The NEP Scale: A measure of network export performance

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ABSTRACT

The interdependence between varying participants in exporting networks that has resulted from processes of globalization magnifies the inadequacies of using single-item measures and internally oriented perspectives to assess export performance. In order to overcome these concerns, we developed a network export performance (NEP) scale using as a basis network theory, a diversity of network-oriented indicators and different types of respondents. The final multi-dimensional NEP Scale includes 25 items grouped into five dimensions: (a) overall export venture performance, (b) relationship performance with the importer versus competitors, (c) relationship performance with the supplier, (d) product quality performance of the supplier, and (e) importer's satisfaction with the quality of the supplied product. Findings reveal that the flow of communication and interaction within exporting networks is positively and significantly associated with all of the five dimensions of the NEP Scale. Discussion centers on implications of this scale to network theory, international business, and to the managerial development of exporting strategies. The article closes with directions for future research.

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1. Introduction

With the rise of global trade, managers and public policy makers look at export operations as a way of improving economic performance and diminishing dependence on domestic markets for growth. The steadily increasing importance of export activity leads to the development of export performance metrics and thus becomes a critical concern for academia, organizations and governments alike. Organizations are seeking researchers’ help in developing meaningful performance measures to assist organizations to create and deliver long-term value for all domestic and international stakeholders, thereby enhancing sustainable financial performance (O’Sullivan & Abela, 2007).

When examining the field of international marketing in recent years, export performance surfaces as a clear area of controversy and concern for both practitioners and academics (Lages, Jap, & Griffith, 2008c; Morgan, Kaleka, & Katsikeas, 2004). During the last decade in particular, debates regarding metrics and mechanisms for measuring firm performance (e.g., Bolton, 2004; O’Sullivan & Abela, 2007), and export performance (see 1998 Journal of International Marketing Special Issue; Lages et al., 2008c) have received a great deal of attention. While researchers are making some progress in the exporting field, serious theoretical and methodological inconsistencies hamper progress (Diamantopoulos & Kakkos, 2007; Katsikeas, Leonidou, & Morgan, 2000; Sousa, 2004). The development of relevant and accurate measures of export performance is a
highly pressing issue for academics, public policy and management decision makers alike. In order to address this issue, we develop a comprehensive measure of export performance. The measurement properties of the new export performance scale were assessed using a confirmatory factor analysis approach and a multi-industry sample of manufacturing exporters from a European Union country (Portugal). Our purpose is to contribute to the export performance literature at two different levels.

The first contribution is the development of a new measure combining different managerial perspectives on different facets of the export performance phenomenon. A key limitation of the export performance literature is to assume that a single respondent has the knowledge to assess the overall export performance phenomenon (Leonidou & Katsikeas, 1996). In this paper, we use data collected from two different respondents (responsible for export operations and quality manager) within the same manufacturing exporter. The responsible for export operations assesses overall export performance and relationship performance with the importer. The job titles of the person responsible for export management included president, exporting director, managing director, marketing director, supply-chain director and operations management director. The quality manager assesses relationship performance with the supplier, product quality performance of the supplier, and importer’s satisfaction with the quality of the supplied product. Job titles of the person responsible for quality management operations included quality director, quality manager, industrial director, production director, services director, and coordinator of quality and environment.

The second contribution is by addressing a gap in the literature: the inexistence of export performance scales that consider the importance of networks. This paper will address this limitation in the literature by building a new scale drawing from network theory. To do so, we build on past research to propose a broader conceptualization and operationalization of export performance that recognizes the contribution of key network external partners to the firm. A tendency exists among earlier export performance studies to focus on internal stakeholders oriented perspectives. A review of over 100 export performance articles published in the 1990s (Katsikeas et al., 2000) reveals that all these studies follow an internally oriented focus, with only a small number considering a combination of both perspectives, and none focused on the customer. Recent practice and research argues that organizations cannot afford to be so exclusively internally centered (Donaldson & Preston, 1995). Hence, we propose a measure of network export performance that employs internally oriented indicators as well as a set of performance indicators related with the firm’s distinct and co-dependent network of suppliers and importers (cf. Katsikeas et al., 2000). Hence, export performance is defined as the extent that a firm achieves export performance in a network context, by attaining its internal export venture goals, establishing sustainable relationships with the importers and suppliers, and by buying and supplying quality products. This definition of export performance is innovative in the sense that considers that suppliers and foreign customers are a vital source of value creation, and also therefore, competitive advantage in export markets. It is also presented as a starting point for future holistic studies that aim to include many different domestic and international network partners (e.g. national governments, regulatory agencies, NGOs, trade unions, employees and shareholders).

The paper follows this outline: first, an overview of the current export performance literature; second, an explanation of the network approach to export performance measurement, along with the five proposed dimensions of the NEP Scale; third, a test of the scale via a survey of two key respondents (export managers and quality managers) from manufacturing firms involved in exporting; finally, implications for theory and managerial practice, research limitations, and future directions for investigation.

2. The importance of exporting activity and export performance metrics

Despite more than four decades of constant scrutiny (see: Tookey, 1964), export marketing research continues to appear at the fore of international marketing study and practice today. Of particular interest is the development of export performance metrics, attempting to resolve the many difficulties inherent to the process of quantifying contributions of marketing to the firm (Seggie, Styles, & Cavusgil, 2006). The 1998 Journal of International Marketing Special Issue on export performance metrics (see: Diamantopoulos, 1998) was a great step forward in this regard, as were many studies that have focused on identifying the drivers of export performance (e.g., Cavusgil & Zou, 1994; Diamantopoulos & Winklhofer, 2001; Katsikeas et al., 2000; Lages et al., 2008c; Morgan et al., 2004).

