.807	4.176
Limited Growth & Profits	.145	.134	1.164	1	.281	1.156	.888	1.505
Market Similarities & Advantages	-.165	.170	.942	1	.332	.848	.608	1.183
Market Evaluation & Assessment	-.345	.220	2.465	1	.116	.708	.461	1.089
Satisfaction, Complacency & Aversion to Changes	-.096	.145	.438	1	.508	.908	.683	1.208
Limited Knowledge & Experience	-.444	.130	11.680	1	.001	1.559	1.209	2.012
Managerial & Employee Competence	.064	.242	.070	1	.792	1.066	.663	1.713
Network Membership & Ties	-.022	.148	.022	1	.882	.978	.732	1.307
Constant	-3.203	1.364	5.514	1	.019	.041		