The impetus behind this growing attention resides in the numerous benefits of exporting activity at both firm and public policy levels. At the level of the firm, companies may use export activity to improve management processes at the domestic level, increase overall performance, benefit from economies of scale and become more competitive in all areas of business by developing international skills. As such, firms seek opportunities in international markets to achieve their objectives and to safeguard their market position in response to the intensification of competition on a global scale (Leonidou, Katsikeas, & Samiee, 2002). However, succeeding in export markets is not an easy task, due to the largely diverse and idiosyncratic nature of foreign environments (Czinkota & Ronkainen, 1998; Samiee & Walters, 1990). The export activity also presents some risks to firms, including longer time scales of payment, problems associated with exchange rates, economic/political instability, and difficulties associated with lack of market knowledge (Branch, 2000).

At the public policy level, exporting activity is crucial because exporting facilitates an increase of foreign exchange reserves, helps industries to survive and develop, and allows the enhancement of societal prosperity by improving national productivity and creating jobs (Czinkota, 1994). Exporting activities also encourage public policy makers to implement programs aimed at helping firms improve their export performance. Hence, by better measuring export performance, both
managers and public policy makers might monitor export activity benefits and avoid the risk of being caught in cycles of successive unsatisfactory allocations of their limited resources to the export activity.

In spite of these clear advantages in developing sound export marketing metrics, theorists have made little progress in recent years. Substantial advances have occurred in other areas of marketing metrics, including the measurement of returns with relation to brand equity, relational equity, customer lifetime value, and customer equity (Seggie et al., 2006). However, these advancements have had limited applicability to the reality of export marketing. In addition, a general disregard for the interrelationships between different actors involved in international, domestic and cross-country levels of export activity has severely curbed potential for operationalization. For example, Katsikeas et al. (2000) describe the bulk of current research as largely a process of measuring a single dimension of performance, with regard to a single frame of reference, using a single respondent at one particular time horizon. Two of perhaps the most prevalent export measurement tools of the past 20 years, the EXPERF (Zou, Taylor, & Osland, 1998) and CZ (Cavusgil & Zou, 1994) scales deserve such criticism, due to methodological restrictions (see Table 1). Even the few export performance measures taking such criticism into consideration limit their own potential value by failing to match methodological rigor with theoretical grounding (see Sousa, 2004).

3. A network approach to export performance measurement

Incorporating the social exchange perspective (see Cook & Emerson, 1978) of social networks into business practice and research, business network theory first gained traction in the late 1980s and early 1990s (e.g., Ford, 1990; Gadde & Mattson, 1987; Hakansson & Johanson, 1993). The basic premise of this approach is that a business network is a set of two or more connecting business relationships in which each exchange relation is between business firms that are conceptualized as collective actors (Emerson, 1981).

Network theory is gaining significant attention in the field of marketing as a result of the recent restructuring of global markets (see Rowley, 1997; Thorelli, 1986). Widespread international expansion and desegregation of organizational hierarchies have produced a global economy characterized by interconnected networks of inter-dependent economic actors. As a consequence, the concept of networks as a strategic resource has also gained favor among academics and practitioners (see: Black & Boal, 1994; Srivastava, Fahey, & Christensen, 2001)—many of whom have utilized the resource-based view of the firm to acknowledge networks as a significant source of competitive advantage. Despite some recent attempts to include networks and reciprocity in exporting research (e.g. Lages, Lages, & Lages, 2005b), the literature on export performance (see Table 1) tends to be anchored in a one sided transaction-based paradigm. We argue that future export performance measures also need to reflect the importance of networks. In the network paradigm, it is the network that is the key unit of analysis and the source of competitive advantage (versus just a focal firm). Hence, export performance measures are expected to match this unit of analysis and cover the interdependence of ties among multiple actors.

Seggie et al. (2006) introduce the concept of Global Network Equity (GNE) in an exporting context to further highlight this notion. GNE utilizes an analysis of export actors and their interrelationships across the domestic, international, and cross-country contexts to formulate an equation for measuring the sum of these value-laden global network relationships. Through this equation, GNE addresses the predominantly dyadic orientation of the literature and demonstrates the potential utility of network theory for export performance measurement. Network theory is the holistic measure of export performance that underpins the NEP Scale. Overall, in the context of exporting, interdependence along the value chain becomes magnified as networks grow more complex and operate simultaneously at firm, domestic, and cross-national levels.

4. Developing the NEP Scale

Following Churchill’s (1979) procedure, the study builds upon scales in the fields of export performance, marketing, and total quality management, beginning with the APEV scale (Lages, Lages, & Lages, 2005a). Covering five different export performance dimensions (i.e., financial, strategic, satisfaction, achievement, and intensity), APEV would appear to be highly advantageous in its breadth of scale. However, the distinct internal orientation stems from the work of Morgan et al. (2004) and their scale of export performance. Employing internally- and customer-oriented indicators of export performance, as well as using primary competitors as a reference for scale item, Morgan et al.’s scale was of great methodological value (cf. Clark & Montgomery, 1999; Katsikeas et al., 2000).

In addition to these “traditional” export performance measures, the NEP Scale draws upon earlier network performance literature. In the current era, companies wishing to survive in the international arena cannot afford to isolate themselves from other actors in the global exporting network. A vast array of cross-national findings demonstrating the value of the social, professional, and exchange relationships in which all companies find themselves embedded confirms this (Achrol & Kotler, 1999; Gulati, Nohria, & Zaheer, 2001; Nohria, 1992; Rowley, 1997). During the last decade, interactions between global economic actors have escalated in importance. As a consequence of loosened government intervention and heightened global capital and information flows, differing actors along the exporting chain, such as suppliers, and customers, invariably rely upon each other for competitive advantage. Having higher levels of product and service quality increases the probability for the exporter–importer dyad to attain competitive advantage (Chryssochoidis & Theoharakis, 2004). Hence,
<table>
<thead>
<tr>
<th>Source</th>
<th>Assesses</th>
<th>Dimensions/indicators</th>
<th>CZ Scale</th>
<th>EXPERF Scale</th>
<th>STEP Scale</th>
<th>MKK Scale</th>
<th>APEV Scale and PERFEX Scorecard</th>
<th>AEP Index</th>
<th>Past Export Performance Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lages et al. (2005a)</td>
<td>Annual performance of an export venture</td>
<td>Distributor relationship performance</td>
<td>Annual export venture strategic performance</td>
<td>Frames of reference</td>
<td>Time horizons</td>
<td></td>
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<tr>
<td>Lages et al. (2008c)</td>
<td>Preceding year’s export performance</td>
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Table 1
Export performance measures.
the quality of the relationships between each of these actors, as well as the individual inputs of each actor, is an essential component of export performance.

Presently, in order to ensure that the final goods meet customer's needs, managers commonly assess and integrate quality performance consideration into all levels of the international channel. The quality input into the production process is critical to all other stages of the business process. Thus, the NEP Scale builds on previous total quality management and network research to bring two major constructs into the international marketing literature: product quality and supplier performance.

Companies that often struggle to provide market offerings abroad could successfully address many of these obstacles by giving increased attention to product quality (Calantone & Knight, 2000). Quality is critical for delivering superior customer value and for turning this value into competitive advantage (Day & Wesley, 1988). Surprisingly, the role of quality in foreign markets receives scant research attention (Calantone & Knight, 2000). Achrol and Kotler's (1999) work on networks and exporting provides a solid basis for bringing together multiple perspectives of the exporting process, while Ahire, Golhar, and Waller (1996) total quality management perspective facilitates measurement of the alignment between importer's specifications and supplier's inputs.

5. Method

5.1. Survey instrument development

Before conducting the main study, exploratory research refined all the items. First, several expert judges assessed face validity. A panel of academic experts with knowledge in international marketing, exporting, operations management, and/or quality management discussed all the measures in depth. This stage was critical in evaluating the pertinence of the measures and identifying problematic issues within the research context. Following the initial purification process, a revised version of the questionnaire emerged from a series of structured face-to-face interviews. These interviews involved three export managers, three quality managers, and two managing directors of manufacturing firms operating in different industry sectors. This stage helped to evaluate further individual item content, clarify the instructions, and design the type of response format. More specifically, although the literature might suggest to obtain data on all dimensions of export performance from two (or more) informants and then consider inter rater reliability, our preliminary interviews revealed that the respondents would not be knowledgeable to answer all the questions, and as a consequence would prefer different questionnaires to be developed for the responsible for export operations and responsible for quality management. This approach allowed us to reduce response bias. Each product is composed by several components provided by one or more suppliers. The literature on quality management (e.g. Ahire et al., 1996) proposes to focus only on the critical component provided by a supplier. After the preliminary interviews, managers proposed to focus on the supplier providing the critical component which has a stronger effect on the functional performance of the product.

This study uses a single export venture as the unit of analysis, i.e., a single product or product line (or group of products) exported to an importer in a foreign market. In most recent export performance research the export venture is the primary unit of analysis (e.g. Morgan et al., 2004; Lages et al., 2008c). We ensured variation in export venture performance. While half of the sample (53.6%) responded regarding the most successful export venture, the rest of the sample answered regarding export ventures not performing so well (cf. Morgan et al., 2004; Weiss, Anderson, & MacInnis, 1999). The final set of 25 items of the NEP measure and the scale reliabilities are in Table 2. The average internal reliability (Cronbach α) for the five dimensions is 0.9. Table 2 also indicates the type of respondents and the group items associated with each of the five dimensions of the NEP Scale.

5.2. Data collection procedure

The final data are from Portuguese exporting firms. The Portuguese external commerce has contributed significantly to the economic development of this country, representing 55–70% of the total GDP during the last decade. Also within the context of small European countries, the Portuguese case is particularly interesting. The extensive saturation of the smaller European markets, such as Portugal, has placed additional pressure on firms of those countries to start selling their products abroad and develop several interconnected potential exporting industries (Porter, 2003). The study of Portuguese companies might be particularly interesting for companies of other small countries, in which the exporting activity is a vital ingredient in the country's growth and the export activity plays an important role in increasing the national GDP.

The focus is on a multi-industry sample, in order to increase observed variance and strengthen the generalizability of our findings (cf. Bello & Gilliland, 1997; Morgan et al., 2004; Samiee & Anckar, 1998). In line with recent literature in export marketing, this study focuses on manufacturing firms exclusively (cf. Morgan et al., 2004), excluding service firms and those engaged in primary industries, because of their idiosyncratic international expansion patterns, regulatory requirements and performance characteristics (cf. Zou & Cavusgil, 2002). The data for the main study are from a random sample of 1332 exporting manufacturing firms listed in a Portuguese governmental agency database (ICEP, 2004). This database contains the firm's name, address, telephone number, e-mail, and key contact persons in all Portuguese exporting firms. Data collection occurred in 2006. In line with recommendations received during the preliminary interviews, we sent the two questionnaires, a postage-paid return envelope, and a cover letter to the Managing Director of each of the 1332 Portuguese firms. A reminder
Table 2
CFA results.

In order to define the Exporting Venture which will be the focus of this questionnaire, please select:

| (a) an exported product or group of exported products ________________________________ |
| (b) an importer in a foreign market for the export mentioned above (e.g. Firm/Country) __________________ |

Identify the most critical component for the functional performance of the product of the selected export venture:

| (please indicate just one critical component, i.e. the component that most influences product's functional performance) |

When considering the selected Exporting Venture in “Year Y”, what is your opinion concerning the following:

Dimensions and Items of the NEP Scale:

<table>
<thead>
<tr>
<th></th>
<th>α</th>
<th>ρ</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall export venture performance (adapted from Lages et al., 2005a)</td>
<td>.96/.68/.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. This export venture has been very profitable.</td>
<td>0.66</td>
<td>7.78</td>
<td></td>
</tr>
<tr>
<td>2. This export venture has improved our global competitiveness</td>
<td>0.72</td>
<td>8.73</td>
<td></td>
</tr>
<tr>
<td>3. This export venture has achieved rapid growth</td>
<td>0.80</td>
<td>10.10</td>
<td></td>
</tr>
<tr>
<td>4. The performance of this export venture has been very satisfactory</td>
<td>0.89</td>
<td>11.99</td>
<td></td>
</tr>
<tr>
<td>5. This export venture has strengthened our strategic position</td>
<td>0.87</td>
<td>11.49</td>
<td></td>
</tr>
<tr>
<td>6. This export venture has significantly increased our global market share</td>
<td>0.83</td>
<td>10.63</td>
<td></td>
</tr>
<tr>
<td>7. This export venture has generated a high volume of sales</td>
<td>0.83</td>
<td>10.66</td>
<td></td>
</tr>
<tr>
<td>8. This export venture has been very successful</td>
<td>0.91</td>
<td>12.41</td>
<td></td>
</tr>
<tr>
<td>9. This export venture has fully met our expectations</td>
<td>0.91</td>
<td>12.33</td>
<td></td>
</tr>
<tr>
<td>10. Satisfaction with market share in the selected importing market of the export venture</td>
<td>0.81</td>
<td>10.23</td>
<td></td>
</tr>
<tr>
<td>11. Satisfaction with overall export performance</td>
<td>0.81</td>
<td>10.26</td>
<td></td>
</tr>
<tr>
<td>Relationship performance with the importer versus competitors (adapted from Morgan et al., 2004)</td>
<td>.94/.77/.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Quality of your company’s relationship with the importer</td>
<td>0.85</td>
<td>11.16</td>
<td></td>
</tr>
<tr>
<td>13. Reputation of your company for the importer</td>
<td>0.78</td>
<td>9.67</td>
<td></td>
</tr>
<tr>
<td>14. Importer loyalty to your firm</td>
<td>0.83</td>
<td>10.78</td>
<td></td>
</tr>
<tr>
<td>15. Importer overall satisfaction with your total service offering</td>
<td>0.96</td>
<td>13.62</td>
<td></td>
</tr>
<tr>
<td>16. Importer overall satisfaction with your total product offering</td>
<td>0.96</td>
<td>13.69</td>
<td></td>
</tr>
<tr>
<td>Relationship performance with the supplier (adapted from Ahire et al., 1996)</td>
<td>.86/.80/.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Most quality problems in the past have easily been resolved with our suppliers</td>
<td>0.87</td>
<td>11.05</td>
<td></td>
</tr>
<tr>
<td>18. Suppliers send us shipments of the critical component that conform to our specifications</td>
<td>0.90</td>
<td>11.53</td>
<td></td>
</tr>
<tr>
<td>19. Our suppliers are always eager to resolve quality problems</td>
<td>0.71</td>
<td>8.28</td>
<td></td>
</tr>
<tr>
<td>Product quality performance of the supplier (adapted from Ahire et al., 1996)</td>
<td>.80/.72/.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. The durability of the critical component is excellent</td>
<td>0.70</td>
<td>7.87</td>
<td></td>
</tr>
<tr>
<td>21. The critical component’s performance is excellent</td>
<td>0.90</td>
<td>10.82</td>
<td></td>
</tr>
<tr>
<td>22. The critical component is reliable</td>
<td>0.71</td>
<td>7.99</td>
<td></td>
</tr>
<tr>
<td>Importer’s satisfaction with the quality of the supplied product (adapted from Menon et al., 1997; Sarin &amp; Mahajan, 2001)</td>
<td>.79/.60/.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. The product meets the importer’s needs</td>
<td>0.74</td>
<td>8.36</td>
<td></td>
</tr>
<tr>
<td>24. Our importer often praises our product quality</td>
<td>0.69</td>
<td>7.74</td>
<td></td>
</tr>
<tr>
<td>25. Our importer is firmly convinced that we offer very good quality products</td>
<td>0.88</td>
<td>10.49</td>
<td></td>
</tr>
</tbody>
</table>

Notes: α = internal reliability (Cronbach, 1951); ρ = composite reliability (Fornell & Larcker, 1981); ρ = variance extracted (Fornell & Larcker, 1981); α = composite reliability (Bagozzi, 1980); Year Y = 2005. Unless otherwise specified, all items were measured on a seven-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). Constructs developed with data collected from the person responsible for Export Operations: overall export venture performance (11 items), and relationship performance with the importer versus competitors (5 items); Constructs developed with data collected from the person responsible for Quality Management: relationship performance with the supplier (3 items), product quality performance of the supplier (3 items), and importer’s satisfaction with the quality of the supplied product (3 items).

* These items are anchored by 1 = not satisfied at all; 7 = very satisfied.

* These items are anchored by 1 = much worse; 7 = much better.

was sent 3 weeks later to the non-respondents, followed by another reminder 8 weeks after that. In the initial cover letter we assured confidentiality, promised to provide the findings in return for a completed questionnaire and asked the Managing Director to write the selected export venture in the two questionnaires. In order to ensure that the informants were competent to provide the required information accurately, he/she should then pass the surveys to the person in charge of export operations and to the person responsible for quality management.

5.3. Research setting and assessment of non-response bias

Out of the 1332 initial mailings the postal service returned 53 questionnaires from firms that had either closed or moved without leaving a forwarding address. This reduced the sample size to 1279 companies. Of these, a total of 112 companies returned both questionnaires (i.e. one answered by the export manager and another by the quality manager), resulting in a raw response rate of 8.8% (112/1279). Although low, the sample size remains above some recent international business...
studies conducted with British (Lages et al., 2005a, 2005b), Israeli (Shoham, 1998) and Portuguese (Lages, Abrantes, & Lages 2008) exporters which have used a single respondent.

Following previous research (e.g. Menon, Bharadwaj, Adidam, & Edison, 1999; Lages et al., 2005a, 2005b), in order to find out the effective response rate, we employed a systematic selection procedure and selected 177 companies (14% of the targeted firms) for follow-up contacts via telephone. We started by conducting a first follow-up contact with 77 firms to determine undeliverable rates. This revealed that 32% of the envelopes did not reach the managing director to whom they were addressed and 27% reported a corporate policy of managers not responding to academic surveys. Hence, after considering the undeliverable rates, our initial sample size was reduced to 524 companies.

Then, we conducted a second follow-up contact with more 100 firms in order to determine noncompliance rates associated with this innovative approach to data collection (in which each exporting company had to use two different respondents to fill out the two questionnaires). If the initial mailing has arrived to the managing director, in order to be eligible to answer, firms had to have exporting activities during 2004 and 2005 as well as have two different responsibilities for quality and exporting operations. Results indicated that only 80% of the sample frame fills these criteria.

In sum, the two follow-up contacts suggested that as few as 419 of the 1279 firms surveyed should be considered, yielding an approximate effective response rate of 26.7% (112/419).

A comparison of early and late respondents – defining early respondents as the first 75% of the returned questionnaires, and the last 25% as late respondents (Armstrong & Overton, 1977) – reveals non-response bias with respect to all the variables included in the NEP Scale dimensions, the number of years of exporting, number of full-time employees, number of export markets, and age of the export venture. The lack of significant differences between the early and late respondents suggests that response bias was not a significant problem. If common method bias exists, a CFA containing all the items should produce a single method factor (Podsakoff & Organ, 1986). The goodness-of-fit on a single factor model indicates a poor fit (CFI = .80; IFI = .80; TLI = .78), in turn suggesting that bias from common method variance is unlikely.

The Portuguese exporting industry consists primarily of small to mid-sized firms. Exporters from all the Portuguese regions participated in the survey. The average annual export sales of these firms ranged from €1.6M to €11M, with 27% of the firms having export sales below €1.6M, 67% from €1.6M to €46M, and 6% of the companies having annual export sales over €46M. With regard to the number of full-time employees, 9% have between 35 and 49, 36% from 50 to 99, 48% from 100 to 500, and 7% have more than 500 employees.

The vast majority of participating firms have significant experience in international business. The number of years that firms in the sample had engaged in exporting operations averaged 22 years (s.d. = 13.3; range 3–100); 11% having 3–9 years, 25% having 10–15 years, 51% having 16–30 years, and 13% having over 30 years. On average, companies had been working for 11 years with the selected importers. Around 80% of the respondents reported on export ventures with other EU countries, while the remainder occurred with non-EU countries. The leading countries in the sample are Spain (21%), France (19%), UK (13%), Germany (10%), USA (8%), Netherlands (5%) and Brazil (5%). The average sales volume of the selected export venture ranged from €500,000 to €1.6M.

Respondents also indicated the number of years working in the company, and in their specific functions. Those responsible for export operations had on average 13 years experience in the firm and had been in the same business function for 9 years. Respondents responsible for quality management had on average 12 years experience in the company and had been in the same business function for 9 years. Collectively, this indicates that although the title of the respondents’ positions may be wide-ranging, the individuals seem to have significant knowledge and be highly involved in exporting and quality management activities.

6. Data analysis

6.1. Scale refinement

Initially, expert judges critically analyzed and refined all the items included in the final instrument (see the section “Survey Instrument Development”). Confirmatory factor analysis with full-information maximum likelihood (FIML) estimation in LISREL 8.8 (Jöreskog & Sörbom, 1993) tested the final measurement model using the data. Table 2 presents the final version of the NEP Scale. The final scale includes 25 items grouped into five dimensions: (a) overall export venture performance, (b) relationship performance with the importer versus competitors, (c) relationship performance with the supplier, (d) product quality performance of the supplier, and (e) importer’s satisfaction with the quality of the supplied product.

(a) Overall export venture performance

The first test was of a first-order model comprising all the five dimensions of the original APEV scale (Lages et al., 2005a): (1) annual export venture’s financial performance; (2) annual export venture’s strategic performance; (3) annual export venture’s achievement; (4) satisfaction with annual export venture’s overall performance; and (5) contribution of the export venture to annual exporting operations. The initial fit of the measurement model was not acceptable, mostly due to the three items comprising the fifth dimension. This dimension used three items (with intervals: 0–9%; 10–29%; 30–59%; 60–84%; 85–100%) to assess the contribution of the export venture to export sales volume, export sales value, and export profit. The empirical findings here corroborate earlier work of other authors (Katsikeas et al., 2000; Kirpalani & Balcome, 1987), who
argue that despite the fact that export intensity is the most common measure in the export marketing literature, in some situations may not reflect the competitive dimensions of export success because other factors may play a critical role on export performance. After reducing the original APEV scale from five dimensions (14 items) to four (11 items), possible discriminant validity problems across these dimensions arose, revealed in very high correlations between all these dimensions, mainly between annual export venture’s financial performance and annual export venture’s strategic performance (r = 0.95). Recent research in the marketing field (see Deshpande & Farley, 1998; Homburg & Pflesser, 2000), prompted the use of a one-dimensional conceptualization of the 11-item scale as a response to the lack of discriminant validity among the four original dimensions (see Table 2).

(b) Relationship performance with the importer versus competitors

Another recent scale of export performance (Morgan et al., 2004) contributed to the development of the NEP Scale. The initial scale presents three dimensions of export performance: the economic, distributor, and end-user dimensions. The economic dimension of export performance includes four indicators: export sales volume, export market share, profitability, and percentage of sales revenue derived from products introduced in the market during the past 3 years. Both the distributor and end-user dimensions include items to assess service quality, relationship quality, reputation, loyalty, and satisfaction. In the exploratory stage, both academic judges and managers indicated that the dichotomy of distributor and end-user was not viable because of the variety of situations, such as cases in which an end-customer exists without distributors (e.g., electronic and automobile components, chemical products), cases in which companies worked only with the distributors who had no information at all about the end-users (e.g., the case of companies working directly with wholesalers, retailers, and supermarkets), and several cases in which respondents were not able to differentiate between the distributor and the end-user, as they were the same element of the distribution channel (e.g., pharmaceutical sector). As a result, in order to resolve this issue, rather than asking respondents to select a distributor plus an end-user in a foreign market, respondents selected an importer in a foreign market for the selected export venture. Additionally, as a consequence of the exploratory research, one of the Morgan et al. (2004) items – “overall satisfaction with your total product/service offering” – was split into two items. Therefore, after the exploratory stage, the final version of the questionnaire included the four items comprising the original economic dimension and the five items comprising the (adapted) importer dimension. After adding nine new items to the final measurement model, discriminant validity problems arose between the items comprising the economic dimension and the other items previously included in the revised APEV Scale. The measurement model now excluded the four new items comprising Morgan et al.’s (2004) economic dimension and remained with 16 items.

(c) Relationship performance with the supplier and (d) product quality performance of the supplier

Next, inspired by Ahire et al. (1996), six more items were added to the measurement scale: conformance of supplied parts to specifications, cooperation of suppliers to resolve quality problems, supplier’s willingness to improve quality, performance of the supplied parts, reliability of supplied parts, and durability of the supplied parts.

Before introducing the original scale into the measurement model, a factor analysis tested the dimensional structure of the six items.1 The first three items measuring relationship performance with the supplier were grouped, and reflect supplier’s behavior to establish a long-term relationship. These items are crucial, as quality-oriented firms usually identify suppliers who are willing to establish long-term partnership by investing in quality improvement efforts (Lascelles & Dale, 1989). The last three items measure product quality performance of the supplier. For many years researchers and practitioners have been arguing that among the most critical determinants in choosing suppliers is their ability to meet product quality standards (see: Dickson, 1966).

(e) Importer’s satisfaction with the quality of the supplied product

Finally, the model gains the fifth dimension: importer’s satisfaction with the quality of the supplied product. Quality is a multi-dimensional construct that requires evaluating customer satisfaction with the supplied product (Gale, 1994; Stahl, 1995). Ideally, these questions should be answered by the importer’s side. However, due to “the daunting practical problems in yielding this type of data within an international context” (Skarmeas, Katsikeas, & Schlegelmilch, 2002:773), for example due to the fact of being necessary to contact individual customers located in different countries around the world and using different languages, it has been decided to use the exporter’s perception to overcome these problems.

Despite managerial evidence about the need to analyze quality as a multi-dimensional construct, most researchers treat quality as a one-dimensional construct (Stone-Romero, Stone, & Grewal, 1997). For example, in the exporting field several studies use a single item to measure quality (Cavusgil, 1984; Christensen, de Rocha, & Gertner, 1987; Cooper & Kleinschmidt, 1986). The NEP Scale looks at quality from different perspectives and uses several items to assess this dimension. More specifically, measuring importers’ satisfaction with the quality of the supplied product uses three items. The first assesses the extent to which the product meets the importers’ needs (adapted from Menon, Jaworski, & Kohli, 1997). The last two items are extensions of Sarin and Mahajan’s (2001) work, and evaluate the extent to which the importer praises product quality and whether the importer believes that the products offered have good quality.

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1 Two distinct varimax rotated factors were identified from the original six items. These two factors accounted for 76% of the total variance of the original six items. The first three items formed the first factor (accounting for 40% of the variance of the original items) and the remaining items generated the second factor (accounting for 36% of the variance of the original items).
6.2. Convergent and discriminant validity

The final model restricts each item to load on its pre-specified factor, and allows the five factors to correlate freely. Since the chi-square statistic is sensitive to sample size (Bagozzi & Yi, 1988), the analysis includes additional fit indices: the Comparative Fit Index (CFI), the Incremental Fit Index (IFI), the Tucker–Lewis Fit Index (TLI), and Standardized Root Mean Square Residual (SRMR). Although the chi-square statistics of the final measurement model are significant (chi-square = 462.56, df = 265, p < 0.001), the fit indices reveal that the final structural model is fairly good. The CFI, IFI, TLI, and SRMR of this model are .96, .96, .95, and .061, respectively.

As Table 2 reveals, convergent validity is visible in the large and significant standardized loadings of each item on its intended construct (average loading size was .8). Table 2 also shows that all constructs present the desirable levels of composite reliability (Bagozzi, 1980). The Fornell and Larcker (1981) test assesses discriminant validity among the constructs. The index of variance extracted was above the recommended level of .50 for all of the five constructs. Evidence of discriminant validity is also evident in the fact that all of the construct intercorrelations are significantly different from 1, and the shared variance between any two constructs (i.e., the square of their intercorrelation) is less than the average variance explained in the items by the construct (MacKenzie, Podsakoff, & Rich, 2001). Therefore, none of the correlations in the final model are sufficiently high to jeopardize discriminant validity (Anderson & Gerbing, 1988).

6.3. Nomological validity

In order to assess nomological validity, the analysis compares the NEP measures to another to which some researchers postulate a theoretical link (cf. Churchill, 1995). This draws upon the four items of the COMQUAL Scale (as does the work of Lages et al., 2005b): (1) All the parties involved had continuous interaction during implementation of the strategy; (2) All those involved (and interrelated parties) clearly understood the strategy’s objectives and goals; (3) Team members openly communicated while implementing the strategy; (4) Implementation included intensive formal and informal communication. All the items comprising this scale pertained to all the stakeholders involved in the supply chain of the selected export venture, anchored by 1 = strongly disagree and 7 = strongly agree. The COMQUAL Scale (α = .93) became particularly pertinent due to its ability to encompass interactions which run in both directions across all the stakeholders who bring value to the export channel (cf. Donaldson & Preston, 1995). While building on stakeholder theory, communication flow and a close interaction across all the different team members allowed the creation of a sustainable bridge between market needs and the capabilities of the various departments (e.g., engineering, manufacturing, design, and R&D), ultimately contributing to overall network performance (Freeman, Wicks, & Parmar, 2004). As a result, strong theoretical reasons existed to expect a positive relationship between the COMQUAL construct and all five dimensions of the NEP Scale. Indeed, evidence in support of this expectation emerged, including significant positive relationships between the COMQUAL and all of the five dimensions: (a) overall export venture performance (r = 0.29; t = 3.20), (b) relationship performance with the importer versus competitors (r = 0.30; t = 3.28), (c) relationship performance with the supplier (r = 0.32, t = 3.37), (d) product quality performance of the supplier (r = 0.24, t = 2.41), and (e) importer’s satisfaction with the quality of the supplied product (r = 0.37; t = 3.92). Given that all of the coefficients are positive and significant (at p < .05 or better) – a much greater proportion than should result from chance – an association probably exists between that networks’ communication/interaction and network export performance, and consequently the nomological validity of the five proposed dimensions finds support (Cadogan, Diamantopoulos, & de Mortanges, 1999; Cross & Chaffin, 1982).

7. Theoretical contribution

While the above framework and results are heartening for the future of export performance measurement, they also highlight the fledgling nature of the field’s development, and thus demonstrate a clear need for further development of additional export performance measures which reflect the importance of a network of ties in an international business context. Contrarily to the traditional export performance measures presented in Table 1, which consider only the exporter as the main actor in the network, the NEP Scale looks to export performance through the network lens and thus looks at multiple actors in the chain and includes suppliers (the actor before the exporter in the chain), and the importer (i.e., customer— the actor after the exporter), as well as the exporters themselves. That is, we present three key actors versus one.

The resource-based view of the firm (RBV) emphasizes the notion that resources owned or controlled by the firm have the potential to generate sustained competitive advantage when they are inimitable and non-substitutable (Gulati et al., 2001). We propose that international business research should interpret a firm’s network as a vital, inimitable and non-substitutable resource. While scholars typically considered such resources to be a result of internal processes, our findings suggest that exporting firms might further improve – and in some cases create unique business networks – through formal and informal communication and by involving all the interrelated parties during implementation of the strategy. To do so, we assess positional advantage and differentiation (cf. Morgan et al., 2004; Song & Parry, 1997) while considering different sides of the network, such as the relationship with the suppliers as well as the perspective of customers regarding the degree of satisfaction and quality levels. With the most recent paradigm, which shifts away from models of centralization and hierarchy to networks and interdependence, a clear case exists for granting equal consideration to external processes of value creation. This paper identifies the need to consider the wider export network when assessing export marketing and its
links to export performance. Export performance is a complex multi-dimensional construct, relying on a host of different and interrelated variables internal and external to the firm (Katsikeas et al., 2000). Thus, measures of export performance should also be multi-dimensional, include the relationships with different stakeholders, include the opinion of different internal stakeholders, and examine all value adding processes involved with exporting.

8. Managerial implications

There are innumerable difficulties in implementing relationship marketing scales and bringing relationship marketing and network theory into practice. Some of the reasons previously presented (see: Lages, Lancastre, & Lages 2008a) include the difficulties in gathering data on different sides of the dyad and combining objective and intangible metrics. In addition, in an international context because relationships transcend national boundaries, they become more complex due to environmental differences across markets. Nevertheless, in order to best gauge the value of particular export activities, managers are encouraged to examine inputs and outputs across the entire exporting network.

The network export performance (NEP) scale provides a more holistic lens to approach this rather complex task. By breaking down the exporting network into five core dimensions: (a) overall export venture performance, (b) relationship performance with the importer versus competitors, (c) relationship performance with the supplier, (d) product quality performance of the supplier, and (e) importer’s satisfaction with the quality of the supplied product—the NEP Scale enables managers to isolate different export network functions for assessment. This allows managers to better identify problem areas and recognize how value is created and lost through network flows. The network approach of the NEP Scale compliments the multi-dimensionality of export performance by recognizing as sources of power both the resource attributes internal to a firm, as well as the structural constraints and opportunities that exist externally within the large network (Rowley, 1997).

The information gained through the NEP Scale is highly beneficial to management in three principal ways. First, an accurate measure of export performance within different areas of the export network and from differing perspectives allows management to make the best decisions with regard to resource allocation, satisfying the greatest number of stakeholder groups. Second, the NEP Scale produces a comprehensive measure of returns on marketing and export performance. This way it prevents the mismanagement of important intangible sources of competitive advantage by recognizing the high potential value of relational assets, such as reputation and relationships with other network members. Finally, the more holistic approach taken by the NEP Scale encourages managers to adopt a wider, strategic view of the exporting process, taking into consideration processes and relationships existing between and beyond the traditional dyadic domestic and international levels. This will in turn foster higher overall productivity and satisfaction with exporting processes.

9. Public policy implications

As the NEP Scale encourages wider and more strategic consideration of the exporting process for marketing and business managers, so, too, broadens the scope for analysis at the macro-level. The methodological rigor underpinning the NEP Scale and its formulation offer useful guidelines for public policy decision makers for whom accurate measures of export performance is a high priority. For example, the introduction of multiple items from different network perspectives with multiple sub-dimensions overcomes regular or random fluctuations in single items of export performance, which undermine the validity of public policy decisions. Similarly, the recognition that the relationship between different NEP dimensions and sub-dimensions is not equal allows for a heightened understanding of the complexity of export performance and how emphasizing a single aspect may come at the expense of another. Better measures of export performance facilitate a better understanding of the exporting process for export advisors, and also those seeking advice. More knowledgeable advisors are able to share their wisdom with exporters at all levels, assisting them with the diagnosis of potential problems and areas of opportunity. The attainment of a given level of export performance is also often the basis of national funding schemes and other critical resource allocation programs for export ventures. Hence, accuracy of measures is of great monetary value for public policy makers too. Finally, export promotion agencies may benefit from more comprehensive export measures. The key role of export promotion agencies is to assist first-time and expanding exporters to succeed. As a result, agencies require an understanding of what drives success, and also require accurate measures of success.

10. Research limitations and directions for future research

The review of the existing research found in the introductory sections of this paper highlights the absence of a widely accepted definition of export performance and measurement. As a result, the NEP Scale, whose starting point is found within the literature, may benefit from further research and the strengthened theoretical grounding that results.

From a methodological perspective, the usual limitations of the survey method apply. The question of generalization inevitably arises from the use of a limited number of participants and extrapolating samples to populations. While the NEP framework may achieve a greater level of validity and rigor by including perspectives from key network partners, the scale is not entirely comprehensive in nature. Many other kinds of network members exist outside the two primary groups studied, and even within these groups significant differences between members exist—suppliers other than those related to products, for example. In a similar way, although the questionnaire sought responses from more than one key informant, the study still
did not embrace wider views. Future research could potentially include multiple informants with involvement in different aspects of the business operations. A comparison of more strategic versus more operational aspects of business and/or more production-oriented versus marketing- and sales-oriented business might prove to be a useful direction for future research. In particular, the use of not just a greater number of informants, but also informants who may provide additional perspectives to make overall measures more holistic, would be of great interest to academia and practitioners alike. Additionally, researchers continue to question whether the divergent findings on the relationship between export strategy and export performance is a consequence of variables operationalization or a result of the different antecedents and consequences. As such, in addition to export performance scales, the development of marketing strategy scales applicable to future exporting research is also very desirable (see *Lages et al., 2008b*).

Another limitation is that the research context involved only one country, and exclusively industrial exporters, which means that the generalizability of the results requires further testing. Cross-country studies of a more in-depth nature may reduce the limitations stemming from single-country samples. As *Styles (1998)* and *Cavusgil and Zou (1994)* also observe, issues may arise as survey participants provide retrospective performance data. This perspective may result in inaccuracies of memory and access issues, also threatening generalizability. Another possible, yet difficult, future research pursuit may therefore include the regular and longitudinal tracking of export performance. That said, such longitudinal and cross-cultural studies would require a consistent and universally accepted measurement for export performance, an impossible goal for current export performance research, which remains in disagreement. Thus, in light of its context and the cross-section of different management representatives participating in the study, their significant knowledge of export operations performance, and their low levels of non-response, the NEP Scale represents a high level of methodological rigor and presents great potential for future development.

### 11. Conclusion

As *Rowley (1997:894)* states, "network models begin where stakeholder research stops – the dyadic relationship – and examine systems of dyadic interactions, capturing the influence of multiple and interdependent relationships on organizations’ behaviors." In the contemporary interdependent market environment the case for a network approach to export performance measures, and export strategy more generally, has never been greater. The existing export literature, which already demonstrates substantial progress, also reveals an opportunity for development centering on the reliance of global organizations on the myriad different stakeholder and network groups involved in exporting. The NEP Scale contributes to the literature and practice by incorporating economic and relational performance dimensions across this diverse network of export actors. At the managerial and public policy levels, the NEP Scale may help practitioners to monitor and evaluate the value of the export operations. This in turn will allow decision makers to define improvement strategies and actions while taking into consideration the needs of different stakeholders and the influence of other members of the domestic, international and cross-national export network. Most importantly, however, the NEP Scale builds on and expands the current understanding of export marketing and performance. The NEP Scale represents the first step toward the successful quantification, and therefore management, of the complex world of exports and their networks.

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### References